

**Whistleblowing on food fraud:
Analysing consumer whistleblowing
intentions in the United Kingdom
through the lens of the
development of the whistleblowing
triangle and theory of planned
behaviour.**

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of Doctor of Philosophy**

By

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Abstract

Whistleblowing is a topic of interest that has attracted great global attention from various stakeholders in many countries worldwide including the United Kingdom. At its core, whistleblowing has been established as one of the most effective ways to tackle unethical practices, fraud, and other illegal engagements in organisations. Whistleblowing can be explained as the action an individual takes to disclose wrongful practices or unethical practices in a firm. It can be conducted internally or externally by the individual. The reason behind disclosing this information is to obtain corrective actions from the respective parties. However, blowing the whistle is risky as the whistle blower might encounter threats, retaliation or even job loss for disclosing the information. Therefore, countries need to establish whistleblowing protection legislation and companies to create robust channels for reporting unethical practices. In the United Kingdom, the Public Interest Disclosure Act was established for the protection of whistle blowers. Since its creation, various amendments have been made and policy agencies have established policies to better protect whistle blowers. However, whistleblowing is still an action individual are reluctant to undertake.

As stated above whistleblowing has been used to tackle various unethical practices. Previous whistleblowing studies have only dealt with addressing corporate fraud or financial fraud. Researchers have created models to address corporate fraud or financial fraud. However, most studies have neglected to use whistleblowing to address food fraud. Despite food fraud cases increasing globally. This justifies the need to conduct research with regard to the whistleblowing model and food fraud.

This research aims to create a whistleblowing model by incorporating the theory of planned behaviour and the development of the whistleblowing triangle. This model will be used to understand factors that led consumers to report unethical food practices. As stated above

whistleblowing is still an action that individuals are reluctant to undertake. Our study will try to understand which factors will lead consumers to report unethical food practices.

This research sheds light on the whistleblowing literature as it will develop a whistleblowing triangle and theory of planned behaviour to create a model to address food fraud. The incorporation of these two models will help us understand consumer whistleblowing intention, specifically in the United Kingdom.

On the same token, this research is unique as it uses consumers as a sample in the area of whistleblowing, previous research has focused on using employees, managers, and internal auditors. The use of consumers in the whistleblowing literature relating to food fraud is significant because consumers are very important stakeholders in the food supply chain as they are the end users or consumers of the goods. Furthermore, consumers have the power and authority to notice wrongdoing and report it. Lastly, consumers will be more inclined to take a keen interest in the topic of food fraud and whistleblowing as it directly affects their health should a company engage in food fraud, likewise, these consumers are sacrificing scarce resources in the form of money for this food therefore, they would be further inclined to ensure their resources are not being exploited by supply of fraudulent food. With the ongoing food frauds taking place consumers have now become aware of the right procedures or practices with regards to food production. As a result, they become key factors in preventing food fraud.

To understand consumer whistleblowing intention in the United Kingdom a survey was provided to consumers. The study obtained 514 respondents of which 221 were male and 291 were female. Our study highlights that ethical responsibility is positively and significantly related to brand loyalty, barriers to whistleblowing are negatively and significantly related to brand loyalty, ethical responsibility is positively and significantly related to social support, barriers to whistleblowing are positively and significantly related to social support, social support is positively and significantly related to brand loyalty, and barriers to whistleblowing is positively and insignificantly related to ethical responsibility. These findings indicated consumer whistleblowing intention. We now understand what will lead consumers to report unethical food practices in the United Kingdom. In addition, this study has provided robust managerial implications.

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Declaration

I hereby declare that the thesis is based on my original work. I also declare that it has not been previously submitted for any other degree at Brunel University or other institutions.

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1. Introduction

1.1 Research introduction and background

In the case of whistleblowing and its definition, various researchers have defined whistleblowing. However, one of the most used definitions was created by Near and Miceli {1985}. These researchers define whistleblowing as the act of revealing unethical, harmful, and illegal practices in an organization by both current and former members of the organization. The act of disclosing unethical, harmful, and illegal practices in an organization is to ensure action is taken to avoid this from taking place again. Unethical practices can be categorized into the following: financial scandals in which financial books are illegally manipulated, sexual misconduct, and the production of goods and food in an unethical manner. It is worth noting that all these stated previously will have an impact on all stakeholders in the organization. It is therefore important for organisations to carry out their activities in an ethical manner.

The 21st century has been characterised by an increase in global economic loss sustained through food fraud and wrongdoing in organisations. A study done by {Cattini 2016} found that food fraud costs the industry approximately \$10 - \$15 billion annually, a figure that grows year to year. On the same token, Spink et al., {2019} states that unethical food practices are on the rise and consumers and regulatory bodies are becoming more and more aware. Spink et al., {2019} study comprised of 166 World Health Organisation states, and results obtained indicated that 70% engage in food fraud prevention, and 97% of respondents suggested more guidance on ways to prevent food fraud. This indicates that there is cause for concern in the food industry that needs to be addressed.

Shipments of food fraudulent in nature are constantly being seized around the world by customs and local authorities. Notably, unethical wrongdoings can involve a wide range of severe and serious cases such as food fraud, financial fraud {WorldCom scandal} and production of hazardous products {GlaxoSmithKline} all of which have a proven track record of negatively affecting the public. Nevertheless, it is crucial to note that all the scandals stated above were initially detected through ordinary individuals taking a keen interest in the organisation thereby blowing the whistle.

Therefore, the act of whistleblowing is of great importance in society and organisations as it starts a chain of events that ultimately leads to government authorities acting on these unethical wrongdoings. Once the information has been disclosed the unethical practices are addressed and potentially resolved.

Despite whistleblowing being a good deed addressing fraud, it is key to note that the whistleblower is not guaranteed a normal life after exposing the wrongdoing. For instance, there is a possibility that they will face challenges in finding a new job, financial losses and destroyed careers {Arnold and Ponemon, 1991; Miceli, 1991; Near and Schwenk, 1991}. This indicates the complexity and risks that come with whistleblowing, especially with regard to an internal member blowing the whistle. Due to this fear, some individuals may ultimately choose not to report the wrongdoing due to fear of job loss, destroyed career and financial loss.

Returning briefly to the definition of whistleblowing. Whistleblowing can be defined as the deliberate non-compulsory act of exposing wrongdoing information on public record by an individual who has had access to this information {Jubb, 1999}. Additionally, whistleblowing reporting can either be done internally in the organisation through top management or externally through the media and police to mention a few. According to the Association of Certified Fraud Examiners {2018}, the number of whistle blowers reporting wrongdoing has increased over time which is in line with the increase of wrongdoings being observed over the same period in question. This therefore means individuals both internally and externally are taking a keen interest to engage in whistleblowing. The goal of the whistle blower disclosing information is to potentially provide remedial action by respective parties for the wrongful practices disclosed.

As stated above the action of whistleblowing comes with risks, the individual is faced with complex decisions whether to blow the whistle or not. Numerous factors may determine if an individual will potentially blow the whistle or not. For this reason, whistleblowing has drawn a lot of attention from academia to examine factors that may influence an individual to report wrongdoing. It can be noted that vast research has been conducted with regard to examining factors that may influence an individual to report wrongdoing internally. However, there is little to no research covering the factors that may influence an individual to report wrongdoing externally.

To date, the whistleblowing research conducted includes internal members in the organisation reporting wrongdoing {Park and Blenkinsopp, 2009; Rothwell and Baldwin, 2007; Keenan, 1990; Jackson et al, 2011; Mansbach and Bachner, 2010; Hwang et al., 2008; Xu and Ziegenfuss, 2008}. The above articles established that reporting of wrongdoing by the internal

members assisted in preventing wrongdoing. However, these researchers faced limitations such as not measuring the actual behaviour of whistleblowing {Rothwell and Baldwin, 2007; Keenan, 1990; Jackson et al, 2011; Mansbach and Bachner, 2010; Hwang et al., 2008; Xu and Ziegenfuss, 2008}. This form of measuring whistleblowing did not indicate the actual act of individuals blowing the whistle but instead measured it through the creation of scenarios. For this reason, this limitation does not give a clear indication of actual whistleblowing by an individual.

It can be noted that researchers are more inclined to conduct whistleblowing research through scenarios than by measuring the actual behaviour. This is because of the nature of whistleblowing and how respondents might not want to engage in the actual whistleblowing but would be comfortable being offered a scenario.

Park and Blenkinsopp {2009} are faced with the generalisability of their results and suggest that fellow researchers conduct studies on a wider range of occupations. The researcher faces this challenge because their results are only obtained from one occupation {police}. For this reason, they suggest a replication of their study using other occupations because the results obtained might not be appropriate for other occupations. This indicates that the generalisability of results is linked to using one occupation in whistleblowing literature.

Bearing in mind that using only employees as whistleblowers may no longer be valid today and may not represent the potential whistleblower. This is because individuals now have access to information about various activities in a business. For example, suppliers, customers, and retailers can all participate in business operations giving them a chance to report wrongdoing. Using external members of a business to report wrongdoing is further supported by Culiberg and Mihelic {2017}. They suggest the introduction of different types of whistleblowers yields prospects of inspection, yielding different results { Culiberg and Mihelic 2017}.

It has been further discovered that at present researchers have not treated examining external whistleblowers in much detail. A significant review conducted by Vanderkekeve and Lewis, 2012; Culiberg and Mihelic, 2016} suggests that there is a significant gap in external whistleblowing that needs to be addressed. This might yield different results that can be developed by future researchers.

Reporting of wrongdoing by external members such as consumers has been neglected in the whistleblowing literature. Culiberg and Mihelic {2017} further suggest that it is key to conduct whistleblowing behaviour on potential whistleblowers from outside the organisation and not only members of the organisation.

This is further justified in Table 1 which shows that most studies in the field of whistleblowing have only focused on internal whistleblowers and internal whistleblowing. Table 1 External whistleblowers

AUTHOR	RESEARCH	YEAR
Latan H, Chiappetta Jabbour C.J., Lopes de Sousa Jabbour A.B.	Social media as a form of virtual whistleblowing Empirical Evidence for Elements of the Diamond Model	2021
Johannesen N., Stopler T.B.M	The Deterrence Effect of Whistleblowing	2021
Smaili N., Arroyo P.	Categorisation of Whistleblowers Using the Whistleblowing Triangle	2019

As stated above there is limited research on external whistleblowing. Researchers such as Latan et al {2020} undertake research specifically using customers as a sample. They develop the fraud triangle into a fraud diamond to understand the intention to disclose wrongdoing by customers through virtual channels. They later face limitations in their research such as they only measure whistleblowing intention and not the actual behaviour of the whistleblower. Suggesting that future research should consider the actual behaviour of the whistleblowers. It can be noted that another limitation faced is that they only use diamond elements to understand the customer's intention to blow the whistle. Several factors such as the nature of wrongdoing or laws and policies have not been used and the research argues other researchers to use this in their future research.

It is worth noting that after further investigation the research conducted by Latan et al {2021} is the only research that has been conducted using customers as a sample in whistleblowing literature. Previous published whistleblowing articles have been limited to internal stakeholders. This shows that there is a gap in the literature with regard to customers and whistleblowing. Despite

customers playing a huge role in the business they have been neglected in the whistleblowing literature. Most scholars to date have neglected research with regard to customers and whistleblowing. Despite various research urging the use of external whistleblowers to critically understand whistleblowing.

The research to date has tended to focus on financial or corporate wrongdoing which an ordinary person without any experience will not understand. Using customers to understand the intention to blow the whistle with regard to food fraud is essential because they will not require any form of experience. This means an ordinary person {customer} will be able to understand or identify wrongful food practices. Such as the mislabelling of products which does not require any form of experience to notice or understand. For instance, a consumer is lactose intolerant, and they purchase a snack bar that clearly states dairy-free, however, the snack bar contains dairy. The consumer can notice that it has been mislabelled. This further suggests that researchers should consider that some research might only be suitable for a certain population. As indicated previously, employees have outweighed customers in previous whistleblowing literature because in the previous year's information couldn't be easily accessed. To date, technology has evolved customers can obtain various information to determine wrongful practices.

At this point, it is important to address what leads a whistle blower to blow the whistle. Whistleblowing models have been established to address what leads individuals to blow the whistle { Near and Miceli, 1985; Near and Miceli, 1992; McLain and Keenan, 1999; Alleyne et al, 2003}. Despite having these models' previous studies on whistleblowing, in the context of reporting wrongdoing have mainly focused on corporate fraud and financial fraud {Xu and Ziegenfuss, 2008; Arnold and Ponemon, 1991; Hwang et al., 2008; Patel, 2003; Taylor and Curtis, 2019}. At present there is a limited number of whistleblowing studies that have been conducted regarding food fraud prevention {Joenpera, Koskela and Lunden, 2022}. It can be noted that food fraud in the context of whistleblowing has not been greatly investigated which shows the limited research on food fraud and whistleblowing. Due to the limited availability of food fraud information, Joenpera, Koskela and Lunden {2022} encounter the following limitations in their study. They are not able to analyse all the food fraud cases because the system only captures recent incidents. The results of this research raise concern that individuals may not have the appropriate knowledge to report unethical food practices. A notable amount of research has been conducted on food fraud and how to address it.

Significant research has pinpointed blockchain as a method of preventing food fraud {Rogerson and Parry, 2020; Treiblmaier and Garaus,2022}. Using blockchain technology will enable tracing the origin and flow of goods to prevent food fraud. It can be noted that research conducted using blockchain has shown success but has encountered the following limitations. Blockchain will require consumers or users of the technology to have a good understanding of the technology to interpret findings {Rogerson and Parry, 2020; Treiblmaier and Garaus,2022}. Treiblmaier and Garaus {2022} indicate that this technology will only work in the supply chain that is adequately digitised which is very costly. This raises questions about how small and medium-sized businesses will be able to use this technology to avoid food fraud. It is important to perform research that will be beneficial to both large-scale businesses and small and medium-sized businesses. At this point we can note that there is a gap in the food fraud literature; there is no appropriate technology or model that can be used by businesses without facing challenges such as lack of knowledge, high costs etc. For this reason, the whistleblowing triangle is developed to address future research calls by Culiberg and Mihelic {2017}. The above researchers suggest that the whistleblowing literature has overlooked the first and last steps in a whistleblower deciding to blow the whistle. This research will answer calls suggested by Culiberg and Mihelic {2017} by using the whistleblowing factors {opportunity, pressure, rationalisation, capability, seriousness of wrongdoing, laws and policies} as the first and last steps in consumers deciding to blow the whistle. After establishing the need to conduct research with regards to preventing food fraud potentially through whistleblowing. The researcher wants to highlight why this study is being conducted in the United Kingdom and not in any other country. It can be noted that the United Kingdom has witnessed a significant increase in unethical food practices. The increase in unethical food practices has raised fears of food safety and consumer trust. The complications of the food supply chain and the demand for transparency have allowed the food industry to be vulnerable to unethical food practices. A key incident in the United Kingdom took place in 2003 highlighting unethical food practices. This incident revealed that beef products being sold in supermarkets contained horsemeat. According to Smith and McElwee {2021}, this incident raised concerns about the integrity of the initial stage of sourcing food and the effectiveness of existing regulatory frameworks. As stated above the complication of the supply chain has allowed for unethical food practices to take place in the United Kingdom. This is further supported by researchers such as Smith and McElwee {2021} who suggest that the horsemeat scandal that took place in 2013 highlights that the complication of the supply chain makes it difficult to understand the origin or source of food. It can be noted that after the horse meat scandal, consumers did not trust processed

meat products and opted to purchase meat products directly from butchers. This move by consumers to opt to purchase products directly from the butchery was to ensure the authenticity of their meat products {Ahatovic et al., 2018}. It can be noted that the complication of the supply chain mainly centres around developed countries such as the United Kingdom. This complexity stems from the importation of food products from multiple countries, and supply chains in return traceability becomes a challenge. The complexity of the supply chain allows room for mislabelling, adulteration, and wrongful substitution of ingredients.

Another notable food fraud experience that took place in the United Kingdom in previous years is in relation to the dairy sector. The dairy sector is a very key sector in the food industry. Several consumers are at risk of health complications and even death in the dairy sector. According to Montgomery et al., 2020 a review provided adulteration and misrepresentation of dairy products between 2015 and 2019. The health impact of these dairy scandals causes vomiting, nausea, and long-term health risks, including cancer as reported by the World Health Organisation {World Health Organisation, 2020}.

It can be noted that through these incidents recorded the Food and Safety Act has put in place stricter regulations to ensure consumer protection {Montgomery et al., 2020}. However, the United Kingdom's advertising standards authority has intervened against some dairy brands promoting exaggerated health benefits such as milk improving immunity {ASA, 2021}. On the same token an investigation was carried out on cheese products sold in the United Kingdom it was discovered that some cheese products contained starch and vegetable oils instead of the required dairy products {Guardian, 2021}. This would have a big health impact on the health of consumers by causing allergic reactions. For example, consumers allergic to gluten would face allergic reactions from the starch in the cheese which would cause serious health risks. With this in mind, we can note that the substitution of wrongful ingredients in dairy products is of great concern. This act may be due to companies wrongfully substituting products for financial gain. Referencing back to the need of the study being conducted in the United Kingdom, we can note that the United Kingdom is a developed nation. For this reason, the country can offer high-value products such as organic and premium products which will most likely not be able to be offered in developing countries. It is worth noting that premium products require good quality ingredients and will cost more than ordinary products. For this reason, products in developed countries are prone to wrongful substitution to obtain

financial gain. For example, extra virgin olive oil will be substituted with low-quality olives to obtain financial gain leading to outstanding profits by the company.

It is worth noting that several cases of unethical dairy practices in the United Kingdom have taken place over the years. Notable examples include: The 2008 melamine contamination of milk scandal that took place in China, the melamine-contaminated milk products were imported into the United Kingdom. This incident raised concerns among consumers because melamine can cause kidney damage, renal failure, and possible death in infants { European Food Safety Authority, 2009}. Apart from the dairy industry being affected in the United Kingdom, the Poultry industry has encountered a few unethical practices. In 2014 it was discovered that a raw chicken contaminated with *Campylobacter* was returned to the production line to proceed for consumption. It can be noted that this form of negligence by the named farm can cause great health risks to consumer health such as Diarrhoea, fever, and abdominal pain. Most recent unethical food practices include lead contamination in livestock near abandoned mines, which can have an impact on consumers' health such as neurological and developmental issues. With the information provided the researcher concluded that the study would have to be conducted in the United Kingdom solely because it is a developed country that is prone to unethical food practices due to the complexity of supply chains, regulatory gaps after leaving the European Union, economic gain by companies, effective reporting mechanisms. On the other hand, selecting a developed country such as the United Kingdom does not indicate that developing countries do not experience unethical food practices. It might just reveal that developing countries have a lower detection of unethical food practices resulting in the fraud being masked.

Finally, after extensive literature analysis, there is a lack of literature regarding customers' roles or actions in whistleblowing. A brief reminder is the researcher came to this conclusion due to various reasons such as most whistleblowing literature only comprised of corporate scandals or financial scandals. Despite these unethical practices being important it is also important to address food fraud which does have an impact on all stakeholders of a business. For example, unethical food production can have an impact on consumers' health that may lead to death in some cases. As stated previously key stakeholders in a business are affected by food fraud or any type of fraud. This means they have the power to report unethical or harmful practices or illegal practices once they are faced with them. However, most of the research conducted only highlights the internal stakeholders reporting this wrongdoing. Therefore, it is necessary to update the literature and potentially create new avenues of study by introducing other stakeholders such as consumers to blow the whistle.

Consumers are key stakeholders of a business, and they are considered external stakeholders. Whistleblowing is a broad topic and various researchers such as {Park and Blenkinsopp, 2009; Rothwell and Baldwin, 2007; Keenan, 1990; Jackson et al, 2011; Mansbach and Bachner, 2010; Hwang et al., 2008; Xu and Ziegenfuss, 2008} have conducted research centred around whistleblowing. They have created models to help prevent or report unethical practices. However, most of this research as stated above is mainly centred if not all centred around corporate or financial fraud. This raises questions about what models have been created to prevent food fraud globally? With this information in mind, the researcher would now like to direct you to their main aim to explore or identify factors that influence a customer's intention to blow the whistle in the context of food fraud.

1.2 Research Objectives

This research aims to understand consumer whistleblowing intention with regard to food fraud, a study conducted in the United Kingdom. This is attained by firstly examining studies conducted by various researchers with regard to whistleblowing studies, food fraud and consumer behaviour, their consequences and factors that would contribute to the literature.

Our study develops a new whistleblowing model, indicating that consumers play a key role in whistleblowing and have the potential to prevent unethical food practices.

Firstly, whistleblowing factors {opportunity, pressure, rationalisation, seriousness of wrongdoing, laws, and policies} influence consumers whistleblowing intention upon discovering unethical food practices. Secondly, consumer whistleblowing behaviour is examined through the use of the theory of planned behaviour in this study. It is further suggested that once consumers engage in reporting unethical food practices the following outcomes may be viable: brand trust, boycott, and word of mouth. It can be noted that these outcomes have the impact of preventing food fraud. With the information provided above, below are the objectives of the study:

- To develop an integrated theoretical model combining the whistleblowing triangle/diamond framework and the theory of planned behaviour to explain consumer whistleblowing intention in food fraud contexts
- To investigate the application of the theory of planned behaviour in predicting consumer whistleblowing intention regarding food fraud.
- To explore the outcomes of consumer whistleblowing intention, including brand trust, boycott behaviour and negative word of mouth in the context of food fraud.

1.3 Significance of study

1.3.1 Theoretical Contribution

This study has the potential to make a vital academic impact across various disciplines such as consumer behaviour, food safety, business ethics and regulatory studies.

It is worth noting that most whistleblowing studies have been determined to understand employees as whistle blowers within a firm {Miceli and Near 1992}. Our study extends and contributes to the whistleblowing literature as it is focused on consumer intention to report wrongdoing with regard to food fraud. Consumer-driven whistleblowing and food fraud are both topics that have been underexplored as stated in the previous sections of this research. Our comprehensive model tries to address these gaps with regards to using different stakeholders in reporting unethical practices, as well as using different unethical practices such as food fraud and not corporate fraud.

Additionally, the use of the theory of planned behaviour in this research provides a significant contribution to the literature. The theory of planned behaviour has been used to investigate how attitude, perceived behavioural control and subjective norms influence consumers to report unethical food practices.

According to Vitell et al., 1991 traditional consumer ethics theories mainly centre around purchasing behaviour. Purchasing behaviour is an important aspect of understanding consumer behaviour but implementing consumers as active reporters of unethical practices will contribute to the literature significantly. In this research, we focus on understating the intention of which consumers will report unethical food practices. It is worth noting that this research presents whistleblowing as a form of ethical consumer activism.

A key academic contribution of this research is the creation of a new model to explain the drivers, barriers and mechanisms that would encourage consumers to report unethical food practices. With this in mind, we can note that this new model created bridges gaps between various disciplines.

1.3.2 Managerial Contribution

Key contributions from this study will assist companies by demonstrating ethical behaviour which will enable consumer trust and confidence. If consumers are met with a firm that allows reporting of

unethical practices or reporting of unethical practices is encouraged and supported by the firm. They are more likely to have great confidence in the firm in particular with food safety measures they have put in place. Referencing to the aim of this study, which is to understand consumer whistleblowing intention, the firm can use our findings to create robust reporting channels that will encourage consumers to report unethical practices. The creation of robust channels is to ensure smooth reporting of unethical practices in an efficient and effective manner. Our results indicate that individuals that have a low income will tend to fear reporting unethical food practices due to fear of loss of financial stability. Therefore, firms should be able to create robust anonymous reporting mechanisms that will assure consumers the protection they need.

1.4 Scope of study

The boundaries of this study describe what is included and what is excluded in this study. Firstly, this study focuses on the United Kingdom, which means that the findings obtained in our study are not generalizable. They cannot be used to understand consumer whistleblowing intention in different countries that have different regulatory frameworks, food and safety issues and different cultural attitudes. For example, the findings of this research cannot be used to understating consumer whistleblowing intention in China or Zambia due to different cultural attitude. However, our findings can be used to compare with findings from other countries. The geographical location of this study acts as a boundary in the research, the differences between the United Kingdom's food standard agency and other international regulations. Suggests that consumer attitudes may vary elsewhere. The study aims to understand consumer whistleblowing intention, for that reason, it focuses on the intention to report unethical food practices rather than the actual reporting of unethical food practices. The use of behavioural theories such as the theory of planned behaviour measures an individual's attitude, subjective norms, and perceived behavioural control rather than showing an in-depth analysis.

This research is focused on food fraud which mainly involves adulteration, mislabelling, and counterfeiting of food products. However, it does not consider ethical issues such as sustainability, animal welfare etc. These ethical issues in food production are outside the study's scope and therefore are a boundary to the study.

As stated earlier this study aims to understand consumer whistleblowing intention. Therefore, this study examines consumers as whistleblowers and has excluded suppliers, employees, and regulators. It can be noted that various stakeholders in the business such as suppliers, employees, consumers,

and regulators will all have different motivations and barriers to reporting unethical practices. For this reason, the use of only consumers in our study acts as a boundary for this research.

1.5 Chapter Synopsis

This thesis contains 6 chapters, and the contents are summarised below.

- Chapter 2- Literature review: this section of the thesis discusses relevant information about whistleblowing, comprising a critical analysis of whistleblowing literature, definitions of whistleblowing by various researchers also including the type types of whistleblowers {internal and external whistleblowers}. The Literature review chapter contains key information pertaining to the whistleblowing triangle which has mainly been used in financial and corporate fraud. The researcher has developed this whistleblowing triangle and it comprises the following factors: pressure, opportunity, capability, rationalisation, seriousness of wrongdoing and laws and policies. As stated above this chapter contains information regarding types of whistleblowers, this research focuses on the external stakeholder {consumer} to understand their intention in reporting unethical food practices in the United Kingdom. Chapter 2 contains key information with regard to vast theories in whistleblowing literature. Such key theories used in whistleblowing literature include organisational justice theory, moral intensity framework, social exchange theory, prosocial behaviour theory, agency theory, and theory of planned behaviour. After establishing key definitions of whistleblowing, types of whistleblowers, food fraud, consumer whistleblowing, and the key theory selected for this research {theory of planned behaviour}, the next section in this chapter is the hypotheses development derived from the development of the whistleblowing triangle and theory of planned behaviour. Lastly, the conceptual framework is created from all the information provided above.
- Chapter 3- Research Methodology- This chapter comprises a detailed approach of quantitative research for this study, and the research philosophy adopted, focusing on the use of survey methods to obtain data. This section contains an analysis of data obtained from 513 consumer respondents to test and validate the conceptual framework developed in Chapter 2. The methodology chapter contains key information such as the pilot test, the survey design used in this research to obtain data, how the data was collected and the sampling strategy. After obtaining 513 respondents from consumers to understand their

intention to report unethical food practices. Chapter 3 highlights the data being analysed using SPSS and key findings are discussed in chapter 4.

- Chapter 4- Analysis: under this chapter, the data collected from 513 respondents is analysed using SPSS. For the researcher to interpret the findings to understand the intention of consumers to report unethical food practices.
- Chapter 5- Discussion: Referencing back to the aim of this study is to understand consumers' whistleblowing intentions with regards to food fraud. the researcher in this chapter discusses all the key findings obtained from the data collected. Providing key findings on implications for existing literature and theoretical contributions to the whistleblowing literature, food fraud literature and consumer behaviour literature.
- Chapter 6- The researcher finally provides robust recommendations to managerial and policy entities. The study concludes with the researcher addressing the challenges they encountered while undertaking the study, the limitations of the study and recommendations to fellow researchers on future research.

2. Literature Review

Chapter one of this research introduced the background of the study, research problems, purpose of research, research question and the significance of the research. This means the reader has been provided with a brief background of the importance of whistleblowing in preventing unethical practices. The researcher emphasises how important consumers {external stakeholders} may add value to the whistleblowing literature. Especially with regard to external whistleblowing intention. As previously stated, the majority of research focuses on internal stakeholders and internal whistleblowing.

The following chapter will be the literature review which will elaborate on the literature on whistleblowing in a general context, whistleblowing in relation to food fraud with emphasis on consumers. This chapter is vital to evaluate the current literature and pinpoint avenues for further whistleblowing research.

In the first section an analysis of whistleblowing is presented: which comprises of what whistleblowing is, types of whistleblowers {internal and external whistleblowers}, and whistleblowing in the United Kingdom. Followed by an empirical analysis of food fraud and its great importance worldwide. The next section of chapter two is the theoretical approaches to whistleblowing studies. In the third section, the variables in this study are examined and hypotheses are developed. Lastly, the conceptual framework and variables are explained in the last section of the literature review.

2.1 Whistleblowing Reporting

Historically the term whistleblowing is considered the act of revealing unethical, illegal practices that have taken part in an organisation. The revealing of these illegal or unethical practices mainly happens within the organisation or outside the organisation to relevant parties. Xiao and Wong {2021} use the term whistleblowing to refer to the action one takes to report misconduct happening within an institution. This person is known as the whistleblower. In the literature of ethics, whistleblowing has been defined in various ways.

Vandekerckhove {2006} defines whistleblowing as the act of exposing wrongdoing to respective parties outside the firm. Vandekerckhove {2006} developed their definition of whistleblowing from Near and Miceli {1985} that suggests that whistleblowing is the disclosure of unethical practices to higher authorities in the organisation.

Additionally, the act of reporting misconduct can be performed at any time, it could be an incident that is currently happening in the firm, or it could be an incident that took place a few months ago or it can further be an incident you feel might happen in the institution in the future {Gov.uk,2021}.

Various researchers define a whistleblower as an employee in a company who has noticed wrongdoing in a firm according to their understanding and the only way this wrongdoing can be addressed is through reporting the misconduct {Latan, Jabbour and Jabbour, 2020}. In addition, researchers such as Vandekerckhove and Tsahuridu {2010} state that whistleblowing comprises three critical features firstly being the act of reporting the wrongdoing which is considered an intentional act by an individual who has access to the information. Secondly, the nature of the information being reported is perceived to be a wrongdoing that has occurred in an organisation under the accountability of the organisation's administration. Lastly, the disclosure of the wrongdoing is being made to resolve the wrongdoing before the wrongdoing gets out of hand.

From the definitions provided above we can note that whistleblowing aims to address the wrongdoings that are present in an organisation, and this can be done internally or externally. Most of the issues or wrongdoings include:

- Criminal offences which include food fraud.
- Endangering of an individual's health and safety.
- Damage to the environment that may have been caused during the production of goods.
- Miscarriages of justice.
- Hiding any of the above wrongdoings

According to Callahan et al., {2002}, whistleblowing and corporate governance are correlated. Whistleblowing acts as a controlling factor which leads organisations to maintain high levels of

corporate governance. These high levels of corporate governance come from the fear of the negative public attention that would be drawn to the company owing to the whistleblowing disclosure of wrongdoings. As a result, companies are inclined to promote organisational effectiveness, corporate social responsibility, and employee empowerment. These factors stated above are all key to running an effective ethical firm. With this information, we can note that a firm that is run ethically will attract various stakeholders to the business which in return will bring economic success to the business. This is an indication that reporting of wrongdoing is vital as it will be beneficial to all stakeholders of the business.

For this reason, various researchers consider whistleblowing as a prosocial behaviour {Latan et al. 2018, Miceli et al 2008}. Prosocial behaviour mainly involves benefiting others and, in this case, uncovering the wrongdoings of a business will be beneficial to other stakeholders {Latan et al. 2018, Miceli et al 2008}. For example, if a firm seeks to gain a competitive advantage when there is a limited supply of certain food items like beef, it may engage in food fraud by including excess pork meat in the packaging of the beef mince without labelling the products as containing pork. From an accounting point of view, given the limited supply of beef in the industry, this business will be selling more products than its competitors thereby potentially attracting more investors due to the high revenues and potential profits. However, these products are being sold under the pretext of food fraud. Therefore, in this situation, the whistleblower can report this wrongdoing, and this will result in the fall of the share price for the business. This is when the Prosocial behaviour of a whistleblower comes in as their reporting has enabled the stakeholders not to engage with the business. Mainly, because stakeholders will not want to invest in a business that is not conducting their day-to-day activities ethically. At the same time, this will also be a disadvantage for those who were already investors in that firm. This prosocial behaviour essentially was what was observed in the Enron scandal as share prices dropped steeply after whistleblowing action, which admittedly led to many investors losing their investment but more crucially it meant many prospective investors did not invest in a fraudulent company therefore saving this investor their money.

Key researchers such as Dozier and Miceli {1985} propose the prosocial organisational model in relation to whistleblowing. It is observed as a behaviour in which a possible whistleblower

detects a wrongdoing which motivates them to take a three-course plan of action to resolve this wrongdoing {Miceli et al. 2008}.

- At the first stage the potential whistleblower will detect the questionable activity and label it as a wrongdoing.
- During the second stage the potential whistleblower will respond to the wrongdoing by going through it or experiencing it as incorrect.
- During the last stage the potential whistleblower will decide on ways to resolve the wrongdoing and whistleblowing is the only available option {Near and Miceli, 2011}.

2.2 Why whistleblowing in the United Kingdom

On the question of whistleblowing in the United Kingdom. It is important to note that whistleblowing is important in the United Kingdom to assist in uncovering unethical and illegal practices by organisations. As a nation upholding good and robust ethical and legal frameworks is important and the United Kingdom ensures they do that. On the same token, the nation has created and implemented the Public Interest Disclosure Act 1998 {PIDA}. This legislation was created to protect whistleblowers and to encourage them to blow the whistle in the United Kingdom. As we may have noticed reporting of wrongdoing or unethical practices requires protection, and countries providing this will enable whistleblowers to blow the whistle confidently. According to Lewis and Vandekerckhove {2015}, the Public Interest Disclosure Act 1998 is one of the most thorough legal frameworks worldwide as it protects both the private and public sectors. This is a clear indication that the United Kingdom has taken a key interest in ensuring that whistleblowers are protected. Evidently, this should show that individuals would be more inclined to blow the whistle as they will be protected.

As stated in the previous section of this thesis majority of the financial scandals happening worldwide are a result of unethical practices by the employees. With the help of whistleblowers, frauds are being detected in organisations. It can be noted that the United Kingdom has also faced the challenges of financial scandals over the years. For example, accounting scandals that have taken place in the United Kingdom in relation to the manipulation of financial statements include Tesco and West London Mental Health.

It is worth noting that after the global financial crisis that took place in 2008, the United Kingdom introduced robust regulations to encourage whistleblowing during this tough time globally. They also

stipulated in their regulations that senior executives were made accountable for any form of financial fraudulent activities {FCA,2016}.

As mentioned earlier whilst whistleblowers need to detect fraud in an organisation, they also need protection as they blow the whistle, and this is the role of countries to incorporate. The importance of this protection will only encourage individuals to report the wrongdoing, or unethical practices as they will feel confident that they are protected.

Whistle-blowers may choose not to blow the whistle because they do not have the guarantee of protection or financial reward. In certain circumstances, if the whistleblower is an internal employee, they may lose their job after they blow the whistle. For this reason, various countries must put together measures that will help the blower financially and provide protection.

On the same note, the whistleblowing measures and protections being put in place by a country can help eradicate unethical scandals and offer adequate assistance to whistleblowers. Countries such as the United Kingdom have given whistleblowing little to no attention. For this reason, Organisations in the UK are not legally required to put in place policies and procedure in relation to whistleblowing. However, some organisations have included this in their organisational governance.

According to Matthewson {2012}, the UK legislation with regard to whistle blowing is mainly concerned with the protection of the whistleblower and is less keen on rewarding the blower.

Despite the legislation in the act researchers such as Lewis {2008} believe that the Public Interest Disclosure Act 1998 has not effectively offered whistleblowers in the United Kingdom protection. However, Lewis and Vandekerckhove {2015} claim that the Public Interest Disclosure Act is one of the most thorough legal frameworks worldwide as it protects both the private and public sectors. This goes against Lewis's {2008} previous suggestion about the Public Interest Disclosure Act 1998.

It is worth noting that potentially when Lewis {2008} initially analysed the Public Interest Disclosure Act, they discovered that it did not offer whistleblowers in the United Kingdom protection. But after the years it should have been discovered that it does protect the whistleblowers to some degree. It shows that over the years the Public Interest Disclosure Act 1998 has gained favour in protecting the whistleblower. In an important study conducted by Lewis and Trygstad {2009} employees in the United Kingdom are not able to report wrongdoings because they have not been provided the general right to report these wrongdoings. This again goes against the study conducted by Lewis and Vandekerckhove {2015} but favours the study conducted by Lewis {2008}.

2.3 Empirical literature on whistleblowing (internal whistleblower and external whistleblower)

In the last few years, whistleblowing research has revealed key insights regarding the elements and consequences of whistleblowing. Factors such as psychological, organisational, and social factors create a model that influences an individual's decisions to engage in reporting unethical practices. A detailed analysis is presented below summarising key literature with regards to internal and external whistleblowing. This section of the literature review provides the reader with an insight into what studies have been carried out in whistleblowing literature. Specifically with regard to internal stakeholders reporting wrongdoing and external stakeholders reporting wrongdoing. A brief reminder of one of the research gaps the researcher is answering in this study is addressing the use of external stakeholders such as consumers in reporting unethical, harmful, and illegal practices.

As stated above, whistle blowing is divided into two components being internal and external whistleblowers. Key differences between the two include that most internal whistleblowing is resolved without any government penalties or public scrutiny. On the other hand, external whistleblowing is often accompanied by government fines and greater public scrutiny. However, it's worth mentioning that various companies have voluntarily reported their unethical practices to government regulators after an internal whistleblower has raised the concern. This is done so that these firms can minimise the penalties if these government regulators eventually find the unethical practices.

Likewise, firms voluntarily offer this information to government regulatory bodies as they fear the internal whistleblower may use external channels to bring greater attention to the issue at hand. However, some researchers argue that reporting of wrongdoing that is conducted internally should not be regarded as whistleblowing as this is deemed as a simple operational report {Jubb,1999; Courtemanche, 1988}. Several researchers have further dismissed these views and upheld the assertion that internal whistleblowing does in fact belong to the whistleblowing category. This research will address whistleblowing through the use of external channels therefore supporting the works of researchers such as Jubb {1999}.

There is a large number of existing studies that have investigated internal whistleblowers

{Park and Blenkinsopp, 2009; Rothwell and Baldwin, 2007; Keenan, 1990; Jackson et al, 2011; Mansbach and Bachner, 2010; Hwang et al., 2008; Xu and Ziegenfuss, 2008} which has included nurses, accountants, internal auditors, and policemen. It has been discovered that the studies conducted above all proved whistleblowing as a successful mode of addressing wrongdoing. On the contrary, there seems to be a lack of external whistleblower literature. A study conducted in Indonesia was used to determine whistleblowing intention among consumers. It has been discovered that consumers play a key role in identifying wrongdoing and eventually reporting it {Latan Chiappetta Jabbour and Lopes de Sousa Jabbour, 2021}. However, consumers have currently been neglected in the whistleblowing literature.

It can be noted that consumers are in a better position to blow the whistle than employees because they will not face threats and retaliation {Latan, Chiappetta Jabbour and Lopes de Sousa Jabbour, 2021}.

It is therefore crucial to stress with great importance that there is an extreme deficit of research regarding consumers and whistleblowing. Therefore, greater research regarding the above stated gap through this paper will yield positive results not only for firms but economies and societies.

As we pointed out in the previous page, whistleblowing is the act of disclosing an unethical practice in an organisation. The act of disclosing unethical practices can be further divided into internal whistleblowing and external whistleblowing. Internal whistleblowing is the act of revealing unethical, illegal practices within the firm to mainly higher hierarchy such as managers, supervisors etc. It is worth noting that internal whistleblowing is different from external whistleblowing because external whistleblowing involves disclosing unethical, illegal practices to parties outside the firm. This may include the media or respective agencies. This section of the research will go into details of the type of whistleblowers.

2.3.1 Internal whistleblowers

As explained above the internal whistleblowers will be key stakeholders in the organisation that will disclose unethical, illegal, or harmful practices to higher hierarchy members in an organisation. It can be noted that the aim of blowing the whistle will be to prevent future misconduct

however internal whistleblowing is met with fear of retaliation, organisational conflicts, lack of trust in the business and cultural obstacles.

According to information provided by Rothschild and Miethe {1999}, retaliation is a vital hurdle that internal whistleblowers face. They are faced with fears of potentially losing their job once they decide to disclose unethical or harmful practices that the organisation is undertaking. This would potentially have an impact on the whistle blower's career going forward once they decide to disclose the unethical practices. In most cases, internal whistleblowers will face fear of disclosing wrongdoing because of fear of being labelled disloyal to the firm. This is supported by key researchers such as Hofstede {1980}.

Apart from fear of retaliation or fear of being labelled as being disloyal to the organisation.

Miceli et al., {2014} suggest that most firms do not have effective reporting mechanisms or channels. For this reason, internal whistleblowers are not inclined to disclose unethical or harmful practices. It was further discovered that some internal whistleblowers would take the initiative to disclose unethical practices, but they would not be provided with feedback if their claims were resolved {Miceli et al., 2014}. This would essentially lead the whistleblower to lose trust in the organisation.

On the other hand, Rehg et al., {2008} suggest that internal whistleblowers will be more inclined to expose unethical or harmful practices to protect the reputation and legacy of the organisation. From this information provided by the above researchers, we can note the weakness internal whistleblowing may have and its possible drive. Miceli et al., {2014} highlight the importance of good and trustworthy structures that will enable whistleblowers to disclose unethical or harmful practices to encourage them to reveal these practices. This research is supported by Park and Blenkinsopp {2009} who further encourages the necessity for organisations to have good reporting mechanisms. Once an organisation has provided its employees with good and reliable reporting mechanisms, they will have trust in the organisation that their reporting will be heard.

Returning briefly to the definition of internal whistleblowing which involves the disclosure of unethical practices, illegal practices, and harmful practices within the organisation to supervisors and managers. It will be key to note that it is important for the organisation to have good robust reporting channels. As we can note reporting of this wrongdoing will be done internally. It is only necessary for the organisation to have good and robust reporting in place. Researchers such as Park and Blenkinsopp {2009} also indicate the need and necessity for organisations to have in place good reporting channels to enable employees to report wrongful practices. This further supports research

conducted by Seifert et al.2010 which claims that a good reporting mechanism and a safe environment created by the organisation will enable management accountants and internal auditors to report wrongdoing. The need for a safe environment enables a space of fairness which will yield reporting of wrongdoing.

The study conducted by Seifert et al.2010 comprised 232 internal auditors and 215 management accountants which are all key internal stakeholders in a business. This research showcased the importance of work experience with regard to reporting unethical practices or harmful practices. Out of the 232 internal auditors, an average of 19 years of work experience was discovered and an average of 21 years of work experience for management accountants. It is suggested that the internal stakeholders who had higher work experience were more inclined to notice unethical practices compared to those who had less work experience.

Once these channels are formed it is the responsibility of management to ensure they run effectively and efficiently. According to Near and Miceli {1995}, it is key for organisations to have a thorough reporting mechanism that ensures the effectiveness of the reporting and regular improvements. With the information provided above it is worth noting how important reporting mechanisms are to effective whistleblowing. Chiu 2003 performs a study that yields results in line with Seifert et al.2010, Near and Miceli 1995, and Park and Blenkinsopp 2009 which emphasises the need for organisations to provide a robust reporting mechanism. Despite these studies being conducted on different internal stakeholders and different cultural backgrounds, the result is still uniform across the board being that companies can benefit from these studies by providing their stakeholders robust reporting mechanisms.

It is important to note that having the right reporting channels to be used is one thing but not knowing essential information such as whistleblower protection is another. Miceli at., {2014} a well-known researcher in the field of ethics suggest that organisations should provide their employees regular training on ethical practices as well as educate them on their whistleblowing protection rights. For example, in the United Kingdom whistleblowers are protected by Public Interest Disclosure Act 1998.

MacNab and Worthley 2008 performed a study on over 900 professionals in Canada and the United States of America. Their study aimed to understand the relationship between self-efficacy and internal whistleblowing. Results obtained from this study indicate that self-efficiency plays a key role in internal whistleblowing. It can be noted that this particular research supports a study conducted by Micelii et al., 2014 who indicates the need for organisations to provide employees with adequate

training. Once individuals in the organisation have thorough training with regards to ways in which to whistle blow, and their legal frameworks to protect them, then they will be more inclined to blow the whistle. In return, this enables the whistleblower to report wrongdoing efficiently.

Table {} is a summary of the different internal whistleblowers and their respective authors that have been referenced in this research. Such as Chiu {2003}, Nayir and Herzig 2012, Tavakoli et al {2003}, MacNab and Worthley{ 2008}, Barnett {1992}, Robinson et al {2012}, Seifert et al.{2010}, Bj!Zrkelo et al. 2012; Callahan and Collins 1992; Miceli and Near 1984; Singer et al.1998; Stansbury and Victor 2009, Goal et al {2015}, Kaptein {2011}, Zhang et al {2009}, Cassematis and Wortley {2013}, Park at al {2005}, Park and Blenkinsopp {2009}, Near et al. {2004}, Bhal and Dadhich 2011; Dalton and Radtke 2013; Kaplan and Schultz 2007; Kaplan et al.2009; Liyanarachchi and Newdick 2009; Park et al.2008,2014.

2.3.2 External Whistleblowing

As mentioned in the previous literature whistleblowers are categorised into two groups. Internal whistleblowers and external whistleblowers. The above literature has provided a concrete review of studies that involved internal whistleblowing. It is now key for the researcher to address studies conducted on external whistleblowing. Ayers and Kaplan {2005} perform a study involving reporting of unethical practices or harmful practices through both anonymous and non-anonymous reporting channels. It was discovered that external whistleblowers are inclined to blow the whistle based on the perceived seriousness of wrongdoing and personal responsibility. This particular study adds value to the whistleblowing literature because the results indicate that the whistleblower was inclined to blow the whistle due to the perceived seriousness of wrongdoing in non-anonymous channels. This comes in line with various researchers who have claimed that external whistleblowers do not fear retaliation, this evidently proves that they will not be bothered to blow the whistle both anonymously and non-anonymously. On the other hand, internal whistleblowers might face fears of retaliation and will hope to blow the whistle anonymously.

It can be noted that this is in line with research conducted by Park et al. {2005} Who reported that whistleblowers will be more inclined to blow the whistle depending on the seriousness of the wrongdoing. Reporting of wrongdoing requires a robust mechanism in which the whistleblower both internal and external can report wrongdoing efficiently and effectively. This means organisations and relevant agencies should ensure that their reporting channels are good enough or enable the whistleblowers to report wrongdoing efficiently and effectively.

The research at present with regards to consumers blowing the whistle is different from the ones above because; consumers are external stakeholders, and they will be blowing the whistle through external channels. Consumers are key stakeholders in a business and will be able to blow the whistle. Nowadays organisations are outsourcing many of their functions such as accounting and IT. For this reason, individuals who are not formally employed in the business will have access to confidential information which may include wrongdoing.

It can be noted that consumers have often noticed wrongdoing by firms such as promotional deals {Bailey 2005}. According to De Bock {2011}, consumers find wrongful actions by companies less acceptable than unethical actions by consumers. It is important to note that consumers have been used in research with regard to corporate misconduct to understand consumer purchasing intention, trust, loyalty, and word of mouth {Bailey 2005}. This research will be different because it will be used in unethical food practices to understand how consumers can play a role in preventing food fraud.

2.3.3 Legal Frameworks Protecting Whistle blowers in the United Kingdom

The legal framework governing whistleblowing the United Kingdom has developed extensively over the past three decades. For the food fraud sector specifically, whistleblowing legal protections intersect with food safety regulations, consumer protection laws creating a complex regulatory environment that's shapes reporting behaviour by employees, business, and consumers. This section will examine the legal frameworks relevant to food fraud whistleblowing the UK including Public Interest Disclosure Act 1998 {PIDA}, consumer protection laws relevant to consumers reporting, food safety and fraud specific regulations, the institutional framework for receiving and investigating whistleblowing reports.

Understanding these legal frameworks is key for contextualizing whistleblowing behaviour and identifying legal barriers and facilitators to reporting.

- **Public Interest Disclosure Act- 1998**

The public interest disclosure act 1998 {PIDA} represents the foundation of whistleblowing law in the United Kingdom, offering legal protection for workers who make qualifying disclosures about unethical practices in the workplace. According to Lewis {2008} the PIDA was endorsed in response to several major disasters and scandals such as the Clapham rail crash, the Piper Alpha oil platform explosion, and the collapse of BCCI bank. Where investigations revealed that employees had been aware of the unethical practice running in their various places of work but failed to report them due to fear of retaliation { Lewis, 2008}

PIDA works by amending the Employment Rights Act 1996 by suggesting it is unfair to dismiss an employee of subject them to detriment for making a protected disclosure. The Act defines qualifying disclosures as the disclosures of information in which the worker believes that one or more of the following have occurred: criminal offences, breach of legal obligations, miscarriages of justice, danger to health and safety, environmental damage, deliberate concealment of any of the above {PIDA, 1998}

With regards to food industry whistleblowing, PIDA protections are relevant in the following categories: criminal offenses, breach of legal obligations and danger to health and safety. This broad coverage means that most unethical food practices and safety violations would be suitable for PIDA protection if reported by employees.

Although PIDA's broad protection, several limitations and gaps affect the food industry.

Firstly, PIDA protects only workers and not consumers who report unethical food practices. Consumers that engage in reporting unethical food practices are not protected under PIDA as they have no employment relationship with the food business. It is worth mention that consumers normally do not face the retaliation risks that PIDA addresses so this limitation may be less significant in practice.

Another limitation is PIDA protection does not prevent retaliation from taking place it mainly provides remedies after the retaliation as occurred. Because of this some employees may not wish to report unethical practices because of fear of dismissal even though they will receive compensation {Lewis,2008}.

Additionally, PIDA protection depends on the worker having reasonable belief that the unethical practice has occurred. This becomes difficult because sometimes workers have suspicions and have limited evidence to back this up. Lewis et al., 2014 suggests that this might not make workers be inclined to reporting unethical practices as they will have concerns that it meets reasonable belief standards.

Lastly, enforcement of PIDA protections involves workers to bring employment tribunal claims, which can be time consuming and stressful. Research conducted by Lewis et al., {2014} found that many whistle blowers who experienced retaliation did not pursue tribunal claims due to personal and financial costs involved.

- **Food safety and specific regulatory frameworks**

The food safety act 1990 delivers the primary legislative framework for food safety in England, Wales, and Scotland. The act suggest it is a crime to sell food, that is injurious to health, unfit for human consumption or not of quality demanded by consumers. Additionally, the act also creates a due diligence defence allowing businesses to avoid liability if they can prove that all reasonable precautions have been taken to avoid prevention { Food Safety Act, 1990}.

The foods standard act 1999 comprises of relevant provisions of whistleblowing. Section 19 of the food standards act requires the FSA to have regard to the desirability of facilitating the provision of information to consumers about food standards and safety. Even though this provision does not create a specific whistleblowing protection, it creates a legislative basis for FSA activities to encourage and facilitate reporting including consumer reporting methods { Food Standard Act,1999}. Lastly, the fraud act 2006 delivers criminal law framework for prosecuting food fraud. The act defines fraud broadly to contain false representation, failure to disclose information and abuse of position. Food fraud typically constitutes fraud by false representation. In addition, the acts broad definition means that most food fraud activities are criminal offenses, passing as wrongdoing under PIDA and providing a legal basis for whistle blower reports { Fraud act,2006}.

- **Consumer protection legal framework**

As mentioned earlier consumers are not protected by PIDA, several legal frameworks are key to consumer reporting of food fraud and affect the legal environment in which consumers reporting works.

The consumer right act 2015 combines protection law, establishing that goods must be satisfactory and fit for purpose as described. It is worth noting that food products that are fraudulent violate these requirements therefore giving consumers legal grounds for complaints and refunds. While this framework focuses on individual consumer compensation rather than regulatory enforcement, the complaints can trigger investigations that uncover fraud.

2.4 Empirical literature on food fraud.

This section of chapter two comprises of a detailed analysis summarising key literature with regards to food fraud. This section of the literature review provides the reader with an insight on what studies have been carried out in food fraud literature. Comprising of key studies highlighting factors of unethical food practices, and possible solutions.

A brief reminder of one of the research gaps the researcher is addressing is the use of whistleblowing in preventing unethical, or illegal or harmful production of food in the United Kingdom.

There is an endless list of food fraud scandals to analyse globally. For example, at least 300,000 children became sick and six died after drinking a Chinese manufactured melamine- tainted infant formula milk {Guan et al.,2009; Jia and Jukes,2013}. In Italy, wine adulteration in 1986 caused the death of 23 people after consumption {European communities, 2009}. Furthermore, in Spain 20,000 people became sick while 1663 died after vehicle oil was mixed with olive oil {Borda et al.,1998}. From the above food fraud cases we can tell that food fraud has been an ongoing event. According to World Health Organisation {2019} it is estimated that 420,000 people die each year after consuming adulterated food and an additional 600 million people become sick.

According to Spink and Moyer {2011} food fraud is defined as the deliberate, intentional tampering, substitution and mislabelling of products for economic gain. This definition is in line with a study conducted by Tibola et al., {2018} who discovered that mislabelling is the most common type of food fraud, alongside adulteration. This study emphasizes that the main cause of the food industry being targeted is due to economically motivated fraud. This simply means that companies will engage in unethical practices to economically gain but this in turn compromises food safety and potentially consumer trust. As can be seen from the food scandals above, this food fraud leads to death and health-related issues {Elliot,2014}.

For example, the European horsemeat scandal in which horsemeat was substituted for beef in a range of products raised food safety concerns { Van Ruth et al.,2016}. An increase in globalisation and lengthening of the supply chains puts great emphasis on creation and implementation food fraud prevention and mitigation systems. The entire supply chain is affected once food fraud takes places. Barnett et al., {2016} further suggests that food fraud causes unfair competition in the market, this is because some firms will take part in food fraud for economic gain. At the same time this will bring

a decline in consumer trust, {Barnett et al., 2016; Breitenbach et al., 2018} consumers will choose not to trust products that have been adulterated. As a result, this leads to undermining consumer confidence in the supply chain. In the event that consumers purchase goods that are not what they are advertised or labelled it will create issues of trust in the food industry. And this will result into loss of sales and revenue. Notable research concerning consumers worries about food fraud in Sub Sahara African countries was undertaken by Soon- Sinclair {2023}. This research took place between October 2022 and January 2023 and discovered that consumers were concerned with trust in reliable sources and trust in food vendors. This indicates that consumers are losing trust in the food industry. For example, the horse meat scandal that took place in 2013 established low consumer confidence in the meat industry. Consumers were afraid to purchase meat products because of fear of buying products that are not edible. In the recent years adulteration of meat and meat products has developed into a worldwide threat to food safety. Adulteration of meat mainly involves substitution with cheaper versions, false declaration of production or origin source, and undeclared ingredients { Robson et al., 2021}. It is worth reminding that unethical food practices not only will cause lack of consumer trust they will also affect consumer health and sales in a business overall. As stated above food fraud will have an impact on sales in the business, it will also have an impact on various key stakeholders such as producers, retailers, and the food industry as a whole.

Without a doubt we can note that food fraud is an escalating problem that needs to be handled. Various researchers such as Joenpera et al., {2022} perform research with the aim of discovering if food crime is reported in Finland. It was discovered that people tend not to report wrongdoing, and this might be due to reasons such as not having adequate training or knowledge pertaining of food crime. This might mean that people are not aware of the appropriate reporting channels once they notice unethical food production.

Preventing food fraud requires interdisciplinary research by linking criminology with other fields such as food safety, consumer behaviour and supply chain management as suggested by Spink and Moyer {2011}. Extensive research has been conducted with regard to food fraud and consumers {Yang et al., 2021; Nguyen et al.,2021; Nguyen et al., 2022; de Paola and Scoppa, 2013; Manning and Smith, 2015; Di Fonzo and Russo,2015}. Nevertheless, there seems to be no evidence of whistleblowing addressing food fraud in the literature.

2.4.1 Empirical Evidence of Food Fraud in the United Kingdom

This section investigates the empirical evidence of food fraud in the United Kingdom. This will establish the foundation for understanding why consumer whistleblowing mechanisms are key components of unethical food practice detection and prevention strategies.

In 2013 a significant food fraud scandal took place in the United Kingdom; this was the horsemeat scandal. It was discovered that beef products being sold in the United Kingdom contained significant quantities of undeclared horsemeat. According to Elliot {2014} this was the most significant food fraud incident in recent UK history with some products containing up to 100% of horsemeat despite being labelled beef.

The scandal affected major retailers such as Tesco, Aldi, Iceland, and Lidl and affected complex supply chains extending over multiple European countries {Lawrence, 2013}. A review was conducted and commissioned by the United Kingdom government in response to the horse meat scandal. According to Elliott {2014} it was discovered that this unethical food practice was due to the following reasons: inadequate supply chain transparency, insufficient testing, verification procedures, the absence of effective whistleblowing mechanisms that would have noticed the fraud earlier. It was discovered that the horse meat scandal was an indication of the vulnerabilities in the food system in the United Kingdom with particular focus to economically motivated adulteration. According to Felgate and Fearn {2015} the impact of the scandal led to the food industry losing approximately £300 million in direct costs, product recalls and testing. However, the biggest loss was the confidence of consumers. Consumer confidence was the biggest lost as consumers lost confidence in processed meat. According to the Food Standards Agency {2013} a survey indicated that 60% of consumers in the United Kingdom reduced their consumption of ready meals and processed meats after the horse meat scandal took place. Mannin and Smith {2015} further suggest that the complexity of modern food supply chains, make it impossible for regulatory agencies alone to screen potentially fraudulent activities, and emphasise the engagement of multiple stakeholders including consumers to detect unethical practices. After the horse meat scandal took place the United Kingdom government established the National food crime unit { NFCU} within the food standards agency in 2014.

According to Food Standard Agency food fraud remains continued issue in the United Kingdom, it was discovered that that 2,847 incidents were investigated by local authorities and NFCU between 2023-2024 { Food Standard Agency, 2025}. Highlighting a 15% increase compared to earlier years. However, this increase might not reflect and actual rise in fraudulent food activities but might be a

reflection on improved detection. The Food Standard Agency {2025} reports that meat and meat products continue to represent the highest risk accounting for 32% between 2023 – 2024. Specific fraud types in the meat sector include species substitution, geographic origin fraud and quality fraud. Additionally, seafood represents the second highest risk in the United Kingdom, accounting to 23% of fraud cases noticed in 2023-2024 {Food Standard Agency, 2025}. Unethical sea food practices mainly involve species substitution in which cheaper fish species sold as more expensive varieties. A study conducted by Miller and Mariani {2022} is in align with the findings obtained by the Food Standard Agency {2025}. According to Miller and Mariani {2022} DNA testing of fish products in the United Kingdom retail outlets discovered misdescription rates of 12%-18% depending on retail channel and product type. This highlights the ongoing challenges in seafood supply chain integrity despite regulatory efforts.

Unethical food practices are posing a high risk to consumers health, examples of this might include Allergen related fraud. According to the Food Standard Agency {2025} allergen related food indicated 40% increases in cases between 2021-2022 and 2023-2024. This type of unethical food practices mainly involves undeclared allergens in food products, which might be due deliberate omission from labelling or substitution of ingredients containing allergens. Example of notable case was a teenager who died in 2016 after consuming a Pre a Manger baguette containing undeclared sesame. This incident led to significant regulatory reforms requiring a full ingredient labelling on pre-packaged foods { Department for environment, food, and rural affairs, 2021}. After addressing the food fraud patterns in the United Kingdom with empirical evidence it is important to now address the economic impact and consumer trust implications. The economic impact of unethical food practices in the United Kingdom is significant as it not only affects direct financial costs but also broader market confidence and consumer behaviour. Research was conducted by the Food Standard Agency in collaboration with University of Manchester estimated that food fraud costs the United Kingdom food industry between £1.2 billion and £1.9 billion annually {Food Standard Agency, 2019}. On the other hand, these estimates may not significantly state the true economic impact. As Manning and Soon {2016} contend the above estimates and state that detected fraud represents 10-20% of actual fraudulent activity and suggest that the true economic cost may be several times higher than the official estimates. Manning and Soon {2016} further indicate that it might potentially exceed £5 billion annually when undetected fraud and long-term market impacts are considered.

Consumer trust represents a critical aspect in food fraud. The 2023 survey conducted by the Food Standard Agency discovered that only 68% of consumers in the United Kingdom expresses trust in

the food and supply chain compared to 79% in 2010 {Food Standard Agency 2023}. Notably trust levels vary significantly by demographic factors or types of food fraud. For example, a study conducted by Kendall et al., {2019} examining consumers responses to food fraud risks discovered that fraud incidents have different consumer behaviour outcomes. Their study indicates that health threatening fraud generated more behavioural changes than economic fraud. Therefore, that research suggests that consumer whistleblowing motivation may be differentiated with health-related concerns being a higher driving force to report unethical food practices. for example, will consumers be more inclined to reporting mislabelled products or wrongful substitution of food.

It is important to note that consumers play a vital role in the detection of food fraud. The empirical evidence from food fraud cases in the United Kingdom indicates that consumers have played a critical role in detecting fraudulent activities. According to Elliot {2014} the initial detection of the horse meat scandal was through DNA testing however it was discovered that consumers complained about the quality and taste of the product months prior but was not investigated.

Similarly in 2021 reports received from NFCU by consumer complaints regarding suspicious pricing and quality of manuka honey led to a major investigation that discovered fraudulent activities. According to Food Standard Agency {2022} it was discovered after a DNA testing revealed that over 50% of products labelled as manuka honey contained no detectable manuka pollen.

Furthermore, the Food Safety Agency acknowledges that consumer reports have identified key factors that establish the importance of consumers in the aim to prevent food fraud {FSA,2023}.

In conclusion, this section provides foundation for examining consumer whistleblowing behaviour through theoretical frameworks such as theory of planned behaviour. Understanding the attitudes, norms and perceived control factors that influence consumers in the United Kingdom to report suspected unethical food practices is key to developing effective fraud detection systems.

2.5 Empirical analysis on Whistleblowing models.

This section of chapter two comprises a detailed analysis of whistleblowing models and how they have been used in various studies to understand whistleblowing intention. This section of the literature review provides the reader with an insight into what studies have been carried out in whistleblowing literature. Comprising of key studies highlighting factors that influence an individual's decision to report wrongdoing, unethical practices, and illegal practices. Identifying the factors that influence an individual to report unethical practices has been in the spotlight by various researchers to create theoretical models. Key frameworks created include the theory of planned behaviour,

integrated ethical decision-making model, social information processing model and whistleblowing triangle. Understanding the theoretical foundations of whistleblowing is key for developing effective consumer reporting systems for unethical food practices. Although organisational whistleblowing and consumer whistleblowing share specific psychological and behavioural similarities, both involve individuals reporting wrongdoing by organisations. It is worth noting that organisational whistleblowers typically tend to have insider knowledge and operate within organisational power structures whereas consumers whistle blowers are external whistle blowers that have no affiliation that might have an impact on their reporting. This section of will now cover the major theoretical frameworks for understanding whistleblowing behvaieur.

2.5.1 Miceli- Near Model

the foundational theoretical work on whistleblowing was developed by Miceli and Near {1985,1992,2002} through vast empirical research on organisational whistleblowing behaviour. Their model comprises of four components that influence whistleblowing decisions. The four components are the whistle blower, the complaint, the organisation, and the wrongdoing itself. On the same token, the Miceli- Near model proposes that whistleblowing behaviour is influenced by individual factors, situational factors, and cost benefit calculations. While the Miceli- Near model was initially developed for organisational contexts, several elements are also key to consumer whistleblowing. The importance on wrongdoing applies equally to consumer decisions about reporting unethical food practices. Consumers that notice more serious unethical food practices are more inclined to reporting it like organisational whistle blowers.

However, the Miceli- Near model's organisational focus restricts its direct applicability to consumer whistleblowing. This is because the model focuses on role responsibility of the whistle blower, the organisational membership of the whistle blower which unfortunately does not directly match in the contexts of consumers. It is worth noting that consumers lack the insider knowledge, they are met with different types of costs such as time, effort, and uncertainty rather than employment retaliation. With these differences that are not specifically adapted to consumers the author will not use this model in this research.

2.5.2 Prosocial Behaviour Theory

Under this theoretical outlook it interprets whistleblowing as a form of prosocial behaviour, as the actions that are intended to benefit others. According to Dozier and Miceli {1985} they suggest that whistle blowers are motivated by concerns for organisational welfare and societal welfare rather than purely self-interested calculations. This connects whistleblowing to the greater literature on helping behaviour and civic participation. This is further supported by Penner et al., {2005} that suggests that prosocial behaviour theory suggests that several factors influence whether individuals engage in helping behaviours. According to Penner et al., {2005} 5 factors will determine whether individuals engage in helping behaviours, starting with awareness and perception of need, attribution of responsibility, self-efficacy, cost benefit assessment and social norms.

With regards to consumer whistleblowing the prosocial framework is relevant because unlike organisational insiders, consumers have no formal obligation to report wrongdoing. Consumers reporting unethical practices is fundamentally voluntary and mainly motivated by concerns for other consumers welfare. This is further justified by a study conducted by Dungan et al., {2019} on consumer reporting of corporate misconduct, the study discovered that prosocial motivations were stronger predictors of reporting intentions. Particularly concerns for other consumers who might be harmed.

On the other hand, prosocial behaviour theory alone will not provide us with a complete explanation of consumer whistleblowing. Even though altruistic motivations are key, consumers also consider personal costs, regulatory effectiveness, and social pressures when it comes deciding whether they report the unethical practices. Furthermore, the prosocial framework does not clearly address the cognitive processes through which consumers form intentions to report. Cognitive process to determine this are attitude formation, normative influences and perceived control factors that are all central to the theory of planned behaviour.

2.5.3 Theory of planned behaviour

The theory of planned behaviour was developed by Ajzen {1991} and has been used as the leading framework by key researchers in understanding whistleblowing intention. The theory of planned behaviour suggests behaviour is predicted by intentions which are determined by these three factors, attitude, subjective norms, and perceived behavioural control. A study conducted by Park and Blenkinsopp {2009} discovered that the theory effectively predicts organisational whistleblowing intention. The findings suggest that all three factors significantly predicted intentions to reporting

organisational wrongdoing, with attitude being the strongest predictor. This framework has been used in various contexts including accounting {Latan et al., 2019}, healthcare { Ahern and McDonald, 2002} and consumer reporting { Cho and Song 2015}.

The theory of planned behaviour model has been used in various research to understand whistleblowing intention. However, this model does not provide adequate information to understand whistleblowing intention. For example, the Theory of planned behaviour does not explain the exact factor that drives the motivation to report unethical or illegal practices. Which will be key in understanding whistleblowing intention. On the other hand, it provides some insights into why individuals report unethical practices by understanding their attitudes, subjective norms, and perceived behavioural control in reporting unethical practices. According to Erwandy et al., 2025 theory of planned behaviour influences an individual to report unethical or illegal practices. This highlights that attitude, perceived behavioural control and subjective norms can provide key details in understanding whistleblowing intention. On the other hand, Antoh et al., 2024 suggest that whistleblowing intention focuses on ethical climate and organisational support. These findings are obtained from the integrated ethical decision-making model, this model incorporates ethical awareness, ethical judgment {incorporates attitude from the theory of planned behaviour} and whistleblowing intention. Despite this model being used to understand whistleblowing intention it strongly focuses on ethical reasoning and the role of attitudes. Whereas whistleblowing models such as the whistleblowing triangle focus on the interaction between pressure, rationalisation, and opportunity in understanding whistleblowing intention. Which can provide a key understanding on why individuals decide to report unethical practices { Mustafida & Mursita, 2022}. With all this information it is worth noting that theory of planned behaviour is well suited to consumer whistleblowing for various reasons. First, it openly addresses the role of perceived control which is key for consumers who may feel uncertain about their ability to effectively report unethical food fraud. Secondly, it adapts both rational consideration and social normative factors. Third, the key focus of intention rather than actual behaviour is suitable for contexts where behavioural opportunities are limited and unpredictable.

Lastly, the theory of planned behaviour provides a framework for understanding how various factors identified in other whistleblowing theories mentioned above operate. With regards to Miceli and Near model- the wrongdoing severity is influenced by attitude. This means more serious unethical practices will yield negative attitude toward non reporting.

2.5.4 Application of theory of planned behaviour to food fraud

While theory of planned behaviour has been extensively applied to organisational whistleblowing, empirical research specifically examining consumer reporting unethical food practices remains limited. On the other hand, several studies have investigated related behaviours such as consumer reporting of food safety concerns, product defects, corporate misconduct all providing key insights relevant to food fraud reporting.

A study examining consumer intention to reporting food safety violations in south Korea was undertaken by Cho and Song {2015}. The theory of planned behaviour was used in this study and findings reveal that all three factors of theory of planned behaviour predicted reporting intentions with attitude being the strongest predictor. The model further explained 58% of variance in reporting intentions highlighting substantial predictive power.

In the same manner a study to understand consumer reporting of corporate social responsibility was undertaken. This study was done by Park et al.,{2020} and an extended theory of planned behaviour was used to understand intention to reporting corporate social responsibility. They discovered that moral norms and attitude were the highest predictors of intention to reporting corporate social responsibility. With subjective norms and perceived behavioural control also significant respectively. These findings highlight that emotional consideration plays a role in consumer reporting decisions. A study by Manning and Soon {2016} on food fraud awareness and consumer behaviour discovered that knowledge about food fraud types and detection methods was linked to greater willingness to report suspected food fraud. This finding indicates that knowledge increases perceived behavioural control, because consumers who understand food fraud are more likely to recognise and report it. Their findings further suggest that consumers who perceived food fraud as a serious public problem rather than a personal inconvenience were more likely to report. Indicating that prosocial motivations and moral norms influence reporting intentions.

In conclusion the literature on whistleblowing theory provides a robust foundation for understanding consumer reporting of food fraud. The theory of planned behaviour develops as the most comprehensive and empirically supported framework, through the integration of insights from organisational whistleblowing models, rational choice, and prosocial behaviour. The focus of attitudes perceived behavioural control and subjective norms in the theory of planned behaviour captures the key psychological processes that influence consumer reporting. Furthermore, empirical evidence while limited in the specific context of food fraud encourages the theory of planned

behaviour for predicting consumer reporting intentions and behaviour. Various research has discovered that attitude, norms, and perceived behavioural control predict reporting intentions. On the other hand, vital intention behaviour gaps have been noticed through proposing enhancing perceived behavioural control through education may be particularly important for increasing actual reporting behaviour.

Finally, this theoretical foundation advises the present research examining consumer intentions to report food fraud in the United Kingdom. Through the application of theory of planned behaviour framework. This will provide key theoretical insights into consumer whistleblowing and practical guidance for enhancing food fraud detection through consumer intelligence.

2.5.5 Whistleblowing triangle and Diamond

According to Saud and Febriana {2022}, pressure in the whistleblowing triangle is a factor that motivates individuals to report wrongdoing. The same researcher further suggests that the rationalisation factor justifies whether an individual reports unethical practices or not {Saud and Febriana 2022}. The last factor in the whistleblowing triangle is opportunity and this describes the ease in which individuals face when reporting unethical practices. It is worth noting that researchers such as Defiantoro {2023} extend the whistleblowing triangle into the whistleblowing diamond by adding the capability factor to the model. The addition of the capability factor in the model creates a more comprehensive model for understanding whistleblowing intention.

A brief reminder of the aim of this study is to understand consumer whistleblowing intention in unethical, illegal, or harmful production of food in the United Kingdom. With the information provided above the author has provided a brief description of the various whistleblowing intention models used over the years to understand whistleblowing intention. After an extensive analysis, the author has decided to extend the whistleblowing diamond and integrate the theory of planned behaviour to create a whistleblowing model. The whistleblowing model being created comprises the four factors from the whistleblowing diamond: pressure, opportunity, capability, rationalisation and incorporating two new factors seriousness of wrongdoing and laws and policies. As mentioned above this model will also integrate the theory of planned behaviour to understand consumer whistleblowing intention. Despite the whistleblowing literature comprising key models, the researcher decided to develop the whistleblowing diamond and integrate the theory of planned behaviour by answering research calls by researchers such as Latan, Ringle and Jabbour {2016} The

next section contains a summary of why the whistleblowing triangle and whistleblowing diamond are essential in understanding consumer whistleblowing intention.

Researchers such as Latan, Ringle and Jabbour {2016} suggest that the intention to blow the whistle by both internal and external individuals is determined by individual-level backgrounds such as personal responsibility, attitude towards whistleblowing etc and is further moderated by team norms, and perceived organisational support. This article does not explicitly describe the whistleblowing triangle but the attributes being discussed can be considered in the triangle. On the same token, it has been discovered that these models do not show how team norms and perceived organisational support would encourage an individual to blow the whistle. This entails that some aspects of the triangle might have a positive impact and a negative impact on the intention to blow the whistle. This may also raise questions such as will some factors of the triangle provide negative or positive responses due to cultural differences in this context.

As stated above the fraud triangle is used to better understand the purpose of the blown whistle, this is determined through the fraud triangle aspects. These aspects include financial incentives or pressure, rationalization, and opportunity. Firstly, according to Guthrine and Taylor {2017}, financial incentives are vital among accountants in reporting misconduct. This component in the triangle may lead to fraud if the company wants to meet certain financial targets or make up for poor performance. It is worth noting that fraud can be avoided if the company engages in good decision-making. Secondly, the opportunity component is key in decision-making through the organisational support and code of ethics provided by the organisation which will help avoid fraud (Smaili and Arroyo,2017). Lastly, rationalisation indicates that one's actions are performed in relation to the ethical code of standards as suggested by Cooper {2007}. At this stage, it is worth noting that these factors of the whistleblowing triangle will assist and be beneficial to an organisation to avoid fraud.

It can be noted that the whistleblowing triangle has an impact on decision-making in a business. In most cases, the affected stages in decision-making are identifying the decision, weighing the evidence, and finally taking the necessary action. Due to ongoing wrongdoings in organisations in the past years such as unethical practices, corruption, and fraud. Whistleblowers have been seen to help or tackle ethical issues being faced by companies. Professional accountants in this scenario play a vital role in ensuring that fraud does not happen, and they can blow the whistle for any concerns. According to Zhang, Chiu, and Wei {2019}, accountants have access to the financial records of a business for this reason they are required to act ethically with this information.

The whistleblowing triangle has an impact on various people involved in the decision-making of a business. Management needs to identify any problems that may arise, weigh the evidence being provided to them and then make a decision. This needs to be done to avoid them making quick and rational decisions when a problem comes to them.

Latan et al. {2019} test a hypothesis from a level of significance of 95% and the coefficient parameter of each independent variable. With a significance level of value $p=0.005$ from the statistical research conducted it was discovered that pressure hurts whistleblowing intention. While rationalisation and opportunity have a positive impact on whistleblowing intention. According to Latan et al., {2019}, pressure is a vital key in the fraud triangle that can determine the decision made from blowing the whistle. Pressure in this context is linked to negative and positive feelings which may have an impact on an individual in the future when they fail to report misconduct in the firm. The negative preceptive of pressure is when an individual fails to report wrongdoings without protection. In this situation, the negative impact outweighs the positive impact, and this will affect decision-making.

With all this information the researcher intends to conduct research in relation to the development of the whistleblowing triangle. As mentioned above from previous research some components in the whistleblowing triangle have a positive impact on the intention to blow the whistle. While others have a negative impact on the intention to blow the whistle. This might have to do with cultural contexts and legislatures etc. For example, the study conducted by Latan et al., {2019} is based on the Indonesian context and it provided us with a positive relationship between rationalisation and intention to blow the whistle and, a positive relationship between financial incentives and whistle blowing. This research creates a gap in the literature that this type of research has not been conducted in a different cultural context. For this reason, conducting research in the United Kingdom will yield different results and contribute extensively to the literature. Future research indicates that a replication of the above study will strengthen the findings of this research. Additionally, this will be the first research conducted in the United Kingdom.

It will be very important to analyse the impact of the factors from the whistle blowing triangle and some new factors in the United Kingdom. The author decided to use a developed whistleblowing triangle by answering calls from researchers such as Smaili {2019}. Smaili {2019} suggests that future research should use the whistleblowing triangle in different industries and countries to validate the

whistleblowing triangle and its applicability. The author extends this recommendation by developing the whistleblowing diamond and using it in the food industry in the United Kingdom. It can be noted that the combination of the factors from the whistleblowing diamond { opportunity, pressure, capability, and rationalisation}, the seriousness of wrongdoing, laws and policies and the theory of planned behaviour { attitude, social norm, and perceived behavioural control} provide a wide framework that takes on board motivational and situational factors.

2.5.6 Whistleblowing triangle Factors and integration of other factors

The following section will give an in-depth analysis of the whistleblowing factors which have been developed from the whistleblowing triangle. Including an addition of two new variables: seriousness of wrongdoing and laws and policies.

† Pressure

A firm's chances of committing fraud or engaging in unethical practices are mainly linked to the amount of pressure they have received to deliver goods and services. In certain situations, a firm might want to engage in activities that are deemed unethical because they want to satisfy the consumer's needs and wants. However, this strong desire to satisfy consumers often leads to fraudulent behaviour by the firm. Notably, one might ask how factors such as pressure or financial incentives would act as an intention to blow the whistle. According to Andon et al {2018}, financial incentives being offered motivate individuals to blow the whistle. With this motivating factor, the intention to report organisational wrongdoing is taken very seriously as suggested by Andon et al {2018}. To this accord, a whistleblower will be encouraged to report the wrongdoing because they know they will gain a financial reward from performing the act of whistleblowing. Based on the above information being provided it is noted that whistleblowing aims to obtain a resolution to the wrongdoing being noticed. However, with financial incentives being at play most whistleblowers will want to report false information to just obtain the intended reward. Which will not fulfil the aim of whistleblowing as a result.

In most cases, the whistleblower will report the wrongdoing anonymously through an online channel and will receive a reward for it. Despite financial incentives motivating individuals to engage in whistleblowing activities, they also delay the disclosure of the wrongdoing until they lead to significant losses {Berger et al, 2017}. As a result, this act by the whistleblower entails that they are

more concerned with disclosing wrongdoing economically than ethically. This act can therefore be called prosocial behaviour by the whistleblower, as it is more beneficial to them than others as they are more concerned with benefiting financially. {Berger et al, 2017}. According to Wats and Buckley {2015}, some whistle blower's main concern with regard to whistleblowing will be financial incentives whereas some will be motivated by moral concerns. It can be noted that moral concerns are categorized as pressure incentives in the whistleblowing hexagon. The Pressure incentive in whistleblowing is considered a positive incentive which motivates individuals to reveal wrongdoing {Latan et al., 2020}. Similarly, Smaili and Arroyo {2017} suggest that pressure incentives can be used to understand the intention to blow the whistle. It can be noted that pressure is categorised into two parts internal and external pressure. Internal pressure involves an individual's ethical, religious, and personal values which may persuade them to expose wrongdoing. This pressure mainly comes from their sense of social responsibility and their duty to reveal wrongdoing to obtain justice {Leys and Vanderkrchove 2014}.

An example of internal pressure leading to whistleblowing can be derived from the WorldCom scandal whistleblower Cynthia Cooper as she stated that her reasons for blowing the whistle in relation to the organisational wrongdoings of WorldCom were derived from the ethical upbringing she experienced. Therefore, she was compelled to blow the whistle based on her internally derived pressure and values. On the other hand, external pressure refers to retaliation and threats in relation to whistleblowing. For this reason, external pressure reduces the chances of the individual blowing the whistle because of the negative effects that will come with it. The whistleblower will be less motivated to blow the whistle for fear of the negative effects that will come along with their professional life and career.

According to Andon et al {2018}, a whistleblower will face external pressure in circumstances in which they are revealing serious wrongdoing. It is worth noting that in some circumstances if an individual experiences high pressure they will choose not to engage in any whistleblowing activities and opt to remain silent. After careful consideration and thought this research will only include a sample from internal pressure as the external pressure may be less relevant or have little impact. This is because this research will be dealing with consumers as a sample, and they will not face any form of retaliation or threats to their careers as they are external individuals to the firm. As external whistleblowers, consumers will have access to information about the wrongful production of goods,

mislabelling, substitution of products, and origin of products. This puts them in a perfect position to identify the wrongdoing or unethical practices and report them to relevant authorities. Smaili and Arroyo {2019} suggest that pressure has a positive effect on the intention to blow the whistle. On the same token internal pressure encourages whistleblowers to act {Latan et al 2019}.

✚ **Opportunity**

Under this factor of the whistleblowing model, the individual is faced with the opportunity to report the misconduct if they have the right support from organisational and standard policies {Brown et al., 2016}. For instance, an individual will only want to report the wrongdoing if adequate reporting channels are put in place. They would want to blow the whistle knowing that they have an impactful channel to blow the whistle. Wolfe and Hermanson {2004} further suggest that a whistleblower has opportunities to blow the whistle once they have sufficient skills and knowledge. These skills may include technology skills assisting them in investigating potential fraudulent products. Which in return will assist them blow the whistle. In this study, consumers have the opportunity to blow the whistle because they have the acquired skills and knowledge.

Due to the advancement in technology, everyone can search for information about products on the Internet. Lastly, research conducted by Latan et al {2019} indicates that opportunity has a positive impact on the intention to blow the whistle. Therefore, individuals who have greater opportunities listed above will have greater intentions to blow the whistle. Under this factor in the whistleblowing model, the whistleblower has the available resources to support them in reporting wrongdoing.

✚ **Rationalisation**

According to Latan et al {2018}, rationalization is the reasoning assumed by whistleblowers in relation to their course of action when faced with wrongdoing. This reasoning leads to the decision to blow the whistle based on their moral standards. On the same token key researchers in the field of whistleblowing Near and Miceli {2011} define rationalization as the process by which individuals consider whether the action of whistleblowing should be used to assist victims of unethical practices. Based on this we can note that moral or ethical standards play a role in rationalisation. For this reason, rationalisation is an easy task for individuals who have a high ethical standard compared to

those individuals who have a low ethical standard. Individuals who have a high ethical standard can quickly determine the seriousness of the wrongdoing before blowing the whistle.

On the other hand, individuals who have a lower ethical standard will encounter challenges in determining if the wrongdoing identified is serious. Recker-Salick and Lowe {2010} propose that if an individual has a low ethical standard, they will choose not to blow the whistle to avoid risks but instead remain silent. It is important to note that a rationalisation process is essential before an individual decides to blow the whistle. In most cases, this process is in line with the individual's views on wrongdoing and their moral standards. If the individual believes that the wrongdoing is serious, their moral standards will not allow them to ignore this. In this regard, they will decide to make a report of this wrongdoing and hope a resolution is achieved. From the information provided above we concluded that rationalisation is key to add to the whistleblowing model to understand the intention to blow the whistle. Based on various research conducted in the whistleblowing literature, rationalisation is said to have a positive effect on whistleblowing intention {Brown et al. 2016, Latan et al 2018

✚ **Capability**

Researchers such as Wolfe and Hermanson {2004} propose that capability is an important part of the fraud diamond model. This is because it contains technical and psychological factors that assist an individual in speaking out. For instance, whistleblowers can have the ability to report wrongdoing online because they can use social media. This factor will assist the whistleblower by placing them in the right position to blow the whistle. For this reason, this research will also include capability as an element in the whistleblowing hexagon model in relation to preventing food fraud. This is achieved by equipping the whistleblower to be confident enough to uncover and report the wrongdoing.

Based on previous research whistle blower's capabilities do assist them in disclosing wrongdoing as suggested by Wolfe and Hermanson {2004}.

✚ **Seriousness of Wrongdoing**

Various scholars have proposed that the seriousness of wrongdoing is a vital motivation for an individual to blow the whistle. A wrongdoing that is observed as more serious is likely to be reported by a whistleblower to relevant authorities as suggested by Taylor and Curtis {2010}.

According to Latan et al {2019} who performed a study on tax employees, states that higher seriousness of wrongdoing increases whistleblowing intention. The same researcher further discovers that perceived threats will reduce whistleblowing intention. Some individuals will be more likely to report wrongdoing such as sexual harassment, and food and safety compared to theft. According to Latan et al. {2019}, employees are more likely to report wrongdoing that involves physical harm such as health violations than less harmful violations. Similarly, wrongdoings such as sexual harassment, legal violations, food, and safety measures are more likely to be reported than waste and safety problems {Near et al 2004}. As stated above seriousness of a wrongdoing plays a key role in the intention to blow the whistle. This research intends to use scenario-based analyses focusing on less common wrongdoings. This decision was made since obtaining a sufficient sample size of whistleblowers linked to a particular wrongdoing may be difficult to achieve.

Using consumers as a whistleblowing sample size will enable us to obtain various results from various wrongdoings. Different firms offer different products and services so customers will be able to analyse and report wrongdoing from various products and services being offered to them. Park and Lewis {2019} state that the development of wrongdoing impacts the ability to undertake whistleblowing. For this reason, it is key to understand the suitability of the seriousness of wrongdoing in relation to whistleblowing intention. The seriousness of wrongdoing will be measured using Vignettes. Vignettes contain a short description of a person or situation which will contain vital information to assist in the decision-making of respondents {Alexander and Becker, 1978}. The vignette will contain a single scale item with endpoints detailed as very serious and not serious. The aim of using a vignette to measure the seriousness of wrongdoing is to understand the beliefs, and attitudes that the respondent will have towards that situation with regards to blowing the whistle or not.

† Laws and Policies

Various countries have established whistleblowing protection acts such as the Whistleblower Protection Act 1989 {USA}, Sarbanes-Oxley Act 2002, and Public Interest Disclosure Act 1998 {UK}

which have been used countless times in whistleblowing literature. Despite this little is known about the awareness of whistleblowing protection legislation with regards to whistleblowing intention. Studies in other disciplines have indicated a noteworthy effect of awareness on attitude. For example, (Lee and Moscardo, 2005) tourism, Percy, and Rossiter's study on marketing (Percy and Rossiter, 1992).

Unlike the research stated above whistleblowing studies have not significantly examined the effect of understanding whistleblowing protection legislation on whistleblowing behaviour {Vadera et al. {2009}. Vadera et al., {2009} further suggest that studies should be conducted on the role of laws on whistleblowing. In this research, the relationship between awareness of laws and policies and whistleblowing intention is examined.

2.6 Empirical analysis of whistleblowing in the context of food fraud

As we pointed out in the previous chapter most whistleblowing studies have been centred around corporate and financial fraud. The researcher has presented little to no literature with regard to whistleblowing and food fraud.

Firstly, research in Finland was conducted and the aim was to find food crime prevention strategies. It was discovered that food crime is rarely reported in the country. The research also states that more training is needed with regard to the detection of food crime {joenpera et al., 2022}. Management system. Due to various whistleblowing barriers, these might make whistleblowers reluctant to blow the whistle.

2.7 Empirical analysis of whistleblowing in the context of consumer whistleblowing

From the information shared above we can note that while consumer whistleblowing shares theoretical foundations with organisational whistleblowing, numerous key characteristics affect the applicability and importance of different theoretical factors. It is important to understand these distinctions in order to develop effective theoretical models and practical interventions for consumer food fraud reporting.

Firstly, consumer whistle blowers are external observers rather than organisational insiders. This position puts consumers in a position in which they have limited information about supply chain, key

organisational practices. However, consumers being external whistle blowers puts them in a position of lower risks such as no employment retaliation.

Another key distinctive feature is consumer whistleblowing is typically reactive and opportunistic rather than systematic. Mostly organisational whistle blowers will observe wrongdoing repeatedly through their roles, allowing them to gather key evidence in order to report the unethical practice. For consumers that's different they will encounter the potential fraud and must make rapid judgments concerning whether the wrongdoing has taken place or not, also they encounter limited opportunities to gather systematic evidence.

Additionally, consumer whistleblowing benefits are primarily for the benefit of others rather than individual. While organisation whistle blowers may benefit from reporting wrongdoing through improved working condition, resolution of ethical conflicts etc consumers rarely receive directly personal benefit but their reporting benefits society at large.

Research pertaining to consumer whistleblowing has been conducted over the years. Which has contributed to the literature and provided avenues for future research. After discussing whistleblowing and various research that has been conducted particularly on financial scandals or corporate scandals that have been reported primarily by employees. The researcher has allocated this section to critically evaluate the research pertaining to consumer whistleblowing. Due to the rise of the competitor whistleblowing phenomenon and the lack of relevant knowledge on the topic.

Cheng et al., {2021} conducted a study to examine how consumers respond to whistleblowing by a competitor company from the perspective of consumer scepticism. This research uncovered that competitor whistleblowing may induce consumer scepticism towards the real whistleblowing intention. As a result, this scepticism facilitates the relationship between competitor whistleblowing and the consumer's attitudes towards the whistleblower company. Despite this study showing whistleblowing intention, it might not be regarded as useful or relevant because This form of whistleblowing is regarded as a competitive weapon in the market. And for this reason, it is easily doubted by consumers because they see this as a strategic plan to attack companies by their competitors. Which in return does not ethically prove the right way to interpret whistleblowing intention.

Turning now to a study conducted by Latal {2020} in which they developed the fraud triangle into a fraud diamond to understand the intention to disclose wrongdoing through virtual whistleblowing. The authors discovered that all 4 factors in their model can explain the intention behind customers reporting wrongdoing. Most studies in the field of whistleblowing have not used consumers as

whistleblowers. For this reason, the research conducted above by Latan {2020} is important in the whistleblowing literature as it uses consumers as a sample to understand whistleblowing intention.

2.8 Theoretical approach to whistleblowing study

As explained above whistleblowing is the action in which an individual exposes wrongdoing or unethical practices. This can be done internally or externally in a company. The whistleblower may choose to blow the whistle internally in the company or externally to the public, respected companies etc.

Many theories from vast disciplines such as organisational studies, sociology, and psychology reinforce whistleblowing literature. Which create whistleblowing outcomes and vital whistleblowing behaviour frameworks. It can be noted that the lack of whistleblowing theory has allowed various scholars to use various behavioural theories. Research conducted by Xu and Ziegenfuss {2008} used Kohlberg's ethical decision-making theory to understand the impact of moral reasoning on whistleblowing decision-making. Additionally, Park and Blenkinsopp {2009} use the theory of planned behaviour in investigating factors that influence whistleblowing intention. The use of the theory of planned behaviour has been used by various researchers in predicting behavioural intentions. Which may include unethical behavioural intentions. It is worth noting that whistleblowing is considered the action in which an individual thoughtfully reports wrongdoing and not in an impulsive manner. With that in mind, the theory of planned behaviour will be a suitable framework for understanding consumer whistleblowing intention. This is because the theory of planned behaviour contains factors such as attitude, social norms, and perceived behavioural control. It is worth noting that these factors elaborate an individual's positive or negative assessment of reporting wrongdoing (attitude); the social pressures to report wrongdoing or not to report wrongdoing {social norm} and the perceived ease to report wrongdoing or the difficulties in reporting wrongdoing.

This section of the study will provide an in-depth analysis of the theory of planned behaviour in understanding whistleblowing intention.

2.8.1 Theory of planned behaviour

The theory of planned behaviour was originally introduced by Ajzen in 1985. The purpose of this psychological framework is to explain an individual's behaviour, and how this behaviour is guided by intentions. The behaviour is primarily focused on attitudes, subjective norms, and perceived behavioural control. This theory is a successor of the theory of reasoned action, and they were

developed to understand the intention and behaviour of a person. The aim was to study an individual's intention and behaviour under a specific situation in which the person has complete control {theory of reasoned action} or lack of complete control {theory of planned behaviour} on their behaviour. It is worth noting that the theory of planned behaviour has been used in numerous disciplines such as marketing, organisational behaviour, and health to understand human actions. Additionally, the theory of planned behaviour can be used to predict human actions.

According to Ajzen (2006), the theory of planned behaviour suggests that a person's behaviour is predicted by the following predictors {attitude, social norm, and perceived behavioural control} which are practically independent of each other. The predictors are further explained below:

- Person's assessment of the behaviour- attitude
- Apparent social pressure to commit the behaviour- social norm
- Acceptance and control of the behaviour- perceived behavioural control

Previous research has demonstrated the use of the theory of planned behaviour in predicting ethical and unethical behaviour {Chan, 1998; Randall and Gibson, 1991; Rashidian and Russell, 2011, Carpenter and Reimers, 2005}. For instance, research is conducted on ethical decisions in the medical field, and the theory of planned behaviour is used to predict nurses' intention to report wrongdoing {Randall and Gibson, 1991}. As mentioned above theory of planned behaviour can be used in various disciplines. In the field of accounting Sarikhani and Ebrahimi {2021} Performed a study on factors affecting whistleblowing intention by Iranian accountants by incorporating the fraud pentagon and theory of planned behaviour. Sarikhani and Ebrahimi {2021} discovered that the theory of planned behaviour has a positive impact on Iranian accountants' internal whistleblowing intentions. On the same token, Chang {1998} conducts research indicating the use of the theory of planned behaviour in predicting the intention of unethical behaviour.

Despite various research using the theory of planned behaviour in behavioural research, this theory has raised concerns about the lack of explanatory power of testing different behavioural intentions in various contexts. This is supported by a meta-analysis conducted by Sutton {1998}, this analysis indicates that both the theory of planned behaviour and the theory of reasoned action explain an average between 40% and 50% in variance intention. On the same token, the analysis

indicates that both theories indicate a variance in behaviour of 19% and 38%. Mirkuzi et., {2011} further suggest that the theory of planned behaviour has an explanatory power of as low as 13% and 7%. In the same manner, Armitage and Conner {2001} conducted a meta-analysis that indicates that the theory of planned behaviour scores slightly lower than the meta-analysis conducted by Sutton {1998}. According to Armitage and Conner {2001}, the theory of planned behaviour reports a variance in intention and behaviour of 27% and 39% respectively. This means the low percentage is the ability of the three core variables of the theory of planned behaviour to explain behavioural intention.

For this reason, various researchers have suggested developing the theory of planned behaviour by including additional variables {Conner and Armitage, 1998; Lin, 2006; Wu and Teng, 2011}. While other researchers have suggested breaking down the main variables into multidimensional belief constructs {Taylor and Todd, 1995. Also, the researcher answers research calls to incorporate additional variables into the theory of planned behaviour to generally obtain an in-depth of behaviour {Conner and Armitage, 1998; Lin, 2006; Wu and Teng, 2011}. The incorporation of factors from the whistleblowing triangle, whistleblowing diamond and seriousness of wrongdoing and laws and policies into the theory of planned behaviour will provide an in-depth understanding of consumer behaviour. Referencing back to the aim of this study which is to understand consumers' whistleblowing intention with regards to food fraud.

After thorough research with regards to theories used in whistleblowing intention, the researcher has concluded to use the theory of planned behaviour to address their objectives.

Firstly, we take into account that we would like to understand the consumer's intention to report unethical food practices. In so doing we eliminate the social exchange theory because it neglects the influence of an individual's morality, an individual's morality will help us understand why they want to report the wrongdoing. Secondly, the moral intensity framework is eliminated from our research as stated above it focuses on moral intensity which highlights situational factors. In as much as this theory will work well for other research, our research will require individual psychological traits which are neglected in the moral intensity framework. However, the theory of planned behaviour accommodates psychological traits which will provide us with the behaviour to understand consumer intention. Whistleblowing entails that a person needs to be thoughtful, and not impulsive with their decision. In our opinion for this to happen behaviour needs to be understood and this cannot be done using prosocial behaviour theory but the theory of planned behaviour. Prosocial

behaviour theory overlooks key aspects such as self-interest and fear of retaliation. These key aspects help whistleblowers decide whether they want to engage in reporting wrongdoing or not.

Thirdly agency theory is eliminated from our study, mainly because it neglects the social and ethical motivation of whistleblowing. Which will defeat the purpose of understanding consumer intention behaviour.

In this research the theory of planned behaviour has not been limited to the three constraints; attitude, perceived behavioural control and social norm. However, it has been combined with factors from the whistleblowing triangle, whistleblowing diamond and seriousness of wrongdoing and laws and policies. Below are the key components of the theory of planned behaviour.

✚ **Attitude**

Refers to the person's assessment of the behaviour. Past studies on various disciplines have used this variable and found consistent results on the relationship between intention and attitude. These studies include decision-making by corporate managers {Carpenter and Reimers, 2005}, medical profession research conducted by Randall and Gibbson {1991}, and reporting of unethical behaviour by university students {Chang, 1998}. All the above studies have a positive relationship between attitude and intention.

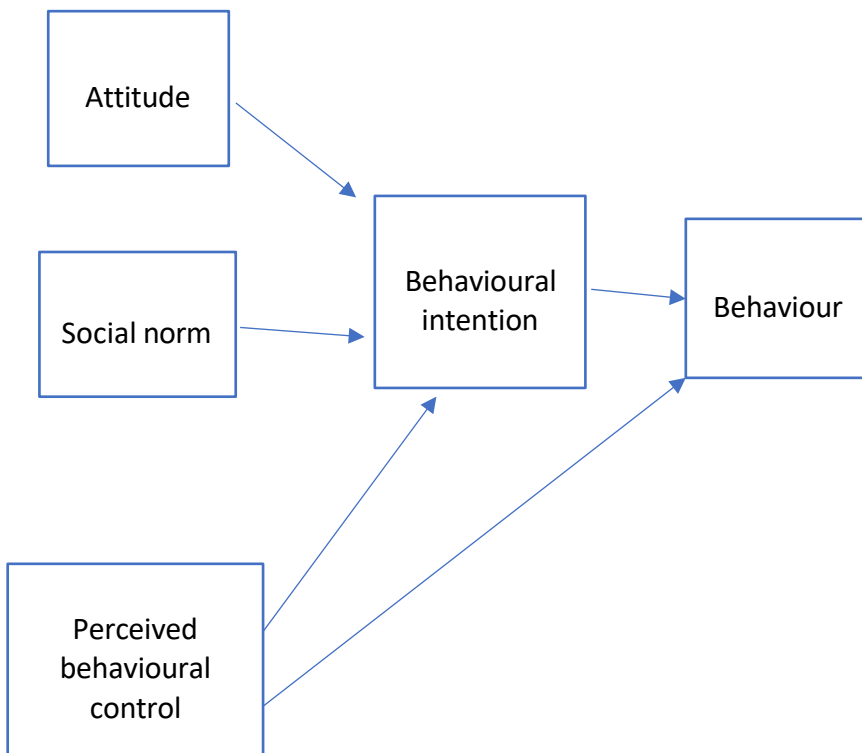
✚ **Social norm**

This is the apparent social pressure to commit the behaviour. This variable as mentioned above is broken down into injunctive and descriptive norms. The injunctive norm is known as the perception of approval from significant others to perform the behaviour. While descriptive norm reveals the perception of whether significant others perform the behaviour being studied. The following hypotheses are derived to understand if they play a role in consumers' intention to blow the whistle.

✚ **Perceived behavioural control**

This variable entails the difficultness or easiness to perform the behaviour under consideration. Blowing the whistle is not an easy task for an individual to make. Whistleblowing by an individual is subject to how much control the whistleblower has in that situation.

Figure 1 Theory of planned behaviour



2.9 Outcome variables affecting consumer whistleblowing intention

The section below will give an in-depth overview of the outcome variables to be used in this research.

Boycott: this variable has been used in this research as an outcome variable. It is a form of protest that is undertaken by consumers in which they deliberately avoid purchasing products or services. Hong and Li {2021} define a boycott as a voluntary act in which consumers abstain from purchasing or using a specific product. This deliberate act is mainly due to political, ethical, and environmental concerns. According to Smith and Joh {2004}, consumers take part in boycotts for moral obligations and a wish for social justice. It can be noted that consumers who take part in boycotts experience

sensitive feelings of moral satisfaction and are keen to support brands that support their ethical standards {Farah and Newton, 2010}. According to Smith and Joh {2004}, the success of a boycott is determined by the company's response. For example, when a company takes up

defensive strategies boycotts will intensify and prolong. However, if the company engages in open communication by potentially admitting their wrong, they will likely regain their consumer's trust. For this reason, the following hypothesis is created

Brand trust: this variable is vital in relation to food fraud. It plays a significant influential role in consumer behaviour with regard to food purchases. Especially in which safety, and food quality are vital concerns for consumers. It can be noted that food directly impacts consumers' health and wellbeing. For this reason, consumers will play a key role in selecting brands they trust in order not to compromise their health. Consumers will rely on brands to provide safe and authentic food products. Consumers are initially purchasing goods with the idea that these goods are safe and authentic. In some cases, Verbeke and Ward {2006} suggest that some consumers are willing to pay more for premium products because they have trusted the brand. They have trusted the brand that they believe that they are being provided with authentic goods. In most cases, once a consumer has trusted a brand, they are more likely to be loyal to that brand and constantly purchase that brand. This is further supported by a study conducted by Delgado et al {2001}. A consumer is more likely to constantly purchase a brand they trust even if the competitor brand is available at a low price. Once a consumer has gained trust in a brand, they are more willing to recommend this brand to family and friends. On the other hand, unethical food practices have established a decline in consumer confidence as suggested by Henson {2015}. As a result, this will bring about a loss of market share and revenue. The relationship between brands and consumers is key in a business to avoid loss of market share and revenue. However unethical food practices can lead to the damage of this relationship, as consumers will lose trust in the brand. In most cases once trust is broken consumers become uncertain not only of the brand practising unethical food practices but of similar products in the market.

For example, the horse meat scandal that took place in 2013 made consumers cautious in purchasing meat products. They not only avoided the brand in question but all processed meat products. It is evident that brand trust is fundamental in unethical food practices from the perspective of consumers. A trusted brand will offer consumers safety and assurance about the quality of goods.

Referencing back to the aim of this study is to understand consumers' whistleblowing intentions with regards to food fraud.

Negative word of mouth This is a common behaviour portrayed by consumers, it involves consumers sharing or spreading information pertaining to certain goods and services. Word of mouth plays a very vital role in shaping consumer purchases. It can be noted that consumers will trust approval from friends and family pertaining to a particular brand. This information can be negative or positive depending on the circumstances. According to Dolan et al., {2019}, negatively engaged consumers will deliberately inform family and friends about their negative experiences with the product or firm. This is mainly to warn them or gain revenge on the services or products they have obtained.

It is worth noting that this negative feedback obtained will have an impact on the intended audience. This is because consumers are more likely to take in information from other consumers than brand-initiated communication. A study conducted by Hammond {2008} further supports this and suggests that negative word of mouth has an effective impact on brand switching than positive word of mouth has on maintaining customers.

2.10 Control variables affecting consumer whistleblowing intention

✚ Age: this variable has been used in this research to understand consumer whistleblowing intention in the United Kingdom. Previous research has suggested the use of this variable alongside other variables to have a clear understanding of whistleblowing intention. According to Yanti et al., 2018 age alone does not directly influence whistleblowing intentions but if it works together with factors such as moral competence, it will yield great results. The results of their study highlighted that older women showed to have a higher moral competence, which could help in reporting unethical practices when combined with other factors such as gender { Yanti et al.,2018}. In the same manner Bernawati & Napitupulu {2018} suggest that using age together with other variables like gender ethnicity will add value to understanding whistleblowing intention. Toolami et al., {2019} supports the above researchers and suggests that age and gender work well together to understand whistleblowing behaviour. While age indicates that it is a significant demographic variable it is important to note that it will need to work alongside other

variables. The researcher has included age in this research to work alongside other variables such as gender, ethnicity as suggested by { Toolami et al., 2019; Yanti et al., 2018; Bernawati & Napitupulu 2018}. It is worth noting that using an interaction of these variables will yield great results and contribute to whistleblowing literature extensively. This research has used the following categorise of age in understanding consumer whistleblowing intention; 18-24, 25-35, 35-44, 45-54, and 65 and above.

✚ Gender

Gender as a control variable in understanding whistleblowing behaviour has yielded mixed reviews. With some researchers suggesting that it is a significant factor that influences reporting unethical behaviour { Zairi et al., 2023; Brown et al., 2016; Adli & Dewi, 2017}. On the other hand, some studies have indicated that gender does not influence reporting unethical practices { Martadinata et al., 2023; Helena & Prabowo 2019; Afriyenti, 2018}. With these studies indicating that Gender may be overshadowed by other variables or its influence maybe context dependent. Research conducted by Chang et al., 2017 used gender as a control variable but their study highlighted the importance of organisational and colleague support in influencing whistleblowing intention. This highlights that while gender plays a role in understanding whistleblowing behaviour it is often linked with other factors that shape reporting unethical behaviour. In conclusion the role of gender in understanding consumer whistleblowing intention alongside other factors such as age and ethnicity will add value to the study. Bearing in mind that this study focuses on consumer whistleblowing intention while other studies have used gender in organisational studies. However, this study adds to the literature because we have incorporated various demographic factors and situational variables to understand consumer whistleblowing intention. it is worth noting that in the survey gender has been categorised as follows: Male, female and other.

✚ Education background

Educational background is a demographic variable that has been used in several research to understand whistleblowing intention. The reasoning is that education can influence moral reasoning, ethical awareness, and the ability to reporting unethical practices. For instance, high education level can contribute to greater understanding of ethics and ethical practices of companies. However, Putriana et al., 2018 disagrees with this statement and suggests that in certain contexts such as civil servants' education levels will not affect whistleblowing intention. The role of education in understanding whistleblowing intention can be complex as it may require interacting it with other

factors to gain a better understanding. On the other hand, this research has used education background, alongside other demographic factors, situational factors, different context {consumers} and unethical food practices. Education background is grouped into the following Postgraduate, Graduate, BTEC HNC/HND, A-Level/BTEC Level 1/2/4, GCSE and below.

With this information in mind this study will yield robust results that will contribute greatly to the literature. With the potential of creating new avenues of future research.

✚ Ethnicity

The use of this control variable in this research is key to understand how cultural and demographic factors have an impact on reporting unethical practices. It is worth noting that ethnicity has the impact of affecting whistleblowing intention through cultural orientations and racial biases. Ethnicity has been seen to associate with culture orientation, which plays a key role in understanding whistleblowing intention. According to Cheng et al., 2015 individuals that belong to collectivist cultures, mainly associated with certain ethnic groups maybe feel less inclined to reporting unethical practices. This may be because they believe in group harmony and loyalty and them reporting unethical practices may suggest they are not loyal. On the other hand, Jacobson {2019} suggest that racial stereotypes can have an impact on whistleblowing intention. Their study indicates that individuals may be inclined to reporting unethical practices by colleagues of certain ethnic backgrounds. From the study conducted by Cheng et al., 2015 and Jacobson {2019} we can note that ethnicity does have a significant role in whistleblowing intention, but overall does not provide a clear indication of its significance. The researcher therefore adopts ethnicity in their research to understand if ethnicity and whistleblowing in different cultures is more viable. According to Solikah et al., 2020 a study conducted in Indonesia suggests that individuals were more inclined to reporting unethical practices due to cultural identity. Adopting the following categorise for our research, ethnicity is categorised as follows; White; Black African/Caribbean/ Black British; Asian/Asian British; and other ethnic group.

✚ Employment status

Employment status has been used in various research and has indicated a significant impact on whistleblowing intention. These studies have indicated how different roles and employment statuses in an individual affect their intention to reporting wrongdoing. Our research will try an understand how different employment status affect consumer whistleblowing intention. The status employment

categorises in this research are Full Time, Part Time, Self-employed and Retired prefer not to say. it is worth noting that employment status will shape an individual's ethical responsibility and perception of risk. Research conducted Gundlach et al., {2003} suggests that full time employees are more likely to reporting unethical practices because they have a stronger job security compared to part time individuals. With this in mind we can note that part time individuals will fear reporting unethical practices due to fear of their job stability. On the other hand, Gundlach et al., {2003 further suggests that unemployed individuals will be inclined to reporting unethical practices in consumer related fraud. With this information we can note that conducting research with regards to using employment status as a control variable will yield vast information pertaining consumer whistleblowing intention. Our study yields findings with regards to how employment status can have an impact on perceived behavioural control {theory of planned behaviour}. This may highlight that individual in more secure positions maybe inclined to reporting unethical food practices than those not in employment.

✚ Annual income

A key factor that can affect whistleblowing is financial stability, individuals that have a higher income have a greater financial stability to individuals with a low income. This is because higher income provides stability, reduces risks associated with retaliation in the event that one loss they job. For this reason, individuals with a high income have nothing to lose when they report unethical practices. on the other hand, individuals with a low income have little to no financial stability and the risk of reporting unethical practices can make this worse. They may be in a situation in which they lose their job and that will result in them losing their income. On the same token Vargas {2001} suggests that individuals that have a low income cannot justify the risks that reporting unethical practices have on their job status and financial stability. Vast literature indicates that annual income has an impact on reporting unethical practices. With most indicating that individuals of high income are more likely to report unethical practices which may be due to financial stability, advanced education, and advanced knowledge in ethical practices { Lange & Owen 2018}. Miceli and Near {1992} further supports this by indicating that individuals with a low income, will lack financial stability, may not have advanced education and knowledge in ethical practices. Therefore, indicating that individuals with a low income will not be inclined to reporting unethical practices. Our study will use annual income to understand consumer whistleblowing intention, this result will be essential to firms that want to conduct affairs in an ethical manner and support whistleblowers. The study uses

the following to best describe annual income; 0 - £9,999; £10,000 - £49,999; £50,000-£99,999; £100,000- £149,999 and £150,000 and above.

✦ Average food shop

Referencing back to the aim of this study to understand consumer whistleblowing intention, it is key to understand if average food shop spend plays a role in whistleblowing intention. According to Gao and Zhang {2021} economic status has an impact on consumer attitudes in reporting unethical practices. It is worth noting that consumers that have a higher spending budget are more likely to report unethical food practices compared to individuals with a lower spending budget. Chen and Yi {2020} further suggest that consumers that allocate a higher budget to their food shop are mainly looking for quality goods such as organic, premium foods. For this reason, they will be more inclined to ensuring food integrity as they are concerned with the food they are consuming. The above study conducted by Chen and Yi {2020} is supported by Yates and Evans {2022} who indicate that consumers that buy premium goods expect high standards of their goods and will not expect anything less. With all this information we can note that average food shop spend is a critical role in understanding whistleblowing intention, for this reason it's been used in this study to understand consumer whistleblowing intention in the United Kingdom. This will provide the literature with key managerial contribution in which firms can create robust reporting channels to accommodate both high income spenders and low-income spenders. Average food shop spends for the month in order to understand consumer whistleblowing intention is categorised into the following: Once; Twice, Three times; and more than three times.

✦ Shopping history

Vast whistleblowing research have been conducted using various demographic, however direct studies connecting shopping history and whistleblowing intention is limited. A study conducted by Latan et al. {2020} conducted in Indonesia with regards to online whistleblowing suggests that shopping experiences played a role in consumers reporting unethical practices. Despite this study not addressing food shop history, their results indicate that consumers with wide shopping experience may be more inclined to reporting unethical practices. It is worth noting that monthly shopping history acts as a key demographic factor in understanding consumer whistleblowing

intention. This study has incorporated shopping history, annual income, average food shop spends which can affect a consumer's intention to reporting unethical practices. Our results can ultimately contribute vastly to the literature by providing food safety and industry standards from a consumer's perspective. With regards to shopping history the researcher has categorised this into the following; Less than £50; less than £100; less than £150; less than £200 and more than £200.

2.11 Gaps in literature, conceptual framework, and development of hypotheses

- **Pressure**

Arroyo {2019} suggests that pressure has a positive effect on the intention to blow the whistle. On the same token internal pressure encourages whistleblowers to act {Latan et al 2019}. For this reason, the hypothesis confirmed is

H1: Pressure has a positive effect on consumer whistleblowing intention in preventing food fraud

- **Opportunity**

Therefore, individuals who have greater opportunities listed above will have greater intentions to blow the whistle. Under this factor in the whistleblowing model, the whistleblower has the available resources to support them in reporting wrongdoing.

H2: Opportunity has a positive effect on consumer whistleblowing intention in preventing food fraud

- **Rationalisation**

Based on various research conducted in the whistleblowing literature, rationalisation is said to have a positive effect on whistleblowing intention {Brown et al. 2016, Latan et al 2018}. For this reason, the following hypotheses are derived.

H3: Rationalisation has a positive impact on consumer whistleblowing intention in preventing food fraud

- **Capability**

Based on previous research whistle blower's capabilities do assist them in disclosing wrongdoing as suggested by Wolfe and Hermanson {2004}.

H4: Capability has a positive effect on consumer whistleblowing intention in preventing food fraud.

- **Seriousness of wrongdoing**

The aim of using a vignette to measure the seriousness of wrongdoing is to understand the beliefs, and attitudes that the respondent will have towards that situation with regards to blowing the whistle or not.

H5: seriousness of wrongdoing has a positive effect on consumer whistleblowing intention in preventing food fraud

- **Laws and policies**

In this research, the relationship between awareness of laws and policies and whistleblowing intention is examined

H6: Consumer whistleblowing intention in the United Kingdom is positively influenced by awareness of laws and policies

- **Attitude**

H7: Attitude has a positive impact on consumer whistleblowing intention

- **Social norm**

H8: social norm has a positive impact on consumer whistleblowing intention

- **Perceived behavioural control**

H9 Perceived behavioural control has a positive impact on consumer whistleblowing intention

- **Boycott**

If the company engages in open communication by potentially admitting it is wrong, it will likely regain its consumer's trust. For this reason, the following hypothesis is created ***H10 boycott has a positive impact on consumer whistleblowing intention***

- **Brand trust**

A trusted brand will offer consumers safety and assurance about the quality of goods. Which will in turn reduce their worries about unethical food practices. For this reason, the following hypotheses are created

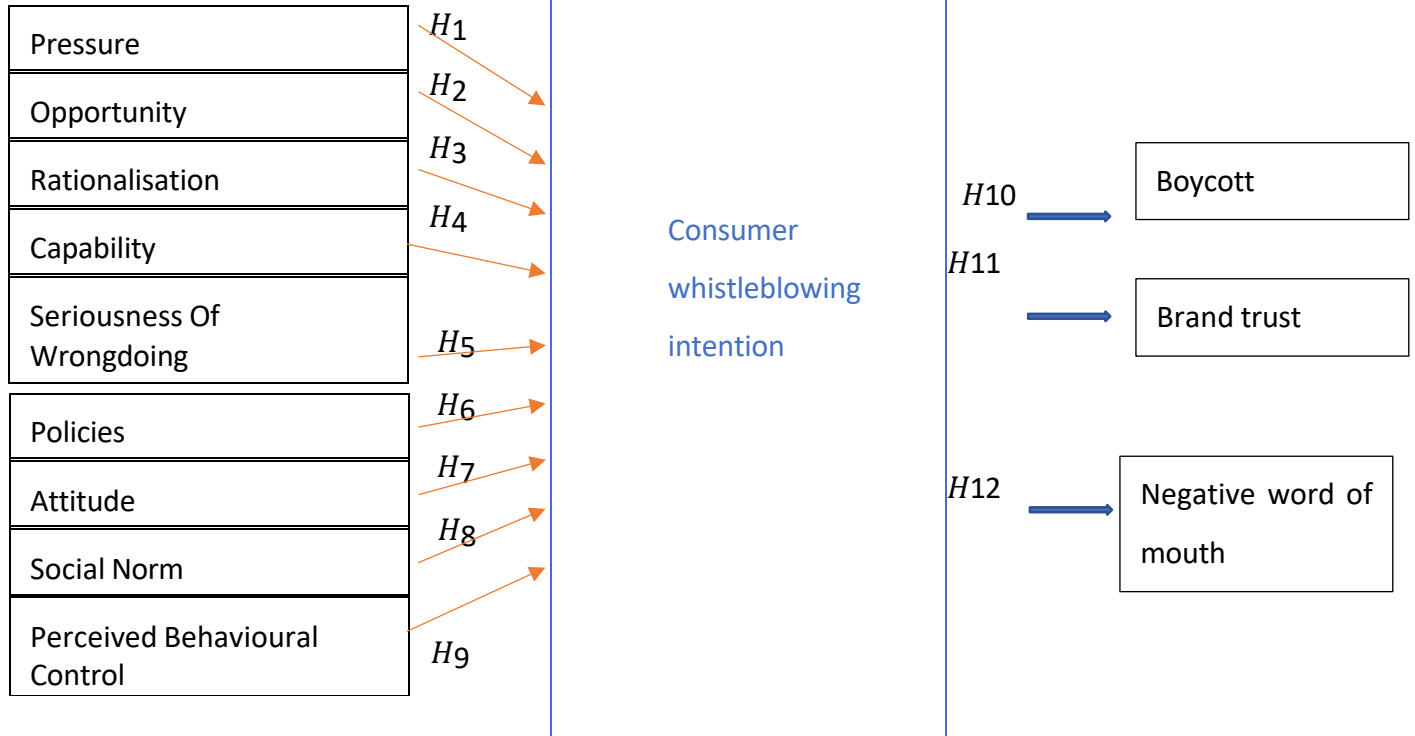
H11 Brand trust has a positive impact on consumer whistleblowing intention

- **Negative word of mouth**

A study conducted by Hammond {2008} further supports this and suggests that negative word of mouth has an effective impact on brand switching than positive word of mouth has on maintaining customers.

H12 Negative word of mouth has a positive impact on consumer whistleblowing intention

Conceptual framework



Control variables:

- Gender
- Age
- Education background
- Ethnicity
- Employment status
- Annual income
- Average food shop spends
- Shopping history

The Theory of Planned Behaviour {TPB} and the Whistleblowing Triangle have been integrated to create a robust model that addresses consumer whistleblowing intentions in the context of food fraud. TPB emphasizes the role of attitudes, subjective norms, and perceived behavioural control in shaping intentions. The Whistleblowing Triangle, on the other hand, comprises constructs such as pressure, opportunity, rationalization, and capability, which capture the motivational and contextual factors influencing whistleblowing.

The integration of these frameworks provides a comprehensive model that considers both individual predispositions and situational influences. TPB constructs explain the psychological mechanisms behind whistleblowing, while the Whistleblowing Triangle contextualizes the situational pressures and rationalizations that may drive or hinder action. This combination enriches the theoretical grounding by incorporating both motivational and contextual aspects, offering a holistic understanding of whistleblowing intentions.

2.12 Summary

In conclusion, after a thorough analysis of relevant information, the following three specific gaps have not been addressed in the literature. Several research has been conducted on whistleblowing and researchers have established several models to address fraud. After reading various articles in the whistleblowing literature, it was noticed that a few things are missing that would need to be addressed. A firm decision was made to address these gaps by researching whistleblowing in this context:

- Comprehensive research on whistleblowing, consumers, and food fraud. It was discovered that a lot of articles on whistleblowing {Curtis et al., 2021; Boo, Ng and Shankar, 2021; Latan, Chiappetta Jabbour and Lopes de Sousa Jabbour, 2021; Read and Rama, 2003; Chiu, 2003} were conducted but limited research on whistleblowing linking to consumer behaviour {Yin, Bi and Chen, 2021; Latan, Chiappetta Jabbour and Lopes de Sousa Jabbour, 2021; Soon and Manning, 2017}.
- Upon discovering that various research has been conducted on whistleblowing thorough research was conducted on what models have been created to address wrongdoings or unethical practices. It was discovered a few elements were missing from a particular model that has been used regarding whistleblowing intention. The model is known as the whistleblowing triangle {Smaili and Arroyo, 2019}. The researcher has therefore adopted this model and further developed it by adding two factors and creating their model.

- A further investigation was conducted, and it was discovered that various articles have been conducted on food fraud and consumers {Van Rijswijk and Frewer, 2012, Muller and Gaus, 2015; Tse et al., 2016 Agnoli et al., 2016; Charlebois et al., 2017; Koubova, Samkova and Hasonova, 2018} and limited research has been conducted on whistleblowing and food fraud {Joenpera, Koskela and Lunden, 2022}.
- In conclusion the above three gaps create the following objective: to investigate the whistleblowing factors {opportunity, pressure, capability, rationalisation, seriousness of wrongdoing and laws and policies) that influence a consumer's intention to blow the whistle upon discovering unethical production of food.
- To investigate the whistleblowing variables of opportunity, pressure, capability, rationalisation, seriousness of wrongdoing, laws, and policies in relation to understanding the influence these variables have on a consumer's intention to blow the whistle upon discovering unethical production of food.
- To identify the effect of theory of planned behaviour on consumer whistleblowing intention.

3. Methodology

3.1 Research Aim and Objective

This research aims to understand consumer whistleblowing intention regarding food fraud, a study conducted in the United Kingdom. This is attained by firstly examining studies conducted by various researchers regarding whistleblowing studies, food fraud and consumer behaviour, their consequences and factors that would contribute to the literature. Our study develops a new whistleblowing model, indicating that consumers play a key role in whistleblowing and have the potential to prevent unethical food practices. Firstly, whistleblowing factors {opportunity, pressure, rationalisation, seriousness of wrongdoing, laws, and policies} influence a consumer's whistleblowing intention upon discovering unethical food practices. Secondly, consumer whistleblowing behaviour is examined with the theory of planned behaviour in this study. It is further suggested that once consumers engage in reporting unethical food practices the following outcomes may be viable: brand trust, boycott, and word of mouth. It can be noted that these outcomes have the impact of preventing food fraud.

3.2 Research Philosophy and approaches

Research philosophy stipulates the groundwork a researcher uses to understand the research. This will include the nature of the research, key research process and outcomes of the research. It can be noted that these philosophies will help the researcher design the intended methodology to address the aims and objectives of the research.

3.2.1 Ontology

This philosophical foundation describes the nature of reality. According to Cohen {2002}, ontology originated from Greek philosophy, which states that methods are rigid units that reinforce reality. Over the years the definition and understanding of ontology has changed drastically. For example, in the middle age ontology was associated with Christianity. Kenny {2005} suggests that thinkers such as Thomas Aquinas interpreted ontology as the relationship between God and being. Other researchers further suggest that ontology is mainly focused on human cognition and subjectivity

{Allison, 2004}. However present-day research proposes that ontology has developed beyond the above understanding and has enabled various uses in interdisciplinary applications {Smith, 2003}.

It can be noted that to date various research in interdisciplinary domains has been conducted using ontology. For example, Berners-Lee et al., {2001} suggest the use of ontology in computer science research, in which this philosophical foundation successfully structures and retrieves information efficiently and effectively. From this, we can note that the philosophical foundation in computer science research underpins a set of concepts and their key relationships. Regarding the use of ontology as a philosophical foundation in social science, it can be noted that it supports discussions pertaining to the nature of social reality. This is further broken down into two parts objectivism and constructivism.

As mentioned above ontology can be used in interdisciplinary studies which may include computer science, social sciences, information systems and ethics. Its ability to be used in interdisciplinary studies emphasizes its importance in tackling complex questions in diverse studies.

3.2.2 Epistemology

Unlike ontology, which is focused on existence, epistemology is focused on the theory of knowledge. It primarily focuses on what way knowledge is made, authenticated, and understood. According to Cohen {2018}, epistemology is defined as the nature and source of knowledge and the methods employed by the researcher regarding justification. In the same manner, Crotty {1998} suggests that epistemology assists researchers in understanding existence {ontology} which later assists them in choosing the right methodologies to address their research questions. It can be noted at this point that this theoretical foundation can be broken into the following: positivism, interpretivism, constructivism and pragmatism. According to Bryman {2015}, positivism suggests that reality is neutral for the observer in the research. And mainly depends on quantitative methods, statistical analysis, and experiments. On the other hand, interpretivism mainly relies on qualitative methods such as interviews. Interpretivism places emphasis on personal knowledge and its importance to individuals' experiences. With this information provided above it is vital to note that pragmatism is the combination of both interpretivism and positivism. According to Tashakkori and Teddlie {2010} this philosophical foundation centres on practical outcomes and problem solving rather than theoretical values.

From the information provided on research philosophies, we can note that the researcher will be using both epistemology and ontology to understand consumer whistleblowing intention. As

suggested by Creswell and Poth 2018 epistemology is concerned with the nature of knowledge and how researchers can obtain vital information about a particular phenomenon. On the other hand, ontology is concerned with reality and existence. It focuses on how researchers view the nature of reality. Do they view it as objective and independent or do they view it as subjective and socially constructed? In this case, the researcher is viewing this research as an objective ontology. What this means is that the researcher assumes that certain whistleblowing factors such as pressure, opportunity, seriousness of wrongdoing etc objectively determine consumers' intention to report wrongdoing. An example of this type of research includes a quantitative study in which the researcher uses surveys to measure certain factors and how they objectively influence whistleblowing intentions.

As stated earlier the building blocks of epistemology are objective and subjective epistemology. According to Comte {1830}, objective epistemology is the results obtained from measurable, objective, and observable facts. While subjective epistemology is the results obtained through human interactions and experiences. As we can tell both subjective and objective epistemology are good philosophies used in research. Our research will mainly use objective epistemology. Our study will comprise of collecting data through surveys from consumers in the United Kingdom to understand their intention to report unethical food practices. This approach will rely on statistical analysis using statistical tools such as SPSS to identify key patterns and correlations. Additionally, this method presumes that consumer behaviour can be predicted based on external factors such as pressure, opportunity, laws, and policies. All of this justifies the need to use this philosophical foundation compared to the other ones to understand the consumer whistleblowing intention.

3.3 Research strategy

A researcher needs to know what approach they will take to collect relevant data, analyse the data and interpret the data. At this stage research strategy will help the researcher decide their desired approach. The three main research strategies are qualitative method, quantitative method, and mixed method. It can be noted that each strategy has its unique weaknesses, strengths and features which are relevant to different research objectives.

According to Creswell and Poth {2018}, qualitative research entails words, descriptions and narratives and mainly focuses on interviews and observation respectively. This strategy provides key understandings of difficult or complex issues in research. For example, Bryaman {2015} conducts

research to understand subjective experiences and perceptions. On the other hand, quantitative strategy tests hypotheses and theories and not complex issues in qualitative strategy. The quantitative strategy emphasises statistical methods and numerical data {Muijs, 2010}. Researchers who tend to choose a quantitative strategy for their research will use surveys and experiments to obtain data. It can also be noted that using a quantitative strategy seeks to find generalizable findings through large sample sizes. Finally, the mixed method strategy combines both qualitative and quantitative methods into one. According to Tashakkori and Teddlie {2010}, a mixed-method strategy mixes numeric and narrative data to stipulate an inclusive understanding of the research. This means it focuses on understanding complex issues or questions that require varied data types.

The information provided above describes key features of the research strategies respectively. It is important to also include the strengths and limitations of each strategy in the research process. One key limitation of qualitative research is researcher bias. As mentioned above qualitative method will focus on subjective understanding based on personal experience, this creates a subjective interpretation of the research. Despite this limitation, the qualitative method provides strength in research by capturing complex and difficult phenomena in research. This is very key in research because it will provide an extensive understanding of human experiences. On the other hand, quantitative methods do not provide an extensive analysis of complex research questions. Instead, quantitative methods will most likely simplify the complex research questions in turn simplify phenomena. It can be noted at this point those quantitative methods provide strength in analysing large-scale data and providing generalizable results for the research respectively. Since an analysis of data in quantitative methods uses standardised measurement tools it reduces bias.

The combination of both qualitative research and quantitative research requires a vast amount of time and resources. The combination of potentially conducting interviews as well as handing out surveys will require that the researcher has allocated a vast amount of time. Using mixed methods can also act as a disadvantage to a researcher because they will need to have knowledge or expertise in both methods to carry out relevant research. For this intended research the research strategy being used is quantitative. Jean Lee {1992} describes quantitative research as an objective approach that depends heavily on statistics and figures.

A brief reminder of this research is to understand consumer whistleblowing intention in food fraud in the United Kingdom. The objective measurement of whistleblowing intention is quantitative methods, this is because this method uses the collection of data in structured tools such as surveys and experiments. This form of collection of data will reduce researcher bias and subjectivity which is important in this research. It is important to note that using qualitative research relies on interpretation which can create research bias and inconsistency {Silverman, 2020}. The method of collecting data in qualitative methods relies on interpretation whereas quantitative methods can use Likert scales which provide consistent and objective data. The researcher further justifies that quantitative methods are the best method to use in this research because of the need to collect a large sample to improve representativeness. According to Fowler {2014}, quantitative studies enable the collection of data from large populations, enabling the findings to be more representative of the general public. In this case, the researcher intends to collect data from consumers who are a large population to understand their intention to report wrongdoing. This will provide key information concerning factors that will enable consumers to report wrongdoing as it will represent the general public. On the other hand, it is quite difficult to gain a representation of the whole population using qualitative methods because they involve small samples. Saunders et al 2019 further justify this and suggests that using qualitative methods in research involves a small sample, making the generalisability of findings not go beyond the specific participants.

It is worth noting that using quantitative methods in this research is more reliable because we will use statistical tools to interpret the data collected. This enables the researcher to make an overall understanding of consumer whistleblowing intention. Compared to relying on data that is heavily limited to the study's participants due to the lack of statistical tools. This means that qualitative research will not provide clear quantifiable evidence on understanding consumer whistleblowing intention. Due to the nature of this research, the researcher wants to understand consumer whistleblowing intention. The aim will be for this research is to help various stakeholders prevent food fraud by providing the necessary elements. For this reason, using quantitative methods will act as a way to predict logical ways to address various unethical practices. For example, using surveys can help future researchers create models that can predict that consumers over 35 years old with higher ethical awareness are most likely to report unethical practices. However, the lack of predictive power from qualitative research due to obtaining information through interviews, is based on narratives rather than numerical patterns. According to Saunders et al. 2019 qualitative research

heavily relies on narratives and not numerical patterns making it difficult to predict solutions for certain problems or challenges.

It is worth noting that using quantitative methods to collect data is efficient and cost-effective compared to qualitative methods.

Lastly, the need to obtain statistical validation and generalizable insights to understand consumer whistleblowing intention in food fraud can only be attained using quantitative methods.

3.3.1 Justification for Quantitative Survey Approach

The choice of the appropriate methodology is a key decision that essentially shapes the reliability, validity, and generalizability of research findings. In the context of understanding consumer whistleblowing intention with regards to food fraud in the United Kingdom requires a thorough consideration of multiple factors which include research objectives, theoretical framework, analytical capabilities, and sample size requirements. This section provides a comprehensive justification for employing quantitative survey methodology compared to qualitative methods such as interviews in consumer whistleblowing research on food fraud. It can be noted that the justification is grounded in established methodological literature, empirical evidence, and theoretical consideration particular to consumer behaviour research, whistleblowing research and food fraud studies.

- **Theoretical and conceptual framework**

The theory of planned behaviour is primarily designed for quantitative measurement and testing. According to Ajzen {1991} theory of planned behaviour suggests that behavioural intentions are mainly predicted by three key concepts, perceived behavioural control, attitude towards behaviour and subjective norms. It can be noted that these concepts are inherently quantitative in nature and require standardised measurement to guarantee valid and reliable assessment. Francis et al. {2004} further justifies this and conducts research that demonstrates that theory of planned behaviour constructs are best measured with standardized questionnaires. Francis et al., {2004} further suggests that the use of standardised questionnaires with Likert scale items permits for statistical analysis and model testing. The quantitative measurement of theory of planned behaviour constructs allows researchers to investigate the relative contribution of each predictor variable, moderating effect, and mediation. Armitage and Conner {2001} suggest that the theory of planned behaviour constructs allows for researchers to establish casual relationships through structural equation

modelling. Referencing back to this research that contains whistleblowing intention research, it can be noted that whistleblowing research has usually employed quantitative methodologies to examine factors that have an impact on reporting intentions and behaviours. A seminal work conducted by Near and Miceli {1985} on organisational whistleblowing verified the foundation for quantitative assessment of whistleblowing predictors. Subsequent research on a meta-analysis of 26 studies reveals the effectiveness of quantitative approaches in identifying consistent predictors of whistleblowing intention across different contexts { Mesmer-Magnus and Viswesvaran 2005}. Additionally, the incorporation of the whistleblowing triangle and using quantitative methods aligns with findings from Kaptein {2011}. According to Kaptein {2011} the incorporation of factors from the whistleblowing triangle requires systematic measurement across large samples to determine generalizable patterns and relationships. It is worth noting that qualitative methods while key for exploratory research, lack the statistical power essential to test complex theoretical models and create population level inferences.

- **Generalizability and statistical influence**

Quantitative methods such as survey enables researchers to accomplish adequate statistical power through large samples which are key in detecting meaningful effects and testing complex theoretical models. According to Cohen {1988} medium effect size in multiple regression analysis requires minimum sample size of 77 participants for adequate power with three predictors. On the other hand, structural equation modelling commonly used in theory of planned behaviour research requires substantially larger samples. Hair et al., {2019} suggests a minimum sample size of 200-400 participants for structural equation modelling depending on model complexity. This research has obtained 514 participants and exceeds these requirements. Therefore, providing adequate power for detecting small to medium effects. Qualitative methods typically employing sample of 10-30 participants is not able to achieve comparable statistical power or allow sophisticated multivariate analyses. Additionally, the use of quantitative methods in particular surveys for this research is to obtain external validity and population level interpretation. The use of surveys enables population level interpretation through probability sampling and statistical generalization. The aim of this research was to understand consumer whistleblowing intention in the United Kingdom with regards to food fraud, therefore we will gain our findings through population level interpretation. This is further justified by Bryman {2016} who suggests that quantitative methods are key when research objectives include making interpretations about larger populations based on sample data. On the

same token in consumer research the ability to generalize findings to the broader UK consumer population is vital for developing effective food fraud prevention strategies and policy recommendations. According to Malhotra and Birks {2017} large scale consumer surveys provide external validity that cannot be achieved through qualitative methods. On the same token standardized data collection procedures and representative sampling approaches in quantitative methods guarantee that findings are applicable beyond the immediate research context. It is worth referencing to the aim of this research which is to understand consumer whistleblowing intention with that in hand using quantitative methods can be used in systematic comparisons across demographic groups, certain periods, and geographical regions. Our results can therefore be used in cross cultural or cross-sectional comparisons because quantitative methods have been used to obtain key data. Steenkamp and Baumgartner {1998} suggest the importance of measurement invariance in cross cultural consumer research, which can only be formed through quantitative measurement models. This is particularly important in food fraud research, where consumer responses may vary across different demographic segments and cultural contexts.

- **Objectivity and reduced bias**

The use of qualitative methods such as interviews were eliminated in this research because interviews are susceptible to interviewer effects. This means the researchers presence, questioning style and personal characteristics may influence participants responses { Fontana & Frey, 2005}. On the other hand, self-administered surveys remove these effects by providing standardised stimuli and response formats that are consistent across all participants. On the same token, anonymous online surveys reduce social desirability bias and encourage more honest responses particularly to sensitive topics such as reporting unethical issues where participants may fear retaliation or social consequences. Unlike surveys, Tourangeau et al., {2000} suggest that sensitive topics such as reporting unethical problems are more prone to social desirability bias when face to face interviews are conducted. From this information it is key to understand that using surveys was the best solution to understand consumer whistleblowing intention in the context of unethical food practices. In the previous section we discussed how quantitative methods such as surveys would create external validation, it is important to note that quantitative surveys provide standardised measurement instruments that minimize researcher bias. According to Nunnally and Bernstein {1994} psychometric properties such as reliability and validity can only be established through quantitative methods. For example, Cronbach's alpha indicates reliability and other psychometric indicators describe

measurement quality that are not able to be achieved in qualitative research. Another key feature of using survey for this research is to obtain reliability and validity which will be essential in detecting relationships between predictor variables and outcome in complex models. It is worth noting that conducting research using quantitative methods contains scales that provide precise measurement that enable detection of differences in attitudes, intentions, and perceptions. According to DeVellis {2017} Likert scales have options ranging between 5-7 points, this multiple response provides greater measurement sensitivity compared to binary or categorical responses often associated with qualitative measurements. This research comprised of a Likert scale { 7-point scale} which maximised reliability and validity while maintaining respondent comprehension. This research falls in alignment with research conducted by Preston and Colman {2000} in which both findings indicate relationships between predictor variables and outcomes in complex theoretical models.

- **Cost effectiveness**

Quantitative methods such as surveys used in this research are considered more cost effective than qualitative methods especially when large samples are required. For example Fowler {2014} indicates that telephone or online surveys cost approximately 10-20% of the cost per respondent compared to in depth interviews. As a result, this will assist researchers to collect data from larger, more representative samples within budget.

This research obtained data from 514 respondents in the United Kingdom through online surveys, which would be prohibitively expensive if the researcher conducted interviews. In the event that 60–90minute interviews with transcription and analysis cost, the qualitative approach would most likely require 10-15 times the resources of the quantitative survey approach. Apart from surveys being cost effective, they also enable speedy data collection. Dilman et al., {2014} suggests that online surveys can achieve response rates of 20-30% within 2-3 weeks compared to interviews which may go on for several months. The collection of data through online surveys can act as an advantage in the timely collection which may be necessary to capture consumer responses to up-to-date fraud incidents.

The scalability of quantitative methods enables researchers to amend sample sizes based on statistical power, budget constraints etc. On the other hand, qualitative methods constrained by time and resource limitation, typically cannot achieve geographic coverage or comparable sample size. Finally, it is easier to generate data through quantitative methods compared to qualitative methods. For example, quantitative surveys generate data suitable for statistical analysis, eliminating the time used in transcription and coding required in qualitative methods. Statistical packages used in

quantitative methods such as SPSS enable analysis of data that would be impossible with qualitative data.

According to Creswell and Creswell {2018} it is estimated that interview analysis requires 4-6 hours per interview hour for transcription, coding, and theme development. For 514 respondents obtained in this research using surveys would approximately take 2,000-3,000 hours of analysis if interviews were used.

- **Theory testing and model development**

Theory of planned behaviour requires high level statistical modelling to test relationships between latent constructs. According to Kline {2016} structural equation modelling provides the analytical framework necessary to test measurement models, examine direct and indirect effects and assess model fit. Furthermore, research conducted by Byrne {2016} suggests that Structural equation modelling requires quantitative data with adequate sample size of a minimum of 200 participants and multivariate normality. However, these cannot be met using qualitative methods and as a result this limits the ability to test complex theoretical models rigorously.

- **Addressing Potential limitations**

Some critics have suggested that quantitative method such as surveys sacrifice depth of understanding for breadth of coverage while qualitative methods provide rich detailed insights into individual experiences, this depth comes at a huge cost of generalizability and statistical power as suggested by Bryman {2016}. The current study objectives prioritize generalizability and theory testing over individual case exploration. The theoretical framework integration provides sufficient conceptual depth to guide quantitative measurements, while the large sample size enables detection of subtle effects and complex relationships. It can be noted that some critics suggest that interviews provide better understanding of contextual factors that influence behaviour. However, researchers such as Fowler {2014} counter argue this and suggest that quantitative surveys can incorporate contextual factors through careful questionnaire design and statistical modelling. This research has taken on board suggestions by Fowler {2014} and included demographic variables, shopping behaviours and food fraud experiences as contextual factors that can be analysed quantitatively. As a result, these variables provide contextual understanding while maintaining the analytical advantages of quantitative methodology.

Consumer behaviour research has mainly comprised of quantitative methodology dating as far back as research conducted by Ajzen {1975} on attitude behaviour relationships. It can be noted that the theory of planned behaviour was developed from this quantitative tradition and has been validated through hundreds of quantitative studies across various domains { Armitage & conner, 2001}. Additionally, Sheppard et al., {1988} conducts a meta-analysis of 87 studies using theory of reasoned action, establishing the effectiveness of quantitative approaches for understanding behavioural intentions. For this reason, this established tradition provides methodological precedent and theoretical justification for quantitative approaches to consumer research. In terms of whistleblowing research, quantitative methods have been used to examine organisational and individual factors in motivating reporting behaviour. Key researchers Near and Miceli {1985} established the quantitative paradigm that has been adopted by other key researchers such as Mesmer-Magnus and Viswesvaran {2005, Kaptein {2011}. The development of validated whistleblowing scales and theoretical models has created a cumulative knowledge base that enables systematic theory testing and practical application. Despite qualitative methods been valuable for exploratory research, it is not able to contribute directly to this established quantitative literature. Finally, food safety research has mainly adopted quantitative approaches to understand consumer behaviour and develop effective and efficient interventions. Research conducted by Redmond and Griffith {2003} establishes the effectiveness of quantitative surveys for assessing consumer food safety knowledge and practices.

It is key to note that the integration of consumer behaviour data into food prevention requires quantitative methodology that can interface existing databases and risk assessment. As a result, the integration is key for developing broad food fraud prevention strategies that incorporate consumer reporting as a detection mechanism.

3.4 Research Sample and Population

A researcher will perform research in an organised manner by gathering necessary information to answer particular questions and solve problems. Key concepts in research that are centred around the research process are the research sample and research population. It can be noted that it is important for a researcher to establish the scope of the research and the validity and reliability of the findings. These factors can only be determined by the research sample and population.

According to Creswell and Poth {2018}, a research population is defined as the whole group of individuals or objects that the researcher intends to study. An example of a research population can

be all consumers that purchased a specific named olive oil in the past year. The research population is considered the whole while the research sample is the subset of the whole. A research sample is considered the subset of the research population selected for the study {Bryman, 2015}. An example of a research sample is from a population of 15,000 accredited accountants a sample of 600 accredited accountants are selected to take part in a survey. For the selection to take place sampling methods are employed. These include probability sampling and non-probability sampling. For this particular research, the research population being employed is consumers in the United Kingdom. To be specific consumers in the retail industry which may include supermarkets. Having established the research population it can be noted that the researcher further denotes that the research sample is consumers who have purchased food-related products in the last year. This reminds us that the study is centred on the prevention of food fraud from the consumer's perspective.

The consumers in this research are a sample of a population of individuals who through a company's products have noticed wrongdoings in the organisations and the only way to stop these wrongdoings is by engaging in whistleblowing. According to the Association of Certified Fraud Examiners {ACFE 2018} consumers are vital factors in the area of whistleblowing. Due to previous food fraud scandals that have taken place, consumers have now gained a key interest in information about the products such as origin, labelling details and adulteration.

According to Hong et al., {2017}, consumers are becoming aware of how vital it is to know various information such as origin, and accurate labelling of products to avoid adulteration products. This allows them to be in a position to notice the wrongdoing and report it to prevent food fraud. As stated above the opportunity of having free-flowing information is beneficial for the consumers as a first point in addressing food fraud. Eliot {2004} suggests that prevention of food fraud will start with consumer awareness and providing them with assistance once they suspect any fraudulent activities have taken place. For instance, providing consumers with information that is easy to understand through websites or social media and how they can take action if they notice something is wrong with the product.

As mentioned earlier, reporting of wrongdoing comes with risks. However, consumers do not go through threats such as loss of jobs like employees would once, they blow the whistle. This indicates that consumers have nothing to lose when it comes to blowing the whistle, which is an advantage of being an external whistleblower. It has been discovered that consumers are in a position in which they have power and authority. They have the power to question why certain products appear to be cheaper than usual because this might be a sign of poor quality of food. This will result in potentially

serious health problems once consumed {Eliot, 2004}. It is therefore vital to protect consumers by maintaining consumer confidence in food. For this reason, consumers are considered key stakeholders in the supply chain, and their health must be put first. This can only be achieved through correct labelling of food, avoiding wrong substitutions, and producing the goods in a clean and safe environment. Once this is achieved consumer trust will not be broken and they will continue to purchase goods {Eliot, 2004}.

Data will be collected from consumers in the retail sector in the United Kingdom from various platforms online. According to the Association of Certified Fraud Examiners {2018}, the retail sector experiences a high rate of fraud which mainly involves food fraud and unethical business practices. The usual food categories prone to food fraud are seafood, olive oil, milk products and meat products as reported by European Communities {2020}.

Structural Equation Modelling {SEM} was validated using fit indices such as CFI, RMSEA, and TLI. Convergent and discriminant validity were assessed using AVE and composite reliability scores. The results confirmed the model's robustness and the appropriateness of the hypothesized relationships.

Having established the sample being used in this study, we need to now understand how it will be collected. It is not possible to state the total number of consumers that this research will use. Therefore, probability sampling will not be used to obtain a random and respective sample. However, this research will use non-probability sampling to obtain the sample for the research. Non-probability sampling has been selected for this research because it can cater to a large number of uncountable respondents.

3.5 Data Collection Method

Once the research population and research sample have been established by the researcher. The next step is to collect data to address the research aims and objectives. This is a very vital part of research as it will help address the research aims and objectives it acts as the groundwork for the research results. This is further supported by researchers such as Creswell and Poth {2018} who define data collection as the process of gathering relevant information from vast sources to answer research questions. It can be noted that data can be broken down into two parts primary data and secondary data.

Primary data involves the collection of data straight from the source for the exact purpose of the study. This is usually conducted through interviews, surveys, and experiments. On the other hand,

secondary data is collected from data that was previously collected by others used for different objectives. Data can be collected through various methods such as interviews, focus groups, surveys, experiments etc. Researchers such as Ford and Richardson {1994} suggest that questionnaires and surveys are a common method of collecting data in business ethics research. Surveys can be categorised into the following cross-sectional surveys, longitudinal surveys, descriptive surveys, and analytical surveys. Under a cross-sectional survey, the researcher aims to collect data at a particular point in time while a longitudinal survey involves collecting data over time from the same contributor.

A researcher intending to research to investigate the correlation between customer satisfaction and products will have to use analytical surveys to collect the data. The descriptive survey is another survey used to collect data, and this particular one aims to describe particular characteristics. It can be noted that surveys are cheap, easy, and quick to use as proposed by Cowton {1998}. However, using surveys to collect data can be a disadvantage to the researcher because some participants may not answer the survey. This will result in non-response bias. It is key that the researcher creates a thorough survey because a survey that is poorly designed can create inaccurate data. As the respondent might not understand the survey. Social desirability bias is another limitation of the researcher using surveys. This mainly involves the researcher responding to the survey in a socially acceptable manner rather than in a truthful way.

After a critical analysis of the literature, the researcher concluded that data will be collected using surveys. This method of collecting data will also work well with the large sample being proposed for this research. Based on the above information, surveys will be the methods used in this research to understand the role of the following factors: opportunity, pressure, rationalisation, capability, seriousness of wrongdoing as well as laws and policies {whistleblowing hexagon} as means of preventing food fraud. Cross-sectional surveys have been selected for this research because the researcher will collect data at a single point in time. These surveys will be distributed online for the consumers to take part.

According to Babbie {2020}, the research design for quantitative study depends on questionnaires, surveys, and experiments to collect data. This researcher further emphasises the use of surveys in this research, which reminds us that the nature of our research is a quantitative study. It can be noted that another reason why the quantitative study was picked for this research compared to qualitative research is because it can be used in larger populations. The research focuses on consumers which

can be identified as a larger population. With that in mind, efficiency is key in research and using quantitative research enables this because it allows for the analysis of large datasets systematically using software such as SPSS, R and Python.

Despite quantitative research showcasing strengths for this research, it has a few weaknesses to consider. The researcher has gone into details of the weaknesses in the discussion chapter.

3.6 Survey Development

From the above information, the reader can note that surveys will be used to collect data to answer the research question.

A brief recap of this study this research aims to understand consumer whistleblowing intention regarding food fraud, a study conducted in the United Kingdom.

Our study develops a new whistleblowing model, indicating that consumers play a key role in whistleblowing and have the potential to prevent unethical food practices.

Firstly, whistleblowing factors {opportunity, pressure, rationalisation, seriousness of wrongdoing, laws, and policies} influence a consumer's whistleblowing intention upon discovering unethical food practices. Secondly, consumer whistleblowing behaviour is examined through the use of the theory of planned behaviour in this study. It is further suggested that once consumers engage in reporting unethical food practices the following outcomes may be viable: brand trust, boycott, and word of mouth. It can be noted that these outcomes have the impact of preventing food fraud.

Before the survey was created a measurement scale was formed to ensure validity, reliability and accuracy of the results obtained. It is important to note that using measurement item scales is very vital in quantitative studies. It can be noted that all variables that have been used in the measurement item scale in this research have previously been developed by other researchers. Due to the nature of the research, it has been determined there are fewer studies pertaining to whistleblowing and food fraud from a consumer perspective. The researcher has adopted and developed measurement scales from researchers such as Latan et al. {2019}, Brown et al., {2016}, Blenkinsopp {2009}, and Musa et al., {2018}.

The measurement scales being used to understand the research objectives are pressure, opportunity, rationalisation, capability, seriousness of wrongdoing, laws and policies, theory of

planned behaviour {attitude, social norm, and perceived behavioural control} and outcome variables {brand trust, boycott, and negative word of mouth}. The following section will give an in-depth analysis of these measurement scales.

‡ **Pressure** - The Pressure incentive in whistleblowing is considered a positive incentive which motivates individuals to reveal wrongdoing {Latan et al., 2020}. Similarly, Smaili and Arroyo {2017} suggest that pressure incentives can be used to understand the intention to blow the whistle. For this variable, 4 items have been modified from Latan et., {2019}. We used a 7-point Likert scale. 1= not likely to 7= very likely. The following items have been employed in the survey. For example, respondents were asked how likely they were to blow the whistle because of a sense of moral obligations, how likely they were to blow the whistle because of peer pressure, how likely they were to blow the whistle because it's their duty and finally how likely they were to blow the whistle because of religious beliefs.

‡ **Opportunity**- Under this factor of the whistleblowing model, the individual is faced with the opportunity to report the misconduct if they have the right support from organisational and standard policies {Brown et al., 2016}. For this variable, 4 items have been modified from Latan et al., {2019}. Similarly, for this variable, a Likert scale of 7-point Likert scale was used with 1= not likely to 7= very likely to understand the possible intention consumers would blow the whistle. Respondents were presented with the following statements: 'I am very likely to encounter challenges in the process of reporting unethical food practices,' 'I am likely to not blow the whistle if the firm hinders reporting of wrongdoing by not providing adequate reporting channels,' 'I think internal reporting has shown to be less effective hence continuous unethical food practices' and finally 'I am likely to encounter retaliation by the food companies.'

‡ **Capability**- Wolfe and Hermanson {2004} propose that capability is an important part of the fraud diamond model. With this information, it is key to note that the model being created is developed from the fraud diamond. That has been used in various research articles to address corporate fraud etc. This particular variable will be key in our research because it contains technical and psychological factors that assist an individual in speaking out. Like the variables above a Likert

scale of a 7-point being 1= not likely to 7= very likely is used to understand the possible intention that would lead consumers to blow the whistle. Respondents have been presented with the following statements in the survey: 'I am likely to speak out about unethical food practices,' 'I am more likely to blow the whistle because I have immunity to retaliation,' 'I am likely to blow the whistle because I have the mental ability to think effectively and efficiently,' 'I am confident to speak out about unethical food practices,' 'I am more likely to blow the whistle because I have the necessary tech skills.' It is worth noting that this variable has adopted 5 items and not 4 items like the above variables.

- † **Rationalisation-** Latan et al {2018} suggest that rationalisation is the reasoning assumed by whistleblowers in relation to their course of actions when faced with wrongdoing. For this variable item are adopted from Latan et al {2019}. Like the variables above a Likert scale of a 7point being 1= not likely to 7= very likely is used to understand the possible intention consumers would blow the whistle. Respondents are presented with the statements as follows: 'I am likely to blow the whistle despite thinking effectively about reporting the wrongdoing,' 'I think reporting of unethical food products is likely to be ineffective,' 'I am likely to blow the whistle to help someone else by reporting unethical food practices.'
- † **Seriousness of wrongdoing** - A wrongdoing that is observed as more serious is likely to be reported by a whistleblower to relevant authorities as suggested by Taylor and Curtis {2010}. The seriousness of wrongdoing measurement has been adopted from the works of Scultz {1993} with modifications to the Likert scale being 1= very low and 7 very high. For our research, the Likert scale has been modified to the following Likert scale of a 7-point Likert scale with 1= not likely to 7= very likely being used to understand the possible intention consumers would blow the whistle. The following 5 statements have been provided to the respondent: 'I am likely to blow the whistle due to mislabelling in food packaging,' 'I am likely to blow the whistle due to contamination in food production,' 'I am not likely to blow the whistle due to wrongful substitution of low-quality ingredients in production of food,' 'I am likely to blow the whistle because of theft in food production,' 'I am likely to blow the whistle because of mis presentation of food.'
- † **Laws and policies** – items have been adopted from Musa et al., {2018} that use a 5-point Likert scale. 1 = strongly disagree and 5 = strongly agree. For this variable the researcher adopts it with modifications and uses a Likert scale has been modified to the following Likert scale of a 7-point

Likert scale with 1= not likely to 7= very likely is used to understand the possible intention consumers would blow the whistle. The respondent is then presented with the following statements: 'I am likely to blow the whistle because the Food and Safety Act has been created in an ethical and normative framework,' 'I am likely to blow the whistle because the Food and Safety Act has been created to encourage reporting of unethical food practices,' 'I am likely to blow the whistle because the food and safety act has been legitimately created and should be obeyed.'

- † **Perceived behavioural control**- two items from Blenkinsopp {2009} 5 Likert scale 1= not likely and 5= very likely have been adopted in this study. This is modified to suit the survey and a 7point Likert scale being 1= not likely to 7= very likely to answer the research questions. The following statements are presented in the survey: 'I am likely to not blow the whistle because I tend to think in great depth about negative feedback concerning food,' 'I am likely to blow the whistle because I pay close attention to negative information concerning food production.'
- † **Social norm**: using 5-point Likert 1= not much and 5= very much. The researcher has again modified this variable and the following is used 7-point Likert scale of a 7-point Likert scale being 1= not likely to 7= very likely to obtain to answer the research questions. The respondent is then presented with the following statements under the social norm variable. 'I am more likely to blow the whistle because I know my family would be proud of me,' 'I am more likely to blow the whistle because I know my friends would be proud of me,' 'I am more likely to blow the whistle because I know my co-workers would be proud of me.'
- † **Attitude**- items from Blenkinsopp's {2009} 5-point Likert scale 1= not true and 5= very true have been adopted in this study. For this variable again a 7-point Likert scale of a 7-point Likert scale. 1= not likely to 7= very likely has been used to answer the research questions. Three statements are used in the survey. 'I am likely to blow the whistle because reporting the wrongdoing will control food fraud,' 'I am likely to not blow the whistle because reporting of unethical food production will prevent harm to the firm,' 'I am likely to blow the whistle because reporting of wrongful production of food is in the public interest.'
- † **Consumer whistleblowing intention**- items from Blenkinsopp {2009}, have been adopted with a Likert scale 1= strongly disagree and 7= strongly agree. The following statements are presented to the respondents in the survey. 'I am likely to blow the whistle by providing the public with information,' 'I am likely to blow the whistle to appropriate authorities outside the firm,' 'I am likely to blow the whistle to respective authorities outside the firm.'

- ✦ **Brand trust**- for this variable item from Sahin et al {2011} with a Likert 1= strongly disagree and 7= strongly agree have been adopted. The following statements are provided in the survey: 'My preferred brand never disappoints the quality of its products,' ' My preferred brand guarantees my satisfaction,' 'I am confident about my preferred brand,' and 'My preferred brand meets my highest expectations all the time.'
- ✦ **Boycott**- the following statements are provided in the survey alongside a Likert scale 1= strongly disagree and 7= strongly agree. 'I am likely to feel guilty if I buy this brand,' ' I am likely to feel better about myself if I manage to boycott the brand,' ' I am likely to boycott this brand, I intend to boycott this brand.'
- ✦ **Negative word of mouth**- Using items from Naumann et al., {2020} a Likert scale of 1= strongly disagree and 7 strongly agree has been adopted for this study. With the above information, a Likert scale of 1= strongly disagree and 7= strongly agree is used to address the research question. The respondent is faced with the following statements to answer; 'I frequently mention unethical food practices,' 'I frequently go into details when I tell others about unethical food practices,' and 'I talk about unethical food practices more than I talk about anything food related.'

3.7 Survey design

This section of the thesis describes the survey design that the researcher provided to the respondents. The survey was six pages long and it was divided into three sections. It is worth noting that the Brunel ethics department approved the researcher to carry out this research. The first page of the survey was a brief introduction of the researcher and the aim of the study being carried out. The information on the first page also indicated to the respondent that the Brunel University ethics committee had approved the research. The researcher also assured the respondents that the information being provided is strictly confidential and will remain confidential. The demographic variables were all presented on the first page of the survey. These included age, gender, ethnicity, educational background, employment, annual income, average spend on food and how many times the respondents went to a food shop.

The survey then went over to section one which included brief information that the respondent had to do before arriving at the statements. The information comprised of the researcher

asking the respondent to think of a recent food shop they undertook. It was at this point that the respondent was asked to imagine that the food product purchased had been unethically produced.

It is key to note that food fraud is affecting the food supply chain, consumers, and other key stakeholders. For example, the horse meat scandal in which beef products were replaced with horsemeat is an indication of how serious unethical food production is taking place. {Cui et al., 2019}. With this in mind and how serious unethical food practices are the respondent was asked how they would feel about purchasing unethically produced food and how would they potentially handle this matter to ensure others do not fall victim.

After the respondents have gained some information pertaining to the study and the survey they are then presented with the statements. As mentioned earlier all the variables have a Likert scale of 7, with 1 being strongly disagree and 7 being strongly agree. Each variable has a label and all the units adopted from previous research respectively. For example, the pressure variable has been listed with all of its units. Section one of the survey contains the following variables: pressure, opportunity, rationalisation, capability, seriousness of wrongdoing, laws and policies, consumer whistleblowing intention and lastly theory of planned behaviour { attitude, perceived behavioural control and social norms}

Once the respondent is finished with the first section, they move on to the second section of the survey. As mentioned earlier the researcher asks the respondent to imagine purchasing food that is unethically produced. How they would feel about this and how would they prevent this from happening again? It is in section two that the researcher provides the respondents with possible outcomes that would take place if they blew the whistle. For example, would consumers boycott a biscuit that claims it is gluten-free or will they just lose trust in the brand? The researcher has provided only three possible outcomes for this research and the justifications for them have already been presented in chapter two.

Lastly, the survey was created online on Google Documents, to facilitate a high turnout of responses. Data collection through the survey was conducted over four to five months. A nonprobability {convenience} sampling technique was used by the researcher. The researcher posted the link to this survey on various online platforms such as social media and consumer forums. To maximize a good response rate, the researcher provided this survey to people in person to respond. It is worth noting that a total of 514 respondents were received for this study.

3.8 Pilot study

After the survey was designed, a small-scale preliminary investigation known as the pilot study was undertaken by the researcher. This is a preliminary investigation carried out before a full-scale research study. The researcher conducted the pilot study to identify potential challenges and improve reliability and the validity of the study. This is in line with various researchers such as Van Teijlingen and Hundley, 2001 who suggest conducting a pilot study to refine the research design, improve reliability, improve the validity of the research, and identify potential challenges the respondents might face.

It is worth noting that conducting a pilot test with regard to understanding consumer whistleblowing intention is vital to ensure that survey instruments, sampling and data collection methods efficiently and effectively capture consumer attitudes and behaviours to address the research question.

The survey was distributed to 50 participants in the United Kingdom, who were all above the age of 18 years and purchased food recently in the last few weeks. The survey was initially distributed and completed on Google Documents. The survey sections included all the whistleblowing factors mentioned earlier such as pressure, opportunity, rationalisation, seriousness of wrongdoing, capability and laws and policies and the theory of planned behaviour variables. It also includes various demographic questions such as annual income, how much you spend on food weekly, gender, age, educational background, work status etc. All the respondents were asked to respond to various questions in the survey using a Likert scale for the researcher to understand their intention to report wrongdoing. It is worth noting that respondents were advised of their anonymity and confidentiality in taking part in the survey.

During the pilot test majority of the respondents reported back that it took them no longer than 10 minutes to complete the whole survey. Key feedback provided to the researcher was that 12 respondents were not aware of the laws and policies in the United Kingdom with regard to reporting unethical food practices. Another key feedback provided is that the survey was easy to understand, and the topic was very interesting.

Overall, the feedback provided by the 50 respondents provided the researcher with the necessary need to go ahead and collect data for the research.

3.9 Summary

Most of the time people confuse research method {also known as research technique} and research methodology {also known as research design}. According to Oppenheim {1992}, research methodology is the simple plan or strategy or the reason behind the intended research that the researcher is going to undertake to produce valid results from it. The purpose of the research methodology is to answer the research questions {Oppenheim, 1992}. Similarly, Miller suggests that research methodology offers knowledge which generally assists researchers in describing and analysing their research methods. Basically, the research methodology will act as the heart of the research to attain results. On the other hand, the research method is part of the research methodology. It comprises the methods used for the collection and generation of data to fulfil the objective of the study. It can be noted that both the research method and research methodology play a vital role respectively in providing key information to the study. A researcher will select their research method after taking into consideration so many research dimensions as suggested by Bryman and Bell {2007}. Selecting a research method will equip the researcher with the sampling technique, data collection and statistical analysis. The next sections of this chapter will elaborate on the approaches I intend to take.

Researchers such as Creswell and Creswell {2018} suggest that quantitative study reduces researcher bias due to the nature in which it relies on standardized instruments. According to Babbie {2020}, quantitative research simplifies research by mainly focusing on measurable variables. Unlike qualitative research which will focus on patterns of participants, quantitative research does not provide an in-depth of patterns of participants. In conclusion, the researcher found it key to pick quantitative research based on various reasons stated above that have been backed by fellow researchers.

4. Analysis of Data

A brief reminder of the research so far, the first chapter was introduced to the reader, and it contains vital information pertaining to the objectives, a brief introduction to the study and why the study is being conducted. Chapter one of this research elaborates on the research aims and objectives. The next section after the introduction provides the reader with an extensive body of literature. This literature is comprised of whistleblowing literature, food fraud literature, consumer whistleblowing and the theory underpinning this research {theory of planned behaviour}. Chapter three known as the methods and methodology chapter is used to provide the reader with key elements such as research strategy, research method and methodology adopted in the study. It is worth noting that after the three chapters have been discussed the next chapter is the analysis of data. This is chapter four; in this chapter, the researcher will explain the statistical methods employed and analysis of results obtained after the collection of data.

For this research, data was collected through a survey which was provided to consumers through various platforms. After the data was collected it was analysed in statistical tools such as SPSS and Amos to understand consumer whistleblowing intention in the United Kingdom with regard to food fraud.

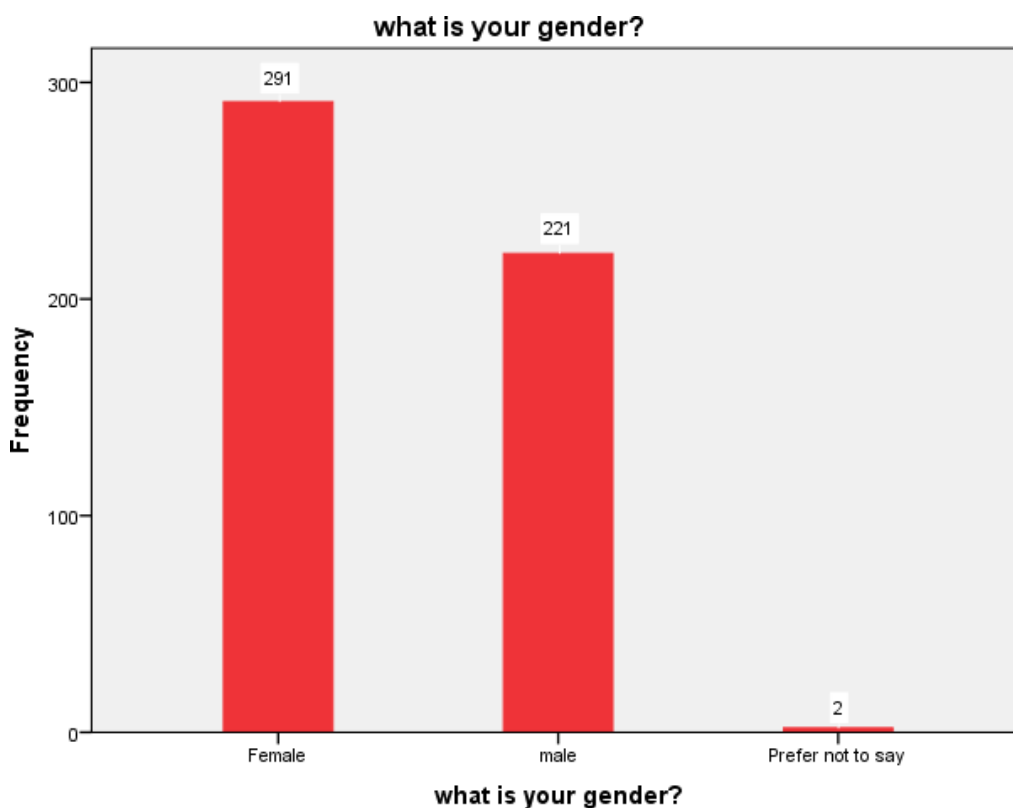
4.1 Descriptive Statistics

4.1.1 Gender of respondent's data

The research received a total of 514 respondents of which 221 respondents were male and 291 were female respondents. Accounting for 43% and 56.6% respectively. Our findings indicate similarity with a study conducted by Chen {2024}. Chen {2024} conducted research on medical insurance fraud whistleblowers, this study revealed that females were more inclined to report wrongdoing compared to males. This study discovered that 171 females are more likely to report wrongdoing to appropriate authorities outside the firm. While only 93 males are inclined to report unethical food practices to appropriate authorities outside the firm. Table 8 in the appendix provides in detail the differences in which gender plays a significant role in consumer whistleblowing intention. For example, 172 females and 170 females responded that they would report wrongdoing to their respective authorities and the public. This indicates that females are ethically inclined to ensure companies produce their food

ethically. The difference between males reporting to the public compared to females is as follows; 90 males would report unethically produced products and 172 females would report to the public unethical food practices. According to Yong and Pearce, {2013}, men may prioritize loyalty to the organisation and hence why we see that a few males {90} would report to the public.

As mentioned earlier the respondents from our study indicate 56% identify as female and 43% identify as male. From the graph below we can note that overall, the sample reflects a reasonably balanced distribution between male and female respondents with only a small amount of people choosing not to state their gender. Refer to table 2 in the appendix for the summary table of the distribution of gender in our study.



4.1.2 Age of respondent's data

Age was a demographic variable used in this research to understand consumer whistleblowing intention in the United Kingdom. This study comprised consumers above 18 years old who have made

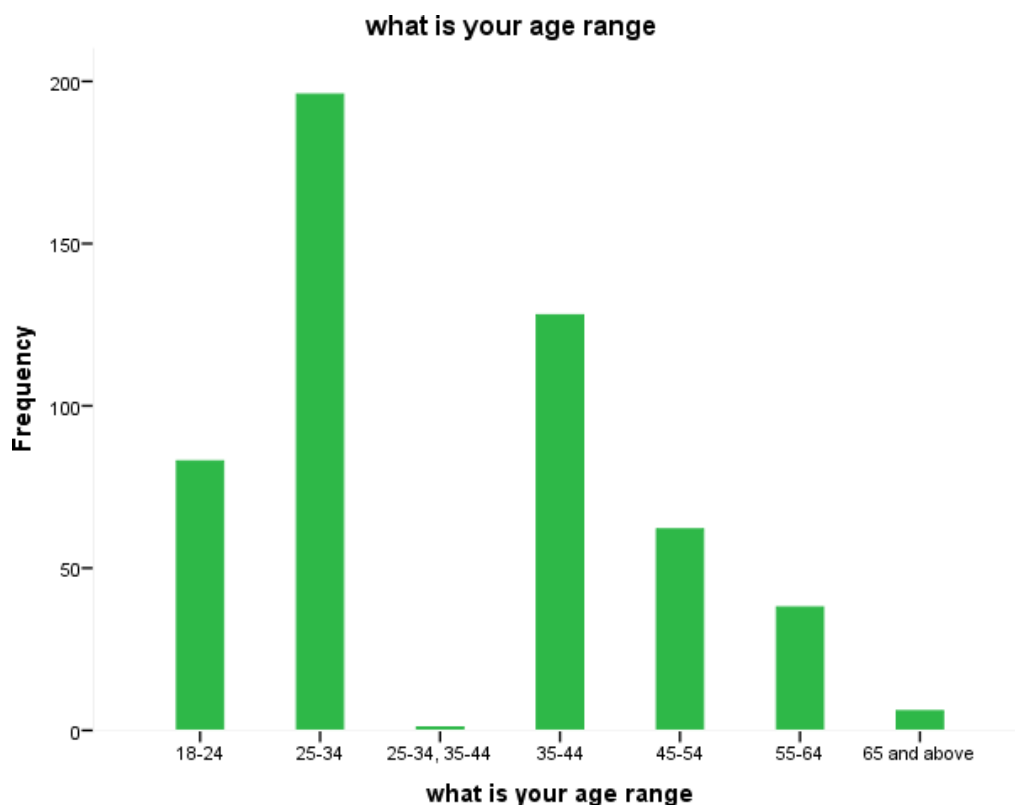
a food purchase in recent months. It can be noted that various age groups took part in this research. The age range between 18-24 accounted for 83 respondents while 197 respondents accounted for 25-34 years. The second highest respondents were 129 respondents which was from 35-44 years. Additionally, 62 respondents took part in the research and were all around 45-54 years old. 38 respondents were accounted for in the age group of 55-64 years old and lastly 6 respondents that were in the age range of 65 and above took part in the survey. A detailed illustration of table 11 of this can be found in the appendix section of the thesis.

In total, as mentioned above 514 responses were returned for this study. From Table 6 below we can gather key information with regard to external consumer whistleblowing intention and age of respondents received. A total of 196 respondents between 25 and 34 years old suggested that they would be inclined to report unethical food practices to the public. With 88 respondents more likely to report to the public and 34 respondents least likely to report unethical food practices to the public. As mentioned above respondents between 65 and above only accounted for 6 respondents for this reason they have the lowest number of respondents that would take part in reporting unethical food practices. Respondents between the ages of 18 and 24 suggest that 20 respondents would report unethical practices to the public while 19 respondents would only report unethical food practices to appropriate authorities and respective authorities outside the firm. From this information, we can deduce that respondents between 18 and 24 do not have a keen interest in engaging in unethical practices compared to other respondents. This study discovered that 234 respondents between the ages of 35 and 44 would engage in external whistleblowing to address unethical food practices. On the other hand, 9 respondents between the ages of 35 and 44 suggest that they would not engage in reporting wrongdoing externally. According to Jubb {1999}, older individuals are less likely to be inclined to report unethical practices because of higher career risks. This is in line with our results that indicate that 9 respondents between 45 years old and 54 years old would not engage in reporting unethical food practices externally. On the same token, only 3 respondents between 55 and 65 years old suggest they are least likely to report unethical food practices externally.

Lastly, our findings further suggest that 129 respondents between 45 and 55 years old will be more inclined to report unethical food practices externally. This trend is also noticed with 96 respondents between 55 and 65 years old likely to report unethical food practices externally.

With regards to age distribution of our study the respondents indicate a strong representation across young and middle-aged adults. 38% account for the largest group of individuals which is 25-34 years

old, followed by 24% which accounts for 35-44 age group, the younger age group accounts for 16.1% of respondents. Those aged 45-54 account for 12% while respondents aged 55-64 account for 7.4% of the sample. A small portion of 1.2% is accounted for 65 and above respondents. The graph below highlights the skews towards adults in their mid 20's to mid 40's reflecting a predominantly economically active population. Furthermore, a detailed table of the summary of age is in the appendix section table 3.



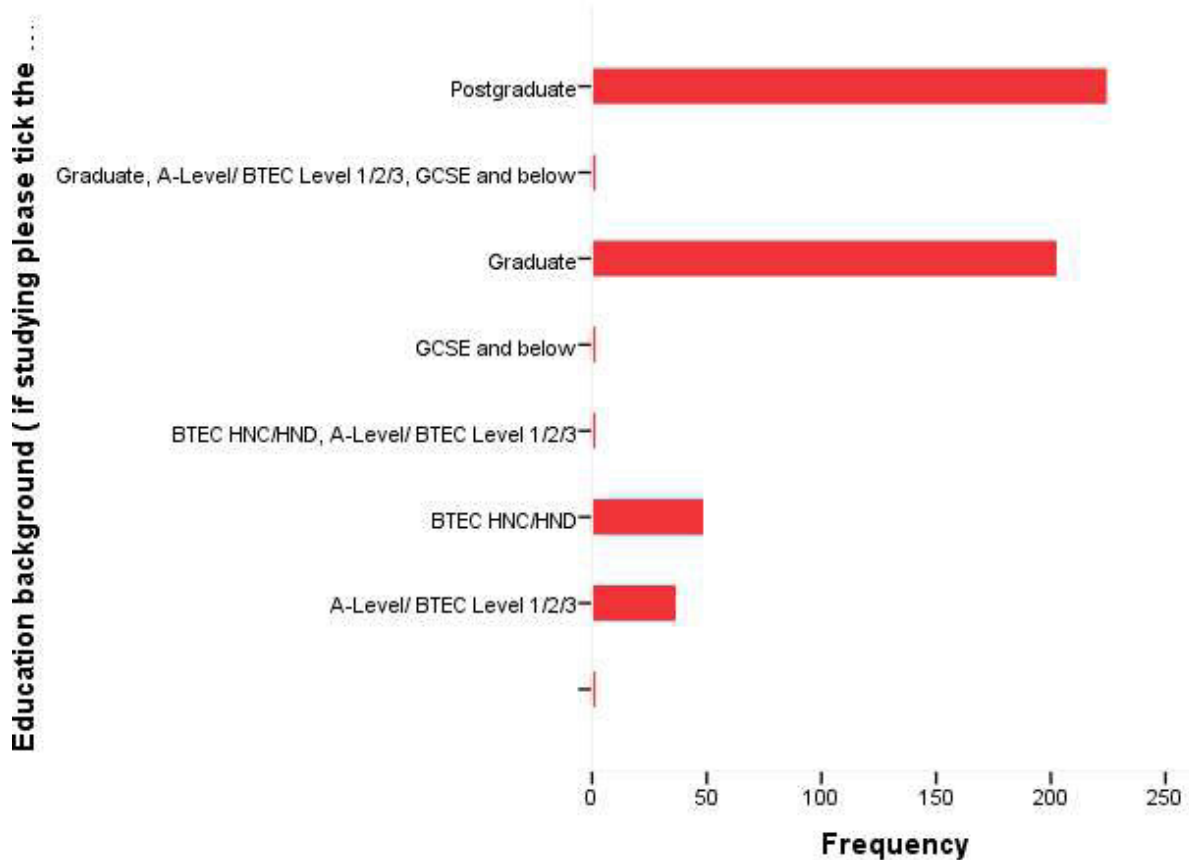
4.1.3 Consumer Whistleblowing Intention and Education

As mentioned above a total of 514 responses were received in this study. The respondents all came from various educational backgrounds such as 224 respondents having postgraduate degrees and 203 respondents having graduate degrees. Consumers with BTEC HNC/HND accounted for 49 respondents while 38 respondents accounted for A-Level/ BTEC Level 1/2/3. And lastly, 2 consumers had GCSE and below. All this information is illustrated in the table 12 in the appendix. A total of 202 respondents with a graduate degree provided this research with key insights with regard to providing the public with information pertaining to unethical food practices. It can be seen from Table 7 that

90 graduates are more likely to report unethical food practices to the public. On the same token, 90 graduates and 89 graduates suggest that they would report unethical food practices to respective authorities and appropriate authorities outside the firm. This indicates that graduates are more likely to engage in external whistleblowing to expose wrongful food practices. This study indicates that the higher the education background the higher the chances of the consumers reporting unethical food practices. With this in mind, we can see that postgraduate respondents are more ethically inclined compared to all the other respondents. They have the highest rate of respondents with regard to reporting unethical food practices. Results obtained indicate that 446 respondents holding a postgraduate degree are more likely to report unethical food practices to the public, to appropriate authorities outside the firm and to respective authorities outside the firm. As the researcher stated above the higher the education background the higher the chances of reporting unethical food practices. Respondents with A-Level/ BTEC levels 1,2,3 have some of the lowest number of consumers that would report unethical food practices. Results indicate that only 28 A-Level/ BTEC levels 1,2,3 would engage in external whistleblowing. It can be noted that respondents with GCSE and below and Graduate, A- level/ BTEC Levels 1,2,3, GCSE and below have the lowest indicating that they are least likely to report wrongdoings.

The sample was highly educated with majority of respondents reporting graduate or postgraduate. Notably 39% of respondents have a graduate degree and 43% of the respondents in this study have completed a postgraduate. Overall, the education profile clearly indicates a predominantly well-educated sample as can be seen from the distribution graph below. A summary of this finding is in table 4 in the appendix.

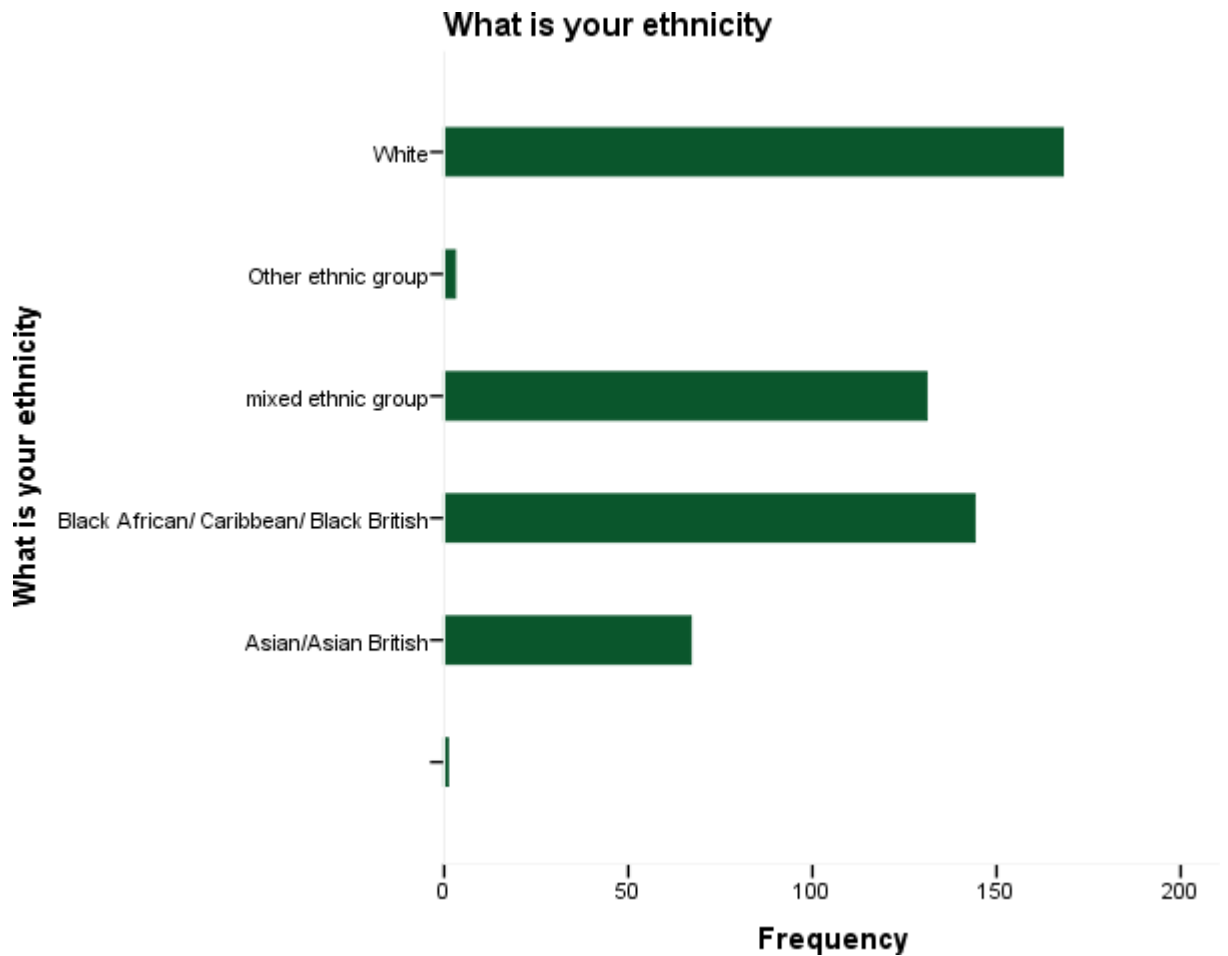
Education background (if studying please tick the qualification you're working towards achieving



4.1.4 Consumer Intention and Ethnicity

Ethnicity is a key variable that has been used in this research as a demographic variable. It can be noted that 168 respondents were from white ethnic backgrounds, 144 respondents accounted for Black African/ Caribbean/ Black British ethnicity, mixed ethnic group accounts for 131 respondents, 67 respondents were from Asian/ Asian British background and lastly, other ethnic groups comprise of 3 respondents. With regards to distribution as can be seen below, the sample reflects a diverse mix of ethnic backgrounds, white respondents in this study account for 32.7% followed by black African/ Caribbean/ black British who represent 28% of the sample. A substantial proportion {25.5%} identified as belonging to a mixed ethnic group, highlighting notable multicultural representation. Asian/Asian British respondents made up 13.0%, while a very small number {0.6%} identified with other ethnic categories. One participant {0.2%} did not specify their ethnicity. Overall, the dataset demonstrates a broadly diverse respondent pool, with no single ethnic group dominating the sample size.

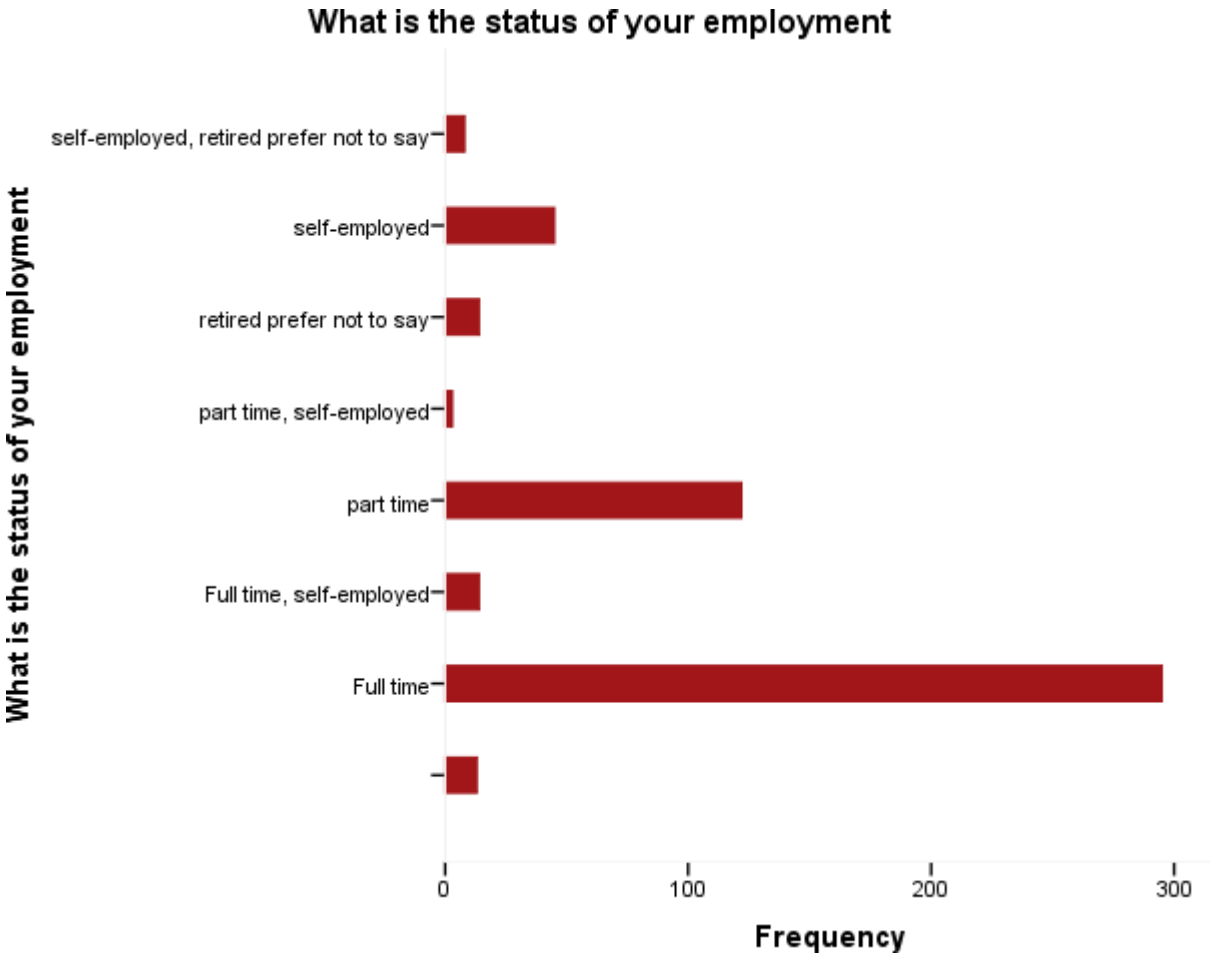
This information provided is illustrated in table 13 in the appendix chapter. The table below provides the reader with key information pertaining to ethnicity and consumer intention to report unethical practices. Respondents from Black African/ Caribbean and Black British are more likely to report unethical practices to the public, respective authorities outside the firm and appropriate authorities outside the firm. This ethnic group has indicated that 289 respondents are more likely to engage in external whistleblowing. Despite having the highest number of respondents willing to take part in the reporting of unethical practices 52 respondents indicated that they would not take part in reporting unethical practices externally. Respondents from white ethnic backgrounds have the second highest number of respondents indicating that they are more likely to engage in external whistleblowing. With 256 responding “more likely” to report unethical practices to the public, to appropriate authorities outside the firm and to respective authorities outside the firm. On the other hand, 71 respondents from white ethnic backgrounds suggest that they are least likely to report unethical practices externally. Respondents from Asian/Asian British, Mixed Ethnic, and Other Ethnic groups indicate that 250 respondents would report unethical practices externally to prevent fraud. It can be noted that respondents from Asian/Asian British, Mixed Ethnic, and Other Ethnic have the lowest number of respondents that would report unethical practices externally.



4.1.5 Consumer Intention and Employment Status

Employment status has been used in this study to understand consumer intentions with regard to reporting unethical food practices. The following information is discovered from the responses provided. Respondents with full-time jobs accounted for 309 respondents, and 125 part-time respondents took part in this study. Self-employed respondents account for 70 respondents and 22 respondents are retired and prefer not to say. Most respondents were engaged in full-time employment, representing 57.4% of the sample. Part-time workers made up another substantial proportion at 23.7%. Self-employment was also notable, with 8.8% identifying as self-employed and an additional 2.7% combining full-time work with self-employment. Smaller groups included respondents who reported part-time self-employment {0.6%} and those who were retired or preferred not to disclose their status {2.7%}. A further 1.6% selected overlapping categories involving self-employment and retirement. Overall, the employment distribution shows that the sample is primarily composed of active workers, with full-time employment clearly dominant. Further information can be found in table 7 in the appendix section of the thesis

All this is illustrated in a figure that’s been included in the appendix section of the research. It’s been discovered that 508 respondents with full-time jobs indicate that they are more likely to report wrongdoing externally. While 141 full-time respondents suggest that they are least likely to report unethical practices externally. Part-time respondents have the second highest responses indicating that 128 would report unethical practices externally. It can be noted that respondents with self-employed positions indicate that 117 self-employed consumers are more likely to take part in external whistleblowing.



4.1.6 Consumer Intention and Annual Income

Annual income was used as a demographic variable in this study to understand consumer intention to report unethical practices externally. Various income categories have been used to describe respondents’ annual income. It was discovered that 82 respondents have an income within 0-£9,999 and 264 respondents have an annual income between £10,000 and £49,999. An income of £50,000

to £99,999 was selected by 121 respondents in this study. Additionally, 41 respondents reported having an annual income between £100,000 and £149,000. Lastly, 2 respondents indicated that they have an annual income of £150,000 and above. The above information has been illustrated in a bar graph in the appendix.

With this in mind, we can note that annual income has an impact on consumer whistleblowing intention. As can be seen from Table 14 below: 375 respondents with an annual income between £10,000 and £49,999 suggest that they would take part in reporting unethical practices externally. This means that they are more likely to report wrongdoing to appropriate authorities outside the firm and provide the public with information, and respective authorities outside the firm. However, 142 respondents with the same income suggest that they will not be inclined to engage in any activities that require them to blow the whistle externally. It can be noted that 228 respondents with an annual income between £50,000 and £99,999 indicate that they are more likely to report unethical food practices externally. With 24 respondents out of the sample with the same income stated above suggesting that they would not engage in reporting unethical practices externally. It was discovered that individuals with the lowest income being 0-£9,999 had the outcome with regards to taking part in external whistleblowing. Results show that only 40 respondents are likely to report wrongdoing externally. In the same manner, 80 respondents have suggested that they are least likely to report unethical practices externally. As stated above only two people with an annual income of £150,000 and above took part in our research. For this reason, they have the lowest responses with regard to reporting wrongdoing externally. However, one respondent is neutral about reporting unethical practices to the public.

4.1.7 Consumer Intention and Food Shop History

This section of Chapter 4 provides us with information about consumer intention and their food shop history. Food shop history was divided into the following categories shopping once a month, twice a month, three times a month, and more than three times. It was further discovered that 38 respondents only shop for food once a month, 137 respondents shop twice a month, 203 respondents do their food shop three times a month, and 133 respondents do a food shop more than three times a month. This is illustrated in table {9} which can be found in the appendices section. From Table 11 we can now discuss the trends in food shops and consumer whistleblowing intention. Respondents who shop more than three times a month indicated the highest responses of 241 to likely report unethical practices to external parties of the organisation. On the other hand, 31

respondents who shop more than three times a month indicated that they would not engage in external reporting of unethical activities. 162 respondents who shop twice a month suggest that they are more likely to report an unethical practice externally compared to 102 who suggest they are least likely to engage in unethical food practices. On the other hand, 102 respondents who shop only once a month suggest that they are likely to engage in external whistleblowing. With 34 respondents suggested that they are least likely to take part in external whistleblowing.

4.1.8 Consumer Intention and Food Shop Spend

the last variable to be analysed in this section is monthly food shop spend by consumers. Respondents that spend less than £150 account for 196 respondents in this research. While respondents that spend more than £200 account for 144 respondents from the study sample. It can be noted that 71 respondents spend less than £100 a month and 82 respondents spend less than £200. Lastly, only 21 respondents from this study spend less than £50 a month on their food shop. The highest number of respondents indicated that they would most likely report unethical food practices externally and spend less than £150 a month on food.

4.2 Testing Original twelve Hypotheses

The first four hypotheses are part of the fraud triangle, and the model examines the relationship between the four components and consumer whistleblowing intention. multiple regression analysis is conducted with pressure, opportunity, rationalisation, and capability as independent variables. The model demonstrated excellent predictive power with multiple correlation coefficient $\{R\}$ OF 0.782 and R^2 of 0.611, highlighting that 61.1% of the variance in whistleblowing intention is explained by the four fraud triangle components. The model's stability is attained through the adjusted R^2 of 0.607 that suggested a minimal shrinkage. Furthermore, the F- change statistic $\{F=178.965, df1=3, df2=342, p<0.001\}$ indicates that the model is statistically significant and substantially better than a null model. Reference to table 15,16,17 and 18 for the model summary for the fraud triangle.

H₁: Pressure and whistleblowing intention

Our findings indicate a standardised regression coefficient $\{\beta = 0.254, p<0.001\}$ which suggests a significant positive relationship between perceived pressure and whistleblowing intention. Which suggests that when consumers perceive pressure on food companies there are more likely to develop intentions to report unethical practices. The collinearity statistics indicate Tolerance = 0.389, VIF=

2.571 which all fall within acceptable ranges. Resulting in the confirming that multicollinearity does not pose a threat to the validity of this relationship.

H₂: Opportunity and whistleblowing intention

Opportunity indicated a significant positive relationship with whistleblowing intention { $\beta = 0.234$, $p < 0.001$ }. The findings suggests that when consumers perceive that companies have opportunities to commit unethical practices due to weak internal controls etc they are more inclined to report such practices. Lastly the collinearity diagnostics indicate no multicollinearity concerns { Tolerance = 0.404, VIF = 2.475}.

H₃: Rationalisation and whistleblowing intention

In this study rationalisation was discovered as the strongest predictor among the fraud triangle components { $\beta = 0.426$, $p < 0.001$ }. with no indication of multicollinearity concerns { Tolerance = 0.356, VIF = 2.809}. It is worth noting that the strong effect obtained indicates that consumers are particularly concerned about corporate moral disengagement. This finding further extends the fraud triangle theory to consumers, highlighting that external stakeholders also respond to perceived moral disengagement.

H₄: Capability and whistleblowing intention

Capability showed a significant positive relationship { $\beta = 0.286$, $p < 0.001$ } with whistleblowing intention and indicated no multicollinearity issues { Tolerance = 0.379, VIF = 2.638}. This finding suggests that consumers perception of organisational competence to commit fraud increases their vigilance.

The overall fraud triangle model explains 61.1% variance in consumer whistleblowing intention, resulting in a substantial effect size {Cohen, 1988}. All four components have a significant prediction on whistle blowing intention with rationalisation having the strongest effect. The models high R^2 and significant F- statistic confirms that the fraud triangle originally developed for organisational context is highly applicable to understanding consumer whistleblowing behaviour in food fraud.

Model two: H5 and H6

The model highlighted a multiple correlation coefficient {R} of 0.704 and R^2 of 0.495, indicating that 49.5 % of the variance in whistleblowing intention is explained by seriousness of wrongdoing and laws and policies. The adjusted R^2 of 0.492 indicates a minimal shrinkage. The F- change statistics {

$F = 167.932, df_1 = 2, df_2 = 343, p < 0.001$ confirms the models statistical significance. Refer to appendix 19 and 20 for the model summary

H₅: Seriousness of wrongdoing and whistleblowing intention

Seriousness of wrongdoing in this study demonstrated a very strong positive relationship with consumer whistleblowing intention $\{\beta = 0.554, p < 0.001\}$ representing the largest single prediction across all models. Collinearity diagnostics $\{ \text{Tolerance} = 0.618, \text{VIF} = 1.618 \}$ indicates no multicollinearity concerns. This high effect suggests that consumers are highly responsive to the perceived severity of food fraud. When consumers believe that fraud poses a serious risk to health, safety, or economic welfare their motivation to reporting this unethical practice increases drastically. Our findings align with the moral intensity theory $\{ \text{Jones}, 1991 \}$ which suggest that the magnitude of consequences influences ethical decision making.

H₆: Laws and policies and whistleblowing intention

For this factor in the study, it provided a significant positive relationship with consumer whistleblowing intention $\{ \beta = 0.319, p < 0.001 \}$ with an acceptable collinearity statistic $\{ \text{Tolerance} = 0.618, \text{VIF} = 1.618 \}$. This finding suggests that consumers that are aware of legal frameworks governing reporting unethical food practices and laws protecting them in the event that they report unethical practices are more inclined to reporting unethical practices.

The overall interpretation of this model is that it explains 49.5% variance in whistleblowing intention, resulting in a representation of a large effect size. Both seriousness of wrongdoing and laws and policies significantly predict whistleblowing intention with seriousness of wrongdoing having the stronger effect. This further indicates that while legal frameworks matter the perceived magnitude of harm is the main driver of consumer whistleblowing in food fraud.

Model three (H₇- H₉)

The third model tested in this study is the theory of planned behaviour $\{ \text{Ajzen}, 1991 \}$ to consumer whistleblowing intention. which will examine the roles of attitude, social norms, and perceived behavioural control.

The model indicated a strong predictive validity with $R = 0.738$ and $R^2 = 0.544$. Indicating that 54.4% of variance in whistleblowing intention is explained by theory of planned behaviour components. The adjusted R^2 of 0.540 highlights minimal shrinkage. The F- change statistic $\{ F = 136.426, df_1 = 3, df_2 =$

342, $p < 0.001$ } confirms statistical control. Refer to table 21,22 and 23 for the model summary of theory of planned behaviour.

H₇ Attitude and whistleblowing intention

In this study attitude toward whistleblowing indicates a significant positive relationship with consumer whistleblowing intention $\{\beta = 0.324, p < 0.001\}$, also this factor obtained an acceptable collinearity statistic $\{\text{Tolerance} = 0.456, \text{VIF} = 2.193\}$. This finding verifies that consumers who hold favourable attitude towards whistleblowing viewing it as an ethical responsibility are more inclined to reporting unethical practices. Our findings align with theory of planned behaviour's core principle that attitudes shape behavioural intentions. In the context of food fraud, positive attitude may stem from beliefs about consumer protection, and corporate accountability.

H₈ Social norm and whistleblowing intention

Subjective social norms significantly predicted consumer whistleblowing intention $\{\beta = 0.227, p < 0.001\}$ with no multicollinearity concerns $\{\text{Tolerance} = 0.519, \text{VIF} = 1.927\}$. The results indicate that perceived social expectations and approval for whistleblowing increases consumers whistleblowing intention to reporting unethical food practices. When consumers have faith that their friends, family and community would support and encourage whistleblowing they are more inclined to reporting and taking part.

H₉ Perceived behavioural control and whistleblowing intention

This factor of the theory of planned behaviour appeared as the strongest predictor in the theory. The results obtained indicate $\{\beta = 0.377, p < 0.001\}$ and a collinearity diagnostic of $\text{Tolerance} = 0.442, \text{VIF} = 2.262\}$ highlighting no multicollinearity concerns. This results further suggests that consumers will believe they have they have the knowledge, resources, and ability to successfully report food fraud are significantly more likely to report unethical food practices.

Finally, the overall model explains 54.4% variance in consumer whistleblowing intention, signifying a large effect size and confirming the theory's applicability to food fraud context. All the three components of theory of planned behaviour act as significant predictors of consumer whistleblowing intention with perceived behavioural control attaining the strongest effect followed by attitude and social norms.

Model four (H10- H12) consumer reactions

The last model to be tested is the consumer reactions to food fraud which include boycott, brand trust and negative word of mouth that relate to whistleblowing intention.

The model produced $R = 0.607$ and $R^2 = 0.368$ indicating that 36.8% of variance in whistleblowing intention is explained by these consumer reaction variables. The fourth model yielded an adjusted R^2 of 0.363 demonstrating a minimal shrinkage. The F- change statistics { $F = 66.342$, $df_1 = 3$, $df_2 = 342$, $p < 0.001$ } validating statistical significance. See table 25, 26 and 27 for the model summary table.

H₁₀ Boycott and whistleblowing intention

The variable boycott demonstrated a significant positive relationship with whistleblowing intention { $\beta = 0.262$, $p < 0.001$ } with accepted collinearity statistics of Tolerance = 0.542, VIF = 1.845}. This particular result indicates that consumers who intend to boycott food companies engaged in unethical food practices are more inclined to also report unethical practices most likely. Both behaviours signify proactive consumer responses to corporate misconduct.

Further signifying that consumers who engage in one form of activism are more likely to engage in others.

H₁₁ Brand Trust and whistleblowing intention

Brand trust in this study has highlighted a significant positive relationship with whistleblowing intention { $\beta = 0.256$, $p < 0.001$ } with no multicollinearity concerns {Tolerance = 0.489, VIF = 2.045}. This can be interpreted as higher brand trust is associated with greater whistleblowing intention. Furthermore, it indicates that consumers who generally trust brands feel betrayed when fraud occurs and are therefore more motivated to report unethical practices.

H₁₂ Negative word of mouth and whistleblowing intention

Negative word of mouth demonstrated the strongest relationship with whistleblowing intention in this model. However, this hypothesis was tested using two related indicators being the frequency of discussing unethical practices in detail { $\beta = 0.570$, $p < 0.001$ } and talking about unethical practices more than food topics { $\beta = 0.417$, $p < 0.001$ }.

It is worth noting that both indicators act as significant predictors of whistleblowing intention in consumers. Suggesting that consumers who actively discuss unethical food practices with others are more inclined to formally report it.

While all other factors did not reveal any multicollinearity, negative word of mouth indicated severe multicollinearity. Tolerance values were 0.039 which was well below the acceptable threshold of

0.10. Additionally, the VIF values 25.901 which exceeds the acceptable threshold of 10.0. Also, noticeable condition index value is 28.658 which is approaching the critical threshold of 30.

It is worth noting that this indicates that the two negative word of mouth indicators are highly overlapping and essentially measure the same underlying construct. While the overall model remains robust and the predictors individually significant. It is important to note at this point that the individual regression coefficients should be interpreted with caution.

Regardless of the multicollinearity issue, the key findings remain valid, negative word of mouth is a strong predictor of whistleblowing intention.

In conclusion the model explains 36.8% of variance in whistleblowing intention representing medium to large effect size. With negative word of mouth attaining the strongest effect. This further suggests that whistleblowing is embedded within a broader pattern of consumer activism and communication behaviours.

4.3 Factor analysis

What is factor analysis? Factor analysis is a statistical method that researchers have used to understand the relationship between variables and the need to reduce data into practical dimensions. The need to reduce data into practical dimensions is to make it easier to interpret, reduce data complexity etc.

According to Tabachnick & Fidell {2019}, factor analysis is used to discover patterns of correlations among the variables in the study. Factor analysis is comprised of two main factors exploratory factor analysis and confirmatory factor analysis. It was key for the researcher to conduct a factor analysis because the survey used to obtain data contained 46 survey items. The factor analysis test will help reduce these factors which will, in turn, ensure interpretation and analysis are manageable. This is further supported by Hair et al., {2019} who suggest that factor analysis is vital in research that comprises of large data sets, to enable the condensation of the data sets without losing their context. The first step in factor analysis will be the Kaiser-Meyer- Olkin measure test and the Bartlett's test of sphericity.

❖ Kaiser- Meyer- Olkin Measure test- this statistical test is primarily used in the context of factor analysis. The aim of the Kaiser- Meyer- Olkin Measure {KMO-MSA} is to recognise the appropriateness of data for factor analysis by understanding the correlation among the variables. It is worth noting that the KMO-MSA statistic ranges from 0-1. If the KMO-MSA is higher this entails the data is appropriate for factor analysis and if the KMO-MSA is lower this means that

the data is not appropriate for factor analysis. After all the necessary clean-up of the data, the data was analysed to obtain KMO-MSA, and these are the results obtained

Kaiser- Meyer-Olkin		.946
Measure of Sampling Adequacy		
Bartlett's Test of Sphericity	Approx. of chi-square	26606.537
	Df	741
	Sig.	.000

From this table, the KMO-MSA value is .946 which is considered high. This means the data obtained in the study is appropriate for factor analysis. According to Sarstedt & Mooi {2014}, Kaiser- Meyer-Olkin Measure {KMO-MSA} values can be interpreted as follows: values discovered below 0.5, between 0.5 and 0.6, and values in the range of 0.6 and 0.7 are considered low. This means that the variables in question do not share a common factor and may not necessarily be suitable for factor analysis. Values in the range of 0.7-0.8 are considered good according to Sarstedt & Mooi {2014}.

Additionally, Sarstedt & Mooi {2014} suggest that values above 0.8 are considered good and worthy of factor analysis. With this in mind, the researcher obtained a value of 0.940 which is above 0.8 which entails the factors are appropriate for factor analysis. This also entails that the value of 0.940 is revealing an excellent sampling adequacy.

Notable researchers such as Gerou {2022} and Schukat et al. {2020} conducted research and obtained Kaiser- Meyer- Olkin Measure {KMO-MSA} values of 0.832 and 0.872 respectively. Which indicates good values appropriate for factor analysis. On the same token, Fall {2023} suggest that Kaiser-Meyer- Olkin Measure {KMO-MSA} values above 0.5 indicate that the researcher can continue with the factor analysis of the research. However, values below 0.5 suggest that factor analysis may not be appropriate for the data obtained. In the table above we can note Bartlett's test of sphericity, this

test identifies if the variables are unrelated. In this study the approximate chi-square is 26606.537 with 741 degrees of freedom and a significance level of 0.000 indicates that the null hypotheses can be rejected. These results indicate a significant correlation among all the variables in the research, in turn justifying the use of factor analysis. This result is in line with a study conducted by Tesfazghi et al who obtained Bartlett's test of $p \leq 0.001$ which indicated that data was fit for factor analysis.

It is key to understand that conducting the KMO-MSA test is significant in research before one can conduct complex statistical tests such as Explanatory factor analysis or confirmatory factor analysis. From the results obtained above it is vital to note that the researcher went ahead with factor analysis because the data met the statistical requirements. It was key that the data collected met the statistical requirements because the study involves the interpretation of crucial data that will be used in decision-making. It is worth reminding at this stage that the study aims to understand consumers' intention to reveal unethical food practices. Performing this initial statistical tool enables us to understand how the variables used in this study are strongly correlated. The results overall from this research will provide various stakeholders with key information on how they can prevent food fraud.

4.3 Exploratory Factor Analysis (EFA)

Exploratory factor analysis is a multivariate statistical test used to understand the key relationship between the variables in the research. This tool is used to discover latent constructs that explain the correlations among the variables in the research. For example, a study conducted by Rasan & Azic {2021} used exploratory factor analysis to understand the relationship between the factors related to student's memorable conference experiences. With that in mind, we can note that the researcher of this study wants to understand the relationship between whistleblowing factors in preventing food fraud from the consumer's perspective. For this reason, using EFA will help the researcher understand this correlation. Principal component analysis is used for this study mainly because it is centred on maximizing the variance described.

A six-factor solution was discovered and deemed the best fit with an 87.69% total variance.

These factors are

- Ethical responsibility- this factor consists of items such as peer influence, and an individual's duty to report wrongdoing. In this factor items include 'I am likely to blow the whistle because

of my sense of moral obligation’, ‘I am confident to speak out about unethical practices’, ‘I am likely to blow the whistle because of peer pressure’

- Brand Loyalty and Activism- this factor reveals brand pleasure and boycott behaviour. The items of this factor comprise of ‘ my preferred brand never disappoints the quality of its product’, ‘I intend to boycott this brand’
- Barriers to whistleblowing- this factor includes challenges a whistleblower might face with regard to reporting unethical practices. Items of this factor include ‘I am likely not to blow the whistle if the firm hinders reporting wrongdoing’, I am very likely to encounter retaliation by the company’
- Social factors- this factor focuses on the social norms of an individual. This factor contains the following items: ‘ I am more likely to blow the whistle because my family and friends will be proud of me’
- Regulatory compliance- this factor focuses on the laws and policies governing the reporting of wrongdoing. Items in this factor include ‘I am more likely to blow the whistle because of the Food and Safety Act’
- Unethical practices- under this factor items focus on the nature of the wrongdoing. Items in this factor include

Table 2 EFA Pattern Matrix

Factor	Item	Loading
Ethical Responsibility	I am likely to blow the whistle because of my sense of moral obligation	0.80
	I am likely to blow the whistle because it's my duty	0.79
	I think internal reporting has shown to be less effective hence continuous food practices	0.71

	I am likely to speak out about unethical food practices	0.78
	I am more likely to blow the whistle because I have immunity to retaliation	0.77
	I am likely to blow the whistle because I have the mental ability to think effectively and efficiently	0.81
	I am confident in speaking out about unethical food practices effectively in reporting wrongdoing	0.80
	I am more likely to blow the whistle because I have the necessary tech skills	0.78
	I am likely to blow the whistle to help someone else by reporting unethical food practices	0.70
	I am likely to blow the whistle due to contamination in food production	0.580

Brand Loyalty and Activism	My preferred brand never disappoints the quality of its products	0.84
	My preferred brand guarantees my satisfaction	0.85
	I am confident about my	0.84

	preferred brand	
	My preferred brand meets my highest expectations all the time	0.84
	I am likely to feel guilty if I buy this brand	0.81
	I am likely to feel better about myself if I manage to boycott the brand	0.85
	I am likely to boycott this brand	0.85
	I intend to boycott this brand	0.84
Barriers to whistleblowing	I am very likely to blow the whistle because of peer pressure	0.51
	I am very likely to encounter challenges in the process of reporting unethical food practices	0.84
	I am likely to not blow the whistle if the firm hinders reporting of wrongdoing by not providing adequate reporting channels	0.85
	I am very likely to encounter retaliation by the food companies	0.88

	I am not likely to blow the whistle despite thinking effectively about reporting the wrongdoing	0.79
	I think reporting of unethical food products is likely to be ineffective	0.79
Social support	I am likely to blow the whistle because I pay close attention to negative information concerning food production	0.54
	I am likely to not blow the whistle because I tend to think in great depth about negative feedback concerning food	0.53
	I am more likely to blow the whistle because I know my family would be proud of me	0.69
	I am more likely to blow the whistle because I know my friends would be proud of me	0.69
	I am more likely to blow the whistle because I know my co-workers would be proud of me	0.70
	I am likely to not blow the whistle because reporting unethical food production will prevent harm to the firm	0.52
Regulatory compliance	I am likely to blow the whistle because the Food and Safety Act	0.92

	has been created in an ethical and normative framework	
	I am likely to blow the whistle because the Food and Safety Act has been created to encourage reporting of unethical food practices	0.95
	I am likely to blow the whistle because the Food and Safety Act has been legitimately created and should be obeyed	0.95
Unethical practices	I am not likely to blow the whistle due to the wrongful substitution of low-quality ingredients in the production of food	0.75
	I am likely to blow the whistle because of theft in food production	0.75
	I am likely to blow the whistle because of the mis presentation of food	0.75

The use of EFA in this study is justified on the following reasons. Firstly, this research signifies an unprecedented theoretical integration, by combining factors from whistleblowing triangle, theory of planned behaviour and factors considered outcome variables. According to Hair et al.,{2019} and Worthington and Whittaker {2006} they clearly recommend EFA when established factors are applied to new factors or when combining multiple theoretical frameworks. Additionally, this research contains key context transfer from organisational to consumer fields. This establishes that concepts

supported in organisational domains often establish differently in consumer domains { Shaw et al., 2016}. This is further justified by Alleyne et al., {2013} that suggests that theory of planned behaviour's subjective norms factor works differently in consumer contexts vs organisational contexts. Lastly, EFA functioned as a complementary validation procedure as suggested by Boateng et al., {2018}. The research incorporated confirmatory testing of the 12 original hypotheses followed by exploratory analysis. It can be noted that this dual approach significantly aligns with MacKenzie et al., {2011} for theory integration research.

It is worth noting that this study did not replace any variables. The study tested the 12 hypothesis and the EFA was conducted as supplementary analysis. With reference to potential measurement quality, comprehensive validation procedures established good measurement quality. It is worth noting that all constructs achieved a Cronbach's $\alpha > 0.70$, pilot testing { n=30} acknowledged no problematic items and the sample size of 513 exceed recommendations suggested by Nunnally {1978}. The development of a different factor structure reveals genuine contextual differences rather than measurement errors

4.4 Confirmatory Factor Analysis (CFA)

After performing exploratory factor analysis and obtaining a good model the researcher then went ahead and used AMOS to perform confirmatory factor analysis. The Confirmatory factor analysis is another statistical tool being used in this research to answer the research questions. This test is used to understand if the variables align with the hypothesis. For example, if the researcher creates a hypothesis stating that whistleblowing intention is related to financial incentives and peer pressure. The CFA test will enable us to establish if this supports this hypothesis. According to Byrne {2010}, confirmatory factor analysis makes sure that the measurement model is empirically and theoretically good.

From our research, it is worth noting that the convergent validity was attained at a high significance level of 0.5 { $p < 0.001$ }. This indicates a strong convergent validity, meaning the credibility of the model created by the researcher is reliable and can be used for future research. Additionally, the AVE values obtained for each construct were all higher than 0.50.

Table 3 CFA Model Fit

Fit Index	Value	Threshold
CFI	0.93	> 0.90
TLI	0.91	>0.90
RMSEA	0.06	<0.08
Chi-Square/ df	2.45	<3.00

It is worth reminding that the Confirmatory Factor Analysis is used to authenticate the constructs and relationships from the Exploratory Factor Analysis. Additionally, it is used to determine validity. The table above comprises of vital information that influences researchers in improving their models to provide better validity and accuracy.

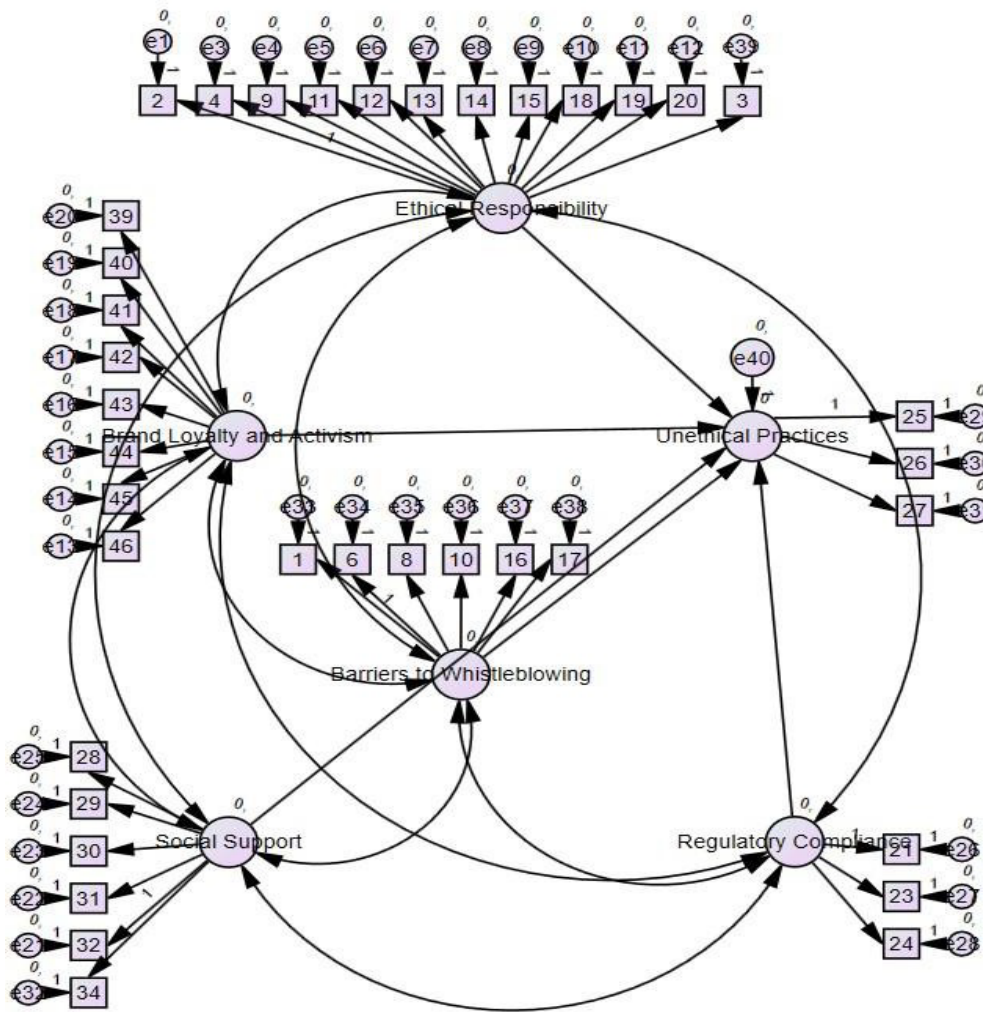
For example, the Comparative Fit Index {CFI} has a value of 0.93 which is higher than the threshold of 0.90. According to Disabato et al., 2018 values of CFI range between 0 to 1. As can be seen from the above table the research has a CFI of 0.93 which is deemed a good fit {Disabato et al., 2018}. Similarly, to the CFI it can be noted that TLI ranges between 0 to 1. In this study, the TLI is 0.91 which is deemed a good fit and supported by {Disabato et al., 2018}.

The next indices to discuss is the Root Mean Square Error of Approximation which focuses on how well the model approaches the population covariance matrix. For RMSEA values indicating less than 0.06 are considered a good fit and values up to 0.08 are considered an acceptable fit according to Balsamo et al., 2015. In the same manner, the Root Mean Square Error of Approximation { RMSEA} is 0.06 which is in line with Balsamo et al., 2015 and deemed a good fit.

4.5 Structural Equation Modelling {SEM}

This is another statistical model that the researcher has used to understand the complex relationships between indicators and construct variables. It involves elements of factor analysis and regression analysis to enable the testing of the hypothesis.

Path coefficients in SEM focus on the relationships between variables in the hypothesised model. This allows us to test the hypotheses which will enable us to address the research objectives.



From the figure above the path analysis indicates and creates the following hypotheses.

H_1 : Ethical responsibility is positively and significantly related to brand loyalty.

H_2 : Barriers to whistleblowing are negatively and significantly related to Brand loyalty.

H_3 : Ethical responsibility is positively and significantly related to social support.

H_4 : Barriers to whistleblowing are positively and significantly related to social support.

H_5 : Social support is positively and significantly related to brand loyalty.

H_6 : Barriers to whistleblowing are positively and significantly related to ethical responsibility.

The following results are attained.

Table 4 Hypotheses Analysis

	Paths	Estimates	SE.	CR.	P	RESULTS
<i>H</i> ₁ :	Ethical responsibility > Brand loyalty	0.125	0.034	3.676	<.05	<i>H</i> ₁ : Accepted
<i>H</i> ₂ :	Barrier's to whistleblowing > Brand Loyalty	-0.089	0.042	-2.101	0.036	<i>H</i> ₂ : Rejected
<i>H</i> ₃ :	Ethical responsibility> social support	0.219	0.051	4.336	<.05	<i>H</i> ₃ : Accepted
<i>H</i> ₄ :	Barriers to whistleblowing> social support	0.196	0.038	5.102	<.05	<i>H</i> ₄ : Accepted
<i>H</i> ₅ :	Social support> brand loyalty	0.565	0.042	13.456	<.05	<i>H</i> ₅ : Accepted
<i>H</i> ₆ :	Barriers to whistleblowing >	0.066	0.036	1.822	0.068	<i>H</i> ₆ : Rejected
	ethical responsibility					

From the table above we can gather the following information, ethical responsibility is positively and significantly related to brand loyalty { $b=0.125$, $p<.05$ }. Secondly barriers to whistleblowing are negatively significantly related to brand loyalty { $b=-0.089$, $p<.05$ }. Thirdly ethical responsibility is

positively significantly related to social support { $b=0.219$, $p<.05$ }. Barriers to whistleblowing is positively and significantly related to social support { $b=0.196$, $p<.05$ }. It can be noted that social support is positively and significantly related to brand loyalty { $b=0.565$, $p<.05$ }. Lastly, barriers to whistleblowing are positively but insignificantly related to ethical responsibility { $b=0.066$, $p>.05$ }. With this information in mind, we accept H_1 , H_3 , H_4 , and H_5 . We further reject H_2 and H_6 .

4.1.1 Ethical Responsibility and Brand Loyalty

From the information provided we can note that the statistical tests highlighted Ethical responsibility has a $b=0.125$, $p<.05$. With a coefficient of 0.125 this indicates that as ethical responsibility increases, so does brand loyalty of consumers. However, it is worth noting that despite the increase of both ethical responsibility and brand loyalty simultaneously, the effect size is small. From the results provided it is worth noting that when companies display or exhibit ethical responsibility, consumers in turn are more inclined to assume that they conduct ethical practices in their goods and services. For this reason, they are less likely to engage in whistleblowing behaviour. Our results indicate that the p-value is less than 0.05, this means that the relationship is statistically significant and provides robust evidence that ethical responsibility in our study has a real impact on brand loyalty in the context of understanding consumer whistleblowing intention. The author suggests that consumers who trust a brand are less likely to report unethical or harmful practices unless provided with evidence of wrongdoing. On the other hand, if a firm fails to support or maintain ethical responsibility, they are at risk of losing consumer trust. This will result in consumers engaging in reporting unethical or harmful practices. Our results support researchers such as Fan et al., 2020; Chiu et al., 2019 that suggest that companies operating or conducting ethically are less likely to encounter whistleblowing reports.

4.1.2 Barriers to whistleblowing and loyalty

The information provided above, suggests that there is a negative relationship between barriers to whistleblowing and brand loyalty in this study. Barriers to whistleblowing may include a lack of adequate reporting channels, fear of retaliation, and consequences about the impact of reporting unethical food practices. Once a consumer is faced with these barriers, they are more likely to lose loyalty to the brand. A consumer will start to question why the firm has put all these barriers in place, they will feel that the company does not want to be transparent, and they may be potentially hiding their unethical practices. As a result, this suggests that as barriers to whistleblowing increase, consumer loyalty to a particular brand will decrease. With a P- value less than 0.05 it is evident that

the relationship between barriers to whistleblowing and brand loyalty is not by chance. This significantly indicates that barriers to whistleblowing have an impact on brand loyalty with regard to understanding consumer whistleblowing intention.

4.1.3 Ethical responsibility and social support

The table above indicates that there is a significant positive relationship between ethical responsibility and social support with regard to understanding consumer whistleblowing behaviour. Consumers with a high sense of ethical responsibility in the United Kingdom are considered to receive a great amount of social support if they decide to report unethical practices. This simply means that consumers that are ethically aware and feel it is their moral obligation to report unethical food practices, tend to receive a huge amount of support from family and friends. Our results indicate that the p-value is less than 0.05, this means that the relationship is statistically significant and provides robust evidence that ethical responsibility in our study has a real impact on social support in the context of understanding consumer whistleblowing intention.

4.1.4 Barriers to whistleblowing and social support

As mentioned above the results obtained indicated that social support plays a key role in understanding consumer whistleblowing behaviour in the United Kingdom. The researcher indicates that a consumer's ethical responsibility is positively and significantly related to social support. On the same token barriers to whistleblowing in the United Kingdom are positively significantly related to social support. This suggests that an increase in barriers to whistleblowing will have an increase in social support for the consumer. Once a consumer is faced with barriers to reporting unethical or harmful food practices in the United Kingdom, they will seek validation or support from family, friends, colleagues etc. Our results indicate that the p-value is less than 0.05, this means that the relationship is statistically significant and provides robust evidence that barriers to whistleblowing in our study have a real impact on social support in the context of understanding consumer whistleblowing intention.

4.1.5 Social support and brand loyalty

Results obtained indicate that there is a positive relationship between social support and brand loyalty with regard to understanding consumer whistleblowing behaviour. Consumers who have great social support will tend to show higher brand loyalty. It is worth noting that food brands that have strong social networks and positive consumer engagement may maintain loyal consumers. Brand loyalty from consumers in this case would not affect their loyalty even if the firm faces ethical

concerns. Our results indicate that the p-value is less than 0.05, this means that the relationship is statistically significant and provides robust evidence that social support in our study has a real impact on brand loyalty in the context of understanding consumer whistleblowing intention.

4.1.6 Barriers to whistleblowing and ethical responsibility

The positive but insignificant relationship between barriers to whistleblowing and ethical responsibility indicates that barriers to whistleblowing do not strongly have an impact on consumers' ethical responsibility. From this, we can note that even when consumers face barriers to reporting unethical practices, their sense of ethical responsibility will not change. Our results indicate that the p-value is less than 0.05, this means that the relationship is not statistically significant and provides robust evidence that barriers to whistleblowing in our study do not have a real impact on ethical responsibility in the context of understanding consumer whistleblowing intention

5. Discussion

This chapter of the thesis will cover the interpretation and analysis of the findings obtained during the research. In this chapter the findings are explained, their implications and how these findings contribute to the existing literature. Firstly, a summary of the findings will be explained to address the research question. Followed by a comparison of our findings with findings from existing literature.

5.1 Summary of key findings

Returning briefly to the aim of this research which is to understand consumer whistleblowing intention with regards to food fraud in the United Kingdom. The research received a total of 514 respondents of which 221 respondents were male and 291 were female respondents. From the data obtained, we can note key findings that contribute to the whistleblowing literature, food fraud literature and consumer behaviour literature.

The results of this study reaffirm the theoretical propositions of TPB and the development of the Whistleblowing Triangle. Attitude, subjective norms, and perceived behavioural control significantly influenced whistleblowing intentions, aligning with TPB. Meanwhile, pressure and rationalization emerged as critical factors from the Whistleblowing Triangle, consistent with previous studies on ethical decision-making.

Regarding responses received, the researcher first compared the demographic factors to consumer whistleblowing intention items. The demographic factors include gender, age, ethnicity, educational background, annual income, food shop spending and how many times they purchase food in a month. Additionally, the consumer whistleblowing intention items comprise of the following statements I am likely to blow the whistle by providing the public with information; I am likely to blow the whistle to appropriate authorities outside the firm; I am likely to blow the whistle to respective authorities outside the firm.

In terms of gender, females are more inclined to report unethical food practices in the United Kingdom compared to men. This study discovered that 171 females are more likely to report wrongdoing to appropriate authorities outside the firm. While only 93 males are inclined to report unethical food practices to appropriate authorities outside the firm. It is worth noting that the results

show a clear indication that females in the United Kingdom would report unethical food practices. This is further illustrated by the difference between males reporting to the public compared to females as follows; 90 males would report unethically produced products and 172 females would report to the public unethical food practices. Let us now consider the age of our respondents in understanding consumer whistleblowing intention. A total of 196 respondents between 25 and 34 years old suggested that they would be inclined to report unethical food practices to the public. With 88 respondents more likely to report to the public and 34 respondents least likely to report unethical food practices to the public. The result of our study indicates that consumers in the age range of 25 and 34 are more inclined to take part in reporting unethical or harmful food practices in the United Kingdom. Referring to Table {6} we can note that respondents between 18-24 do not have a keen interest in reporting unethical practices compared to other respondents. This study highlights that the age groups that are more keen on reporting unethical food practices in the United Kingdom are between 25 and 44. However, despite these consumers indicating their interest in reporting unethical food practices, it has been discovered that 9 respondents between the ages of 35 and 44 suggest that they would not engage in reporting wrongdoing externally. This adds key insights to the literature because we can tell that the majority of consumers between the ages of 25 and 44 can make a difference in preventing unethical food practices in the United Kingdom. Another important aspect of understanding consumer whistleblowing intention is the educational background of respondents. With the information obtained, we can note that consumers with a postgraduate degree provided this research with key insights with regards to providing the public with information pertaining to unethical food practices. Highlighting a total of 202 respondents suggesting that they would engage in reporting unethical food practices to the public to address food fraud. Contributing to the literature, our findings suggest that postgraduate respondents are more inclined to report unethical food practices compared to respondents with A-Level/ BTEC levels 1,2,3 in the United Kingdom.

In terms of ethnicity of consumers in this study to understand their intention to report wrongdoing. Respondents from Black African/ Caribbean and Black British are more likely to report unethical practices to the public, respective authorities outside the firm and appropriate authorities outside the firm. The results obtained indicate that 289 respondents are more likely to engage in external whistleblowing. While 52 respondents indicated that they would not take part in reporting unethical food practices externally in the United Kingdom. Referring to one of the demographics used in this study; the employment of consumers to understand their whistleblowing intention. Results highlight

that 508 respondents with full-time jobs are more likely to report unethical food practices compared to other employment statuses such as part-time or self-employed. Let us now consider the annual income of respondents in this study to gain an understanding of their intention to report unethical food practices. Referring to Table 10 in the appendix, 375 respondents with an annual income between £10,000 and £49,999 suggest that they would take part in reporting unethical food practices externally. This means that they are more likely to report wrongdoing to appropriate authorities outside the firm and provide the public with information, and respective authorities outside the firm. It is worth noting that consumers in this income range had the highest respondents indicating interest in reporting unethical food practices. However, 142 respondents with the same income suggest that they will not be inclined to engage in any activities that require them to blow the whistle externally. Unlike consumers with an annual income between £10,000 and £49,999, our findings suggest individuals with the lowest income between 0-£9,999 are not inclined to take part in reporting unethical food practices. Results show that only 40 respondents are likely to report wrongdoing externally. In the same manner, 80 respondents have suggested that they are least likely to report unethical practices externally. A key highlight with regards to consumers' annual income is one respondent who suggests their neutral about reporting unethical practices to the public. This may suggest that they may or may not have an interest in reporting unethical food practices overall in the United Kingdom.

In terms of the number of times consumers buy food in a month is a demographic factor. We can note that respondents who shop more than three times a month are more inclined to report unethical food practices to external parties of the organisation.

It is worth noting that 241 of these respondents are more inclined to report unethical food practices. Despite 241 respondents suggesting their interest in addressing unethical food practices 31 respondents in the same category {shopping more than three times} indicated that they would not engage in external reporting of unethical activities. On the other hand, 102 respondents who shop only once a month suggest that they are likely to engage in external whistleblowing. With 34 respondents suggested that they are least likely to take part in external whistleblowing to address food fraud in the United Kingdom.

Having addressed the comparison of demographic factors to consumer whistleblowing intention, the researcher will now move on to discuss the analysis of the results in order to test the hypotheses created using statistical tools. As mentioned in Chapter 3, SPSS and Amos were used in this research by the researcher to understand consumer whistleblowing intention. In the case of

understanding if the factors of our study are appropriate Kaiser- Meyer- Olkin Measure {KMO-MSA} value is obtained, in this study a value of 0.940 is attained. It is worth noting that the value obtained is above 0.8 which entails the factors are appropriate for factor analysis. Additionally, key features indicate that the value of 0.940 is revealing an excellent sampling adequacy in our research. In this study the approximate chi-square is 26606.537 with 741 degrees of freedom and a significance level of 0.000 indicates that the null hypotheses can be rejected. These results indicate a significant correlation among all the variables in the research, in turn justifying the use of factor analysis. Other notable factors such as the comparative Fit Index {CFI} have a value of 0.93 which is higher than the threshold of 0.90. According to Disabato et al., 2018 values of CFI range between 0 to 1. As can be seen from the previous chapter the research has a CFI of 0.93 which is deemed a good fit {Disabato et al., 2018}. Similarly, to the CFI it can be noted that TLI ranges between 0 to 1. In this study, the TLI is 0.91 which is deemed a good fit and supported by {Disabato et al., 2018}. Additional information such as Root Mean Square Error of Approximation which focuses on how well the model approaches the population covariance matrix is obtained in this study. For RMSEA values indicating less than 0.06 are considered a good fit and values up to 0.08 are considered an acceptable fit according to Balsamo et al., 2015. In the same manner, the Root Mean Square Error of Approximation {RMSEA} is 0.06 which is in line with Balsamo et al., 2015 and deemed a good fit. After conducting an exploratory factor analysis and confirmatory factor analysis. The following hypotheses are created to understand consumer whistleblowing intention in the United Kingdom.

H₁: Ethical responsibility is positively and significantly related to brand loyalty.

From the information provided in Chapter 4 we can note that the statistical tests highlighted Ethical responsibility has a $b=0.125$, $p<.05$. With a coefficient of 0.125 this indicates that as ethical responsibility increases, so does brand loyalty of consumers. In addition, it suggests that there is a negative relationship between barriers to whistleblowing and brand loyalty in this study. Once a consumer is faced with these barriers, they are more likely to lose loyalty to the brand. With regards to ethical responsibility positively and significantly related to social support in understanding consumer whistleblowing intention. Our results suggest that consumers with a high sense of ethical responsibility in the United Kingdom are considered to receive a great amount of social support if they decide to report unethical practices. On the same token barriers to whistleblowing in the United Kingdom are positively significantly related to social support.

This suggests that an increase in barriers to whistleblowing will have an increase in social support for the consumer

H₁: Ethical responsibility is positively and significantly related to brand loyalty. The results indicate a moderate positive effect, suggesting ethical responsibility is a key predictor of brand loyalty in consumer whistleblowing with regards to food fraud. The findings highlight that consumers that have a higher level of ethical responsibility will also have a greater loyalty towards food brands. It is worth noting that the moderate effect size implies that while ethical responsibility is key in this study it works within a system of influences on brand loyalty. The relationship points out that consumers who feel morally obligated to reporting unethical practices also tend to create stronger attachments to brands they perceive as ethical. This in return creates a coherent pattern of ethical consumer behaviour. Amoako et al. {2021} suggests that perceived firm ethicality positively predicts brand loyalty through corporate social responsibility and green market. Findings from the research conducted by Amoako et al., {2021} strongly align with the findings discovered in this research. Similarly, Manimalar and Sudha {2016} established a direct positive link between corporate social responsibility components on consumer trust and brand loyalty. Furthermore, key researchers such as Ma et al., {2023} discovered that corporate social responsibility significantly increases brand loyalty. From then above studies conducted or findings are strongly aligned and contribute to the literature. The theoretical foundation of *H₁* is further supported by Reynolds {2024}. The literature identifies perceived value, emotional attachment and trust as mediating methods between ethical perceptions and loyalty. Therefore, signifying a positive ethicality to loyalty effect and supporting the theoretical foundation of hypothesis one in this study. Although most studies focus on general corporate social responsibility and ethical perceptions, this study has extended the relationship to exactly ethical responsibility in food fraud contexts. As a result, this is demonstrating the robustness of the ethicality and loyalty relationship across various ethical domains.

Within the theory of planned behaviour framework, the relationship between ethical responsibility and brand loyalty supports the attitude factor. Ethical responsibility in this case signifies a stable moral attitude that has an impact on behavioural intentions and outcomes. The findings of this research show how moral attitude extend beyond specific behaviours to effect broader consumer brand relationships, as result expanding the traditional space of theory of planned behaviour applications. Lastly, this study extends existing knowledge by demonstrating that ethical

responsibility is not just a predictor of reporting intentions but also a determinant of brand relationships in the contexts of food fraud. Findings of this research greatly contribute to understanding how moral characteristics influence consumer behaviour past specific ethical decisions to include broader consumption as well as brand loyalties.

H₂: Barriers to whistleblowing are negatively and significantly related to Brand loyalty.

The second hypotheses was rejected despite presenting a negative coefficient. While the relationship shows that it is in the predicted direction, it does not meet the rigorous significance standard developed for the study hence it is rejection. It is worth noting that the rejection of this relationship between barriers to whistleblowing and brand loyalty is more complicated than initially hypothesised. The findings suggest that a consumer's loyalty to brands may not be straightforwardly influenced by their perceptions of reporting barriers. It is important to point out that the literature currently does not provide direct empirical tests with regards to whistleblowing barriers as predictors of brand loyalty. Nevertheless, indirect evidence proposes plausible pathways through which barriers might have an impact on loyalty. With regards to indirect support of this hypotheses, relevant studies conducted by researchers such as Smith and McElwee {2021}, Manning and Soon {2016} suggest that reporting barriers provide an undetected unethical behaviour which then undermines brand reputation and consumer trust. This proposes an indirect pathway. On the contrary the food standard agency {2020} suggests that whistleblowing barrier do not have an impact on consumer attitude toward brands. According to Food standard agency {2020} consumers may separate their perceptions of reporting barriers from their brand evaluations.

H₃: Ethical responsibility is positively and significantly related to social support.

For this study ethical responsibility is positively and significantly related to social support { $\beta = 0.219, p < 0.05$ }. The results discovered that consumers with higher levels of ethical responsibility are more likely to receive and perceive social support for their engagement in ethical actions. It is worth noting that this finding is key in understanding how an individual's moral characteristics have an impact on social network dynamics and support mechanisms with regard to consumer whistleblowing. This positive significant relationship portrays that ethical responsibility functions not only with regards to individual moral trait, but it also functions as a social signal that activates support networks. This means consumers that have a strong ethical responsibility are more likely to be surrounded in social networks that will validate, encourage, and support ethical behaviour. Creating a powerful cycle where ethical orientations attract social support resulting in the strengthening of

ethical behaviour and intentions. The positive relationship between ethical responsibility and social support is supported by social identity theory. According to Tajfel and Turner {1979} part of an individual's identity is a result from group memberships and social categories. For example, consumers that pose with strong ethical responsibility may be part of ethically oriented social groups and communities, which will a great social support of likeminded individuals. This creation of likeminded individuals creates strong bonds that facilitate ethical actions such as whistleblowing. Our findings are in line with a study conducted by Beauchamp {2011} that suggests individuals are more likely to take part in ethical actions due to actively seeking and receiving social validation for their ethical actions.

Empirical support for this positive relationship comes from various studies. Examples include a study conducted by Hagger et al., {2020} which discovered that moral self-concept predicts social support in the context of health-related behaviour. Indicating that relationships between personal values and social support spread across different behavioural domains.

Similarly, Alleyne et al., {2013} suggests that individuals with strong moral characteristics are more likely to receive social support for ethical decisions in the contexts of organisations. With this in mind it is worth noting that the current study extends these findings to consumer whistleblowing in the context of food fraud, highlighting the robustness of the relationship.

From the theory of planned behaviour view point the relationship between ethical responsibility and social support links attitude with subjective norm component. The findings highlight that an individual's social factors and attitude are not independent but interconnected. The moral attitudes of consumers create their social environments which in turn have an impact on their behavioural intentions through normative methods. The practical implication of our findings suggests that organisations seeking to encourage consumer whistleblowing should not only focus on ethical responsibility but also put focus on the development of social support networks. This can be attained through creation of community platforms, promoting social norms, developing online communities, and facilitating peer support groups. Our findings also have an implication for understanding consumer activism. Ethically responsible consumers who receive social support are more likely to be more active with regards to ethical actions. Social support provides emotional validation, practical assistant which both enhance a consumer to act on their ethical beliefs. Furthermore, highlighting that consumers protection strategies should not only be centred around individual consumers but building and strengthening ethical consumer communities.

Lastly H_3 is strongly supported and makes key theoretical and practical contributions to the literature. Our findings highlight that ethical responsibility is not just an individual trait but a social factor that plays a key role in social networks. A reinforced cycle has been established in this study between individual moral characteristics and social support, highlighting the importance of both social contexts and personal values in ethical consumer behaviour. Our findings act as a foundation for creating key consumer protection strategies that influence social networks and community building to develop whistleblowing and ethical behaviour in the context of food fraud.

H_4 : Barriers to whistleblowing are positively and significantly related to social support.

Barriers to whistleblowing are positively and significantly related to social support, the hypothesis is supported with a significant positive relationship of $\beta = 0.196, p < 0.05$

Our findings highlight that consumers that notice greater barriers to whistleblowing also experience greater social support. Additionally, these findings challenge the usual assumptions that barriers to reporting unethical practices have a negative effect and instead establishes new phenomena where social networks respond to perceived difficulties.

It is worth noting that this positive relationship creates a novel contribution to this research. In which it challenges the typical negative assumption of barriers and uncovers the importance of social support systems. For example, if consumers are faced with barriers of reporting unethical food practices such as lack of reporting channels or uncertainty of procedures their social support networks come in and provide increased support and encouragement.

The theoretical justification of our findings is in line with stress buffering theory {Cohen & Wills, 1985}. The stress buffering theory suggests that social support will increase if an individual is faced or positioned in a stressful situation. In this case perceived barriers to whistleblowing may create psychological stress for consumers who want to report unethical food practices but feel limited. In response to this stress, social networks come into play by offering practical advice and emotional reassurance. Similarly social coping theory is in line with our findings. According to Thotis {1986} social coping theory suggests that individuals seek support from others to address stress. Which is highlighted in our finding that consumers facing barriers to reporting unethical practices may discuss their concerns with family and friends {social support} who will respond with encouragement. Resulting in social coping establishing barriers into challenges that can be addressed through social resources.

Furthermore, our findings are supported by research conducted by Van Zomeren et al., {2008}. Their research indicates that barriers act as a facilitator for collective mobilisation. Which means when individuals are faced with barriers, they may come together collectively to overcome these barriers. In the context of consumers, the perceived barriers to reporting unethical practices may encourage consumers to seek solidarity with others in the same situation, leading to social support and collective action.

It is worth noting that this value $\beta_3 = 0.196$ despite being significant highlights that barriers are not the primary force of social support. Other factors as we have seen in this study such as ethical responsibility also contribute to social support. The moderate effect further suggests that barriers to whistleblowing activate support mechanisms, but they do not fully define support levels. Highlighting that social support has an impact on both individual characteristics in this case ethical responsibility and contextual challenges such as barriers.

This finding creates consumer protection policy and practice through the following ways: providing communication strategies that acknowledge reporting barriers while emphasizing encouragement and support for consumers, organisations should be able to support consumer advocacy groups and consumer protection agencies should investigate creating peer support systems that will offer consumers facing barriers to reporting support.

From the perspective of theory of planned behaviour, our findings reveal a key detail between perceived behavioural control and subjective norms. In this case barriers to whistleblowing reduce perceived control and activate social support which in return strengthens subjective norms. This suggests that the components of theory of planned behaviour are not independent but interact dynamically. For example, when one component is weakened, another may strengthen to maintain behavioural intentions.

It is important to note that the positive relationship between barriers and social support may only be vital to consumers who already have a strong support network. Consumers with weak social ties may experience barriers and not have the adequate support which would lead to avoidance rather than mobilisation. The author suggests further research in understanding how social network characteristics moderate the relationship between barriers and support. Additionally, the type of barriers may have an impact on social support networks. Further research might want to distinguish between different types of barriers and their differential effects on social support. For example, some barriers such as procedural may activate support more than others.

In conclusion the positive relationship between barrier to whistleblowing and social support represents a significant theoretical contribution. It highlights that barriers to whistleblowing do not always portray a negative effect but in this case activates social support mechanism. This key finding challenges the uniform negative perspectives around barriers and further highlights the adaptive capacity of social networks. The relationship establishes the importance of social support in ethical consumer behaviour and reveals a foundation for developing support consumer protection strategies.

H₅: Social support is positively and significantly related to brand loyalty.

In terms of social support positively and significantly related to consumer whistleblowing intention. There is a positive relationship between social support and brand loyalty with regard to understanding consumer whistleblowing behaviour. Consumers who have great social support will tend to show higher brand loyalty. It is worth noting that food brands that have strong social networks and positive consumer engagement may maintain loyal consumers

Findings in this study indicate that social support is positively and significantly related to brand loyalty. This result is the most substantial effect observed in this study $\beta = 0.565, p < 0.05$, highlighting that social support is the strongest predictor of brand loyalty among all the variables examined in this study. This finding acts as a key contribution to understanding consumer brand relationships, revealing that brand loyalty is key in social contexts rather than on individual level contexts.

The extremely strong relationship reveals that consumers loyalty to food brands is heavily influenced by social support networks. Our results indicate that brand loyalty is not simply a product of individual satisfaction but is significantly constructed and reinforced through social interactions and social support.

The theoretical foundation of this relationship is supported by social influence theory {Kelman, 1958} and social identity theory (Tajfel and Turner 1979). Kelman (1958) suggests that an individual's attitude and behaviour is focused on compliance, identification, and internalisation. Through social networks consumers are faced with all the three factors listed by Kelman {1958}. Consumers receive validation for their brand choices {compliance}, internalise brand values that are socially reinforced {internalization} and align their brand preferences with valued group members {identification}. This social influence creates a strong and stable brand loyalty. Similarly, Tajfel and Turner {1979} suggest that consumers often make brand choices as a form of social identity and group membership. When

consumers obtain support from their networks, their brand choices become interconnected with their social identities, establishing loyalty that is resistant to competitive offerings. Resulting in the brand becoming part of social fabric that defines group membership and identity.

Furthermore, empirical support for our findings originates from multiple streams of research. Manimalar and Sudha {2016} discovered key links between social factors and brand loyalty with regards to corporate social responsibility. Highlighting that social validation enhances loyalty. On the same token Ma et al., {2023} discovered that social influence significantly impacts brand loyalty in Chinese dairy industry, especially following food safety scandals. Their findings correspond the current study's

results in the context of food fraud.

The very large effect size of $f^2 = 0.565$ signifies that social support is responsible for a substantial portion of variance in brand loyalty, more than any other variable used in this study. This finding not only uncovers that social support is a simple supplementary factor but a primary driver of brand loyalty in food fraud. The finding indicates that marketing and consumer protection strategies that do not consider social dimensions of loyalty are missing the most powerful key for influencing consumer brand relationships. The practical implications of this finding are key for brand management and consumer protection. Examples include brands investing heavily in building and supporting consumer communities where social support can flourish. Additionally, brands should look into creating opportunities for consumers to connect with each other, share experiences etc. Another key factor is consumer protection through communities, consumer protection agencies should recognize that strong support networks around ethical brands can be a powerful mechanism for maintaining food safety integrity.

With regards to theory of planned behaviour these findings suggest the powerful role of subjective norms which is social support in the shaping of behavioural outcomes {brand loyalty}. Even though theory of planned behaviour is usually a focus on behavioural intentions, this study has extended the theory by highlighting that social factors also strongly influence loyalty. Despite the strong relationship between social support and brand loyalty, this relationship also suggests a potential vulnerability. In collectivist cultures where social harmony and group consensus are highly valued and encouraged, the relationship between social support and loyalty may even be stronger. While in individualist cultures the relationship maybe moderated. These calls of cross-cultural research examining the variations to further understand the boundary conditions of the relationships.

In conclusion the strong relationship between social support and brand loyalty highlights the most substantial finding of the study. It highlights a key feature that brand loyalty is a key social phenomenon that is heavily influenced by social support networks. This finding further translates understanding brand loyalty from an individual level to a socially rooted phenomenon. Additionally, the high relationship highlights that social support should be the core focus of both brand management and consumer protection strategies. Lastly this key finding provides a foundation for creating community-oriented approaches to building brand loyalty and enhancing consumer protection especially with regards to food fraud.

*H₆*Barriers to whistleblowing are positively and significantly related to ethical responsibility.

Barriers to whistleblowing are negatively related to ethical responsibility. This hypothesis in the study was rejected as the relationship did not achieve statistical significance at the required threshold. The rejection highlights that perceived barriers to reporting unethical food practices do not significantly diminish consumers ethical responsibility contrary to the initial theoretical expectation. The establishment of the non-significant finding indicates the stability and independence of ethical responsibility as a moral characteristic. This further suggests that ethical responsibility functions as a stable moral trait that is moderately resistant to contextual barriers and obstacles. Consumers that have a strong ethical responsibility maintain their moral alignment regardless of whether they perceive barriers to acting on their ethical beliefs. This stability highlights that ethical responsibility is a personal characteristic rather than a situationally contingent attitude that fluctuates based on perceived ease of action.

The theoretical interpretation of this finding draws on moral identity theory { Aquino and Reed, 2002). Moral identity signifies the degree to which being a moral person is a central to one's self-concept. Individuals with strong moral identity, ethical responsibility is a central aspect of who they are and not a simple response to situational factors. The non-significant relationship in this study suggests that ethical responsibility captures this as a stable moral identity rather than situational moral judgements.

The practical implications of this study encourage consumer protection. From a theory of planned behaviour point of view the non-significant relationship between barriers {perceived behavioural control} and ethical responsibility { attitude } supports the theory's assumptions that theory of planned behaviour is conceptually distinct. Perceived behavioural control and attitude are independent predictors of intentions and this study confirms their independence. Barriers affect

perceived control without affecting attitude, validating the theory of planned behaviour's theoretical structure.

It is worth noting that the rejection of H_6 and the rejection of H_2 indicate that barriers have limited direct effects on stable constructs such as ethical responsibility and brand loyalty. Barriers seem to have an impact on behavioural constructs such as social support more than stable constructs. Furthermore, this pattern indicates that barrier reduction strategies should focus on allowing behaviour and activating resources rather than altering stable attitudes or relationships.

The non-significant relationship obtained in this study might be with regards to specific sample or context. Referencing back to the aim of this study which is to understand consumer whistleblowing intention with regards to food fraud in the United Kingdom. The current study examines consumers in the United Kingdom where barriers to reporting unethical practices are moderate. This might not be the case with regards to countries where barriers are extreme. This calls for future research to examine whether the relationship holds in extreme barrier conditions.

To conclude, the relationship between barriers to whistleblowing and ethical responsibility is rejected. This rejection provides key significant theoretical insights. It highlights that ethical responsibility is a stable moral characteristic that remains stable in the face of perceived barriers to whistleblowing. The finding further suggests implications for consumer protection emphasising that ethical responsibility provides a reliable foundation for ethical behaviour that does not wear down when systems are imperfect.

- **Integration of findings across hypothesis**

The supported hypotheses H_1 , H_3 , H_4 , H_5 establish the central role of social support as both an outcome predicted by ethical responsibility and barriers and a powerful predictor of brand loyalty. In this study social support appears as the pivotal construct connecting individual moral characteristics, contextual barriers, and brand relationships. On the other hand, the rejected hypotheses H_2 and H_6 establish the stability and independence of ethical responsibility and brand loyalty. It can be noted that these constructs are not directly influenced by perceived barriers, therefore suggesting they operate through different mechanism than initially hypothesized. The findings also suggest that theory of planned behaviour components is key but function in context specific ways. Ethical responsibility relates to attitude component, social support relates to subjective norms and barriers to whistleblowing relate to perceived behavioural control. On the other hand, the relationship among these components is more complex than standard theory of planned behaviour model suggests, with social support functioning as mediating and compensatory functions.

Lastly, the overall pattern created in this study suggests that effective consumer protection strategies should focus on building social support networks that can influence existing ethical responsibility and compensate for barriers. Brand loyalty is most effective through social support rather than through individual consumer brand interactions alone.

It is worth noting that this integration delivers a comprehensive foundation for both theoretical advancement and practical application in consumer protection and brand management in the context of food fraud.

Thus far, this section of the thesis has shown the factors that have an impact on consumer whistleblowing intention in the United Kingdom with regard to unethical food practices.

5.1 Key contribution

This chapter has demonstrated the key findings of our research it is now essential to highlight the key contributions to the literature. As we pointed out in the introduction to this paper the research aims to understand consumer whistleblowing intention in the United Kingdom with regards to food fraud.

Firstly, there is a vast amount of literature that has investigated internal whistle blowers and internal whistleblowing {Park and Blenkinsopp, 2009; Rothwell and Baldwin, 2007; Keenan, 1990; Jackson et al, 2011; Mansbach and Bachner, 2010; Hwang et al., 2008; Xu and Ziegenfuss, 2008}. These studies have comprised of various internal stakeholders such as nurses, accountants, internal auditors, and policemen. It has been discovered that the studies conducted above all proved whistleblowing as a successful mode of addressing wrongdoing. On the other hand, despite internal whistleblowing highlighting success in reporting wrongdoing there seems to be a lack of external whistleblowing literature.

It is worth reminding at this point that whistleblowing is used to rectify wrongdoing in a business. Vandekerchove {2006} defines whistleblowing as the act of exposing wrongdoing to respective parties outside the firm. Vandekerchove {2006} developed their definition of whistleblowing from Near and Miceli {1985} that suggests that whistleblowing is the disclosure of unethical practices to higher authorities in the organisation. From the information provided, we can note that whistleblowing is essential, however, the lack of or limited research on external whistleblowing does not give a clear indication of how powerful whistleblowing can rectify a lot of wrongdoing. Few researchers have been able to conduct whistleblowing research using external stakeholders such as Ayers and Kaplan 2005; Latan Chiappetta Jabbour and Lopes de Sousa Jabbour, 2021. It is worth

noting that researchers have not examined external stakeholders such as consumers in detail with regard to understanding whistleblowing intention. Notable research conducted in Indonesia was used to determine whistleblowing intention among consumers. It has been discovered that consumers play a key role in identifying wrongdoing and eventually reporting it {Latan Chiappetta Jabbour and Lopes de Sousa Jabbour, 2021}. However, consumers have currently been neglected in the whistleblowing literature. Therefore, the researcher contributes to whistleblowing by using consumers to understand whistleblowing intentions in the United Kingdom. This will be the first research conducted in the United Kingdom to understand consumer whistleblowing intention with regard to food fraud. It is worth noting that previous consumer research has been limited to corporate misconduct to understand consumer purchasing intention, trust, loyalty, and word of mouth {Bailey 2005}. However, this research will be different because it will be used on unethical food practices to understand how consumers can play a role in preventing food fraud.

Let us now consider the second key contribution to the literature. Addressing the use of whistleblowing models as a method to prevent food fraud in the United Kingdom. Unethical food practices are an ongoing and escalating activity worldwide. Notable examples include Chinese manufactured melamine milk {Guan et al.,2009; Jia and Jukes,2013}, wine adulteration in Italy that resulted in 23 deaths {European communities, 2009}, the mixture of olive oil and vehicle oil in Spain that resulted in 1663 deaths {Borda et al.,1998}. Unethical food practices are taking place globally as listed above likewise notable examples of unethical food practices have taken place in the United Kingdom. Examples include the horse meat scandal that took place in 2003 Smith and McElwee {2021} this scandal mainly highlights the complications of the supply chain. This is mainly due to its appearance in developed countries such as the United Kingdom. The dairy sector in the United Kingdom has faced challenges of unethical practices which have resulted in the death of some consumers.

According to Montgomery et al., 2020 a review provided adulteration and mis presentation of dairy products between 2015 and 2019. Apart from the dairy industry being affected in the United Kingdom, the Poultry industry has encountered a few unethical practices. In 2014 it was discovered that a raw chicken contaminated with *Campylobacter* was returned to the production line to proceed for consumption. This highlights a key escalating problem that needs to be addressed. As stated in the previous section, unethical practices have been addressed using whistleblowing methods. Therefore, the researcher has used this to understand consumer whistleblowing intention in the United Kingdom. With the view of potentially preventing unethical food practices. From the

information provided above we can note that unethical food practices are still very prevalent worldwide. This research will understand consumer whistleblowing intention to prevent food fraud in the United Kingdom. A notable amount of research has been conducted on food fraud and how to address it. Significant research has pinpointed blockchain as a method of preventing food fraud { Rogerson and Parry, 2020; Treiblmaier and Garaus,2022}. It is worth noting that the use of blockchain strategies may seem like a good idea to address unethical food practices, but a major problem with this method is the technical knowledge that will be required may be undesirable. Perhaps the most serious disadvantage of using this method to address food fraud is whistleblowers will need to undergo technical training or have technical knowledge in understanding and interpreting unethical food practices using blockchain strategies. It is worth noting that the use of whistleblowing models in addressing unethical practices has been successful in other industries such as financial and corporate fraud. Therefore, the use of whistleblowing models to address unethical food practices is new and will contribute to the literature significantly. The success of using various whistleblowing models is backed up by the following researchers.

It is worth noting that this research answers suggestions from Spink and Moyer {2011}. The above researcher suggests that preventing unethical food practices requires interdisciplinary research by linking criminology with other fields such as food safety, consumer behaviour and supply chain management {Spink and Moyer,2011}. With this information, the researcher has incorporated the development of the whistleblowing triangle and theory of planned behaviour which will help us understand consumer whistleblowing intention. The development of the whistleblowing triangle and theory of planned behaviour will provide us with key details such as consumer behaviour that Spink and Moyer {2011} suggest. Extensive research has been conducted with regard to food fraud and consumers {Yang et al., 2021; Nguyen et al.,2021; Nguyen et al., 2022; de Paola and Scoppa, 2013; Manning and Smith, 2015; Di Fonzo and Russo,2015}. Nevertheless, there seems to be no evidence of whistleblowing addressing food fraud in the literature.

Another significant key contribution to the literature is the use of whistleblowing models in addressing food fraud. Most of the research to date mainly focuses on corporate or financial fraud in which researchers have used the whistleblowing triangle. As mentioned above from previous chapters some components in the whistle blowing triangle have a positive impact on the intention to blow the whistle. While others have a negative impact on the intention to blow the whistle. This might have to do with cultural contexts and legislatures etc. For example, the study conducted by Latan et al., {2019} is based on the Indonesia context and it provided us with a positive relationship

between rationalisation and intention to blow the whistle, this research establishes a gap in the literature that this type of research has not been conducted in a different culture context. This raises questions and potential future research avenues; would the whistleblowing triangle yield different results in other countries with different cultural backgrounds?

It will be very important to analyse the impact of the factors from the whistle blowing triangle and some new factors in the United Kingdom. The author decided to use a developed whistleblowing triangle by answering calls from researchers such as Smaili {2019}. Smaili {2019} suggests that future research should use the whistleblowing triangle in different industries and countries to validate the whistleblowing triangle and its applicability.

The researcher therefore has developed a key whistleblowing model known as the whistleblowing triangle and incorporated the theory of planned behaviour to understand consumer whistleblowing behaviour. Creating a model that comprises of the following factors ethical responsibility, barriers to whistleblowing, social support, and brand loyalty. Our study therefore contributes to the literature by combining key whistleblowing models and creating one model. The following hypotheses are created in the new model created in our study.

H₁: Ethical responsibility is positively and significantly related to brand loyalty.

H₂: Barriers to whistleblowing are negatively and significantly related to Brand loyalty.

H₃: Ethical responsibility is positively and significantly related to social support.

H₄: Barriers to whistleblowing are positively and significantly related to social support.

H₅: Social support is positively and significantly related to brand loyalty.

H₆: Barriers to whistleblowing are positively and significantly related to ethical responsibility.

6.3 Theoretical Contributions

This research creates significant contributions to theory of planned behaviour by establishing its effectiveness in consumer whistleblowing contexts while illuminating key extensions and refinements. Firstly, the study extends the theory of planned behaviour attitude component away from behaviour specific evaluations to cover a comprehensive ethical focus that influence multiple consumer outcomes. In this case ethical responsibility performs as a meta- attitude that outlines specific behavioural attitudes and extends to consumer brand relationships, brand loyalty and purchasing decisions. The findings of this research highly align with recent theory of

planned behaviour developments highlighting moral attitudes while providing novel empirical findings for extended influence according to Ajzen{2020}. The research also reveals the responsive nature of subjective norms through social support findings. Rather than fixed social pressure, it is worth noting that social influences adapt to changing circumstances. With social networks providing key support to individuals who face whistleblowing barriers. This finding extends traditional theory of planned behaviour model and further supports recent calls for more complex social influence models { Sheeran et al., 2016}. Apart from making significant contributions to the theory of planned behaviour, this research has also made significant contributions to the whistleblowing theory. This study has made substantial support to the whistleblowing theory by developing and validating a consumer centric approach. It is worth noting that the validation and development of the consumer centric approach in this study differs extensively from traditional organisational models. The research has demonstrated a unique whistleblowing behaviour among consumers, highlighting that social support plays a key role in determining brand loyalty, resulting key consumer theoretical relationships that are not present in organisational contexts. Findings of this study address previous suggestions by key researchers such as Culiberg & Mihelic {2017} who suggest consumer whistleblowing theory. Results further provide empirical evidence supporting consumer specific mechanisms.

As stated above this study develops the whistleblowing theory, and answers various calls from researchers such as Near and Miceli {2016}. Near and Miceli suggest the development of the whistleblowing theory by adding key features such as moral motivation to yield different results to understand whistleblowing. The findings of this research therefore address this with the focus on ethical responsibility which is the extension of pressure factor in the whistleblowing triangle. The extended pressure component from the whistleblowing triangle goes beyond external organisational pressure to take account of basic moral motivation. It is key to note that this study provides empirical analysis of internal pressure mechanisms. From previously stated above social support has played a key role in understanding consumer whistleblowing intention with regards to food fraud in the United Kingdom. In this study the social support factor is a combination of opportunity and capability factors from the whistleblowing triangle. Taking account of opportunity { providing channels to report wrongdoing} and capability { building confidence and skills} the combination of these factors expands traditional conceptualisations and establishes key relationships of whistleblowing factors in the contexts of consumers.

Referencing back to the aim of this study to understanding consumer whistleblowing intention with regards to food fraud in the United Kingdom. It is worth noting that this study highlights a novel theoretical contribution of the relationship between barriers and social support. This novel contribution has not been extensively explored in previous research despite its key detail in understanding whistleblowing behaviour. It has been discovered that social networks are flexible in nature and adjust their support based on environmental challenges and perceived needs. The findings of this research highlight the insights on resilience in ethical behaviour systems and informs the wider application of social support theory. On the same token social support has a strong relationship with brand loyalty as can be seen from the results obtained in the study. The remarkably strong relationship between social support and brand loyalty $\beta = 0.565$ is worth noting because it evidently indicates social support's central role in consumer behaviour. Evidently supporting theoretical calls from key researchers such as Bagozzi {2007} to adopt social approaches to understanding consumer decisions. Referencing back to novel theoretical contributions of this research with regards to the key relationship between barriers and social support and social support being central in consumer behaviour. Another key novel contribution of this study is highlighted on ethical responsibility as an essential moral characteristic. The study has discovered that ethical responsibility remains constant despite external whistleblowing barriers. Which contributes extensively to moral psychology by reinforcing the view that ethical responsibility represents a stable trait rather than a situational response, with vital implications for consumer behaviour.

The successful integration of whistleblowing triangle and theory of planned behaviour reveals the significance of combining multiple theoretical perspectives to establish more comprehensive explanatory frameworks. This research contributes to the extensive literature on ethical consumer behaviour by stipulating empirical evidence for dynamic relationships between individual characteristics, consumer outcomes and social influences. It is worth noting that the findings of this research support the need for high level theoretical models that account for mediating paths, interaction effects and context specific factors.

In the previous section, we can note how each variable has an impact on consumer whistleblowing intention in the United Kingdom with regard to food fraud. The following model has greatly contributed to the literature because it is a combination of the development of the whistleblowing triangle and the theory of planned behaviour. But also, it has also used external stakeholders such as consumers to understand their intention in reporting unethical food practices. Turning our attention

back to the limited research on external whistleblowing and addressing unethical food practices using whistleblowing models. Our research has filled this gap with concrete findings that can be used in various research and policy regulations.

The findings highlight the need for stronger food safety regulations and consumer education on reporting mechanisms. Integrating whistleblowing channels with consumer feedback systems could enhance vigilance against unethical practices. Furthermore, empowering consumers through transparent reporting frameworks could foster a proactive whistleblowing culture.

5.2 Managerial implications of the study

Understanding consumer whistleblowing behaviour with regard to unethical food practices yields various managerial implications. Firstly, ethical responsibility from consumers is significantly and positively related to brand loyalty. For this reason, consumers who act or are aware of their ethical obligations will be more inclined to companies that produce their goods ethically. It is worth noting that ethical responsibility, corporate social responsibility, and any form of ethical marketing will enable consumers to have trust in the brands. Resulting in brand loyalty from the consumers. They are ethically aware that these firms practice and run their business in an ethical manner and as a result, they provide brand loyalty to the firm. The researcher suggests that firms conduct and operate transparently or ethically to gain significant loyalty from consumers. Our results are further supported by studies conducted by Tanveer et al., 2021 and Riharjo et al., 2025. These researchers highlight that consumers develop significant bonds and attachments to brands they consider to be ethically produced. Similarly, Reynolds {2024} suggests that consumers will be loyal to a brand that has an ethical supply chain and ethically conducts marketing and sales. With this information we can tell how important it is for firms to run their business ethically, the brand loyalty will in return increase the firm's sales. Firms implementing robust measures to ensure their activities are running ethically would be essential to building and maintaining consumer loyalty. Despite this research and other research indicating a positive relationship between ethical responsibility and consumer brand loyalty. It is important to note that firms need to ensure the measures or channels they use with regard to declare transparency and ethical activities are genuine. This is because once the consumer realises their claims are not true or genuine the firm risks losing consumer trust and loyalty.

Taking our attention to another managerial implication of our study, which is centred on potential whistleblowing barriers. From our results we have noticed that consumers who face whistleblowing barriers are negatively related to brand loyalty, on the other hand, barriers to

whistleblowing are positively related to social support and barriers to whistleblowing are insignificantly related to ethical responsibility. With this information we can denote that barrier to whistleblowing plays a key role in understanding consumer whistleblowing intention. It will be essential that firms provide robust reporting channels to all relevant parties so that reporting of unethical food practices takes place effectively. The introduction of robust reporting channels will enable consumers to trust the brand or have loyalty to the brand because they are aware that they have nothing to hide. According to Wroge {2008}, companies that have developed clear policies and reporting channels have maintained organisational integrity and brand loyalty. This study further justifies our findings in that barriers to whistleblowing are negatively related to brand loyalty. A criticism of this implication is various legal policies in different countries. Therefore, various companies must create appropriate channels and policies that are tailored to their legal policies. For instance, the whistleblowing channels or policies in the United Kingdom might not work in countries such as China that have different legal policies and cultural contexts.

6. Conclusion

This thesis has examined factors that influence consumer intentions to reporting unethical food practices through the theoretical lens of theory of planned behaviour. This study tested 12 hypotheses examining the relationships between theory of planned behaviour components and consumer intentions to report unethical food practices. It can be noted that structural equation modelling analysis revealed several key findings in this research. Firstly, the components of theory of planned behaviour significantly predict consumer intentions to reporting food fraud.

The research has addressed a significant gap in the literature by developing and empirically validating a consumer-focused approach to understanding whistleblowing behaviour in food fraud contexts. 514 UK consumers have taken part in the study through a rigorous quantitative analysis. The study has established the central role of social support procedures, the strength of ethical responsibility as the moral characteristics of consumers and the complicated dynamics governing consumer responses to unethical food practices.

6.1 Empirical results overview

1. Ethical Responsibility and b

Brand Loyalty (H_1) The results indicate a significant positive relationship demonstrating that consumers with higher ethical responsibility demonstrate greater loyalty towards food brands ($f^2 = 0.125, P < 0.05$). This effect points out that moral orientations thoroughly influence consumer brand relationships. Expanding the analysis from isolated ethical decisions to incorporating wider consumption behaviour.

2. Ethical Responsibility and Social Support (H_3)

The results indicate a strong positive relationship that ethically responsible consumers are in a greater position to receive social support for their ethical actions ($f^2 = 0.219, P < 0.05$). As a result, this interprets how individual moral characteristics have an impact on social network and support. Therefore, establishing supporting cycles of ethical behaviour.

3. Barriers to Whistleblowing and Social Support (H_4)

a significant positive relationship between barriers to whistleblowing and social support revealed a novel contribution where an increase to reporting barriers triggered heightened social support ($f^2 =$

0.196, $P < 0.05$). The findings of this research defy the usual assumptions that barriers have negative influence and uncovers the relevance of social networks in ethical contexts.

4. **Social Support and Brand Loyalty (H_5)** this hypothesis proved to be the strongest relationship in the study ($\beta = 0.565$, $P < 0.05$) indicating social support as the strongest predictor of brand loyalty. This strong indicator shows that brand relationships are fundamentally key with social networks or support playing a key role in shaping consumer loyalty.
5. **Barriers to Whistleblowing and Brand Loyalty (H_2)** the results of this research indicate a negative coefficient in the predicted direction. The relationship between barriers to whistleblowing and brand loyalty in this study is therefore rejected ($\beta = -0.089$, $P < 0.036$). The findings uncovered that the relationship between barriers to whistleblowing and loyalty functions in more mediating pathways compared to direct effects.
6. **Barriers to Whistleblowing and Ethical Responsibility (H_6)** in this hypothesis there is a small non-significant positive coefficient which led to the hypothesis being rejected. The findings indicate vital information that indicates that ethical responsibility as a psychological construct stays consistent despite barriers to whistleblowing ($\beta = 0.066$, $P < 0.068$)

6.2 Model Performance and Validation

the incorporated theoretical model demonstrated excellent fit across the several statistical indices delivering strong validation for the theory of planned behaviour and whistleblowing triangle incorporation. This is further supported through structural equation model achieving a comparative fit index {CFI} OF 0.93, Tucker- Lewis Index {TLI} OF 0.91 and root mean square error of approximation {RMSEA} of 0.06 all surpassing recommended thresholds for good model fit. It is worth noting that the model also explained a considerable variance in key outcome variables, demonstrating 42% of variance in brand loyalty and 28% of variance in social support. These variances validate the practical significance of the theoretical framework, and its ability to forecast key consumer outcomes in ethical contexts. Lastly the findings revealed six factors explaining 87.69% of total variance with strong factor loading supporting construct validity of the

measurement model. Internal consistency of all constructs is proved through reliability analyses.

Furthermore Cronbach's (> 0.70) provides confidence in the measurement quality.

Demographic Insights- This study's diverse sample of consumers in the United Kingdom obtained data from 514 consumers. The results obtained indicate key demographic patterns significant to consumer whistleblowing behaviour. Firstly, income levels play a significant role consumer whistleblowing. Our results indicate that lower income consumers with a stronger social support respond to barriers compared to consumers with higher income. This finding is key in understanding various protection needs and vulnerability across different consumers. Another key finding is the samples high educational accomplishment with 83.1% of the consumers holding university degrees and diverse ethnic sector with 67.3% accounting for non- white participants. This key significant finding suggests insights into educated, diverse consumer population however, the researcher noted that this may limit generalisability to other demographic segments.

6.4 Implications for the United Kingdom Food Sector

The food sector in the United Kingdom faces significant challenges with regards to food fraud, consumer protection and maintaining public trust. According to a study conducted by Steinberg & Engert {2019} food fraud signifies high value, organised problem with considerable annual costs to both consumers and industries at large. The food sector in the United Kingdom operates within complex global supply chain hence creating vulnerabilities to fraud while relying on consumer trust. The current regulatory framework while comprehensive faces key limitations such as addressing the organised nature of food fraud. On the same token key regulatory institutions in the United Kingdom are The National Food Crime Unit {NFCU} and the Food Standard Agency {FSA} offer important oversight however enforcement relies on regulatory rather than criminal fraud. According to Elizondo et al., {2019} the focus of the institutions relaying on regulatory rather than criminal fraud enables dishonesty resulting in limited high-profile prosecutions.

Consumer protection mechanisms in the United Kingdom with regards to the food sector have developed over the years. However, significant gaps are prevalent with regards to prevention, integrated systems, and accessible reporting channels for consumers. The findings of this research highlight important insights in addressing these challenges and reinforcing consumer protection in the United Kingdom {food sector}. Firstly, food companies in the United Kingdom should consider creating community-based initiatives that will bring together consumers who share ethical values and concerns with regards to food safety and food quality. Ultimately these communities can offer

several functions such as providing social support for ethical consumer behaviour, creating opportunities for consumers to provide feedback and reporting, and developing deeper brand loyalty through social connections. This suggestion falls in line with the results reported in this research that indicate a remarkably strong relationship between brand loyalty and social support. It is vital that companies prioritise creating supportive communities around their brands rather than primarily focusing on customer relationships. Additionally, the significant relationship between brand loyalty and ethical responsibility offers insights into what food companies in the United Kingdom can take on board. For example, companies that are targeting ethically responsible consumers should make it a priority to be clear on their transparency and ethical practices. The findings of this research highlight that ethical branding is not just a basic defensive strategy but a hands-on approach to building deeper customer relationships. The author suggest UK food companies should invest in developing a wide range of ethical positioning strategies that convey their values, practices, and commitment to their customers. Examples of this might include ethical sourcing policies, clear and concise communication with regards to quality control and safety measures and transparency on supply chain. Additionally, food companies should consider taking part in industry wide initiatives to improve ethical standards. The third suggestion stems from hypothesis 4 which is the relationship between barriers and social support. It is important that food companies in the United Kingdom create integrated reporting systems that offer consumers leverage to overcome barriers. Instead of focusing on formal reporting channels, an introduction or creation of peer reporting networks, social media platforms that will enable consumers share vital information about products. The creation of this integrated reporting channels will enable consumers support each other and report an unethical food practice. As can be noted from previous chapters social support is key in understanding consumer whistleblowing intention. Lastly, companies should aim at reducing consumer reporting. This can be achieved through simplifying reporting processes, providing multiple reporting channels, and protecting reporters.

6.5 Limitations

Despite this research providing novel theoretical contributions, this section contains its limitations. The first one is with regards to the methodology used. The cross-sectional nature of this study restricts its ability to create definitive casual relationships between variables. Despite theoretical frameworks suggesting casual pathways, the statistical side can only demonstrate associations rather than causations. It is worth noting that this limitation is common in consumer behaviour research

but compels the key strengths of conclusion that can be made about the direction of influence between variables. On the same token, cross sectional design prevents investigating how relationships between variables change over time. For example, consumer attitudes, brand loyalties, and social support may change over time in response to changing circumstances or personal experiences. For this reason, longitudinal research will provide key insights into the stability and key dynamics of the relationships identified in this study. Another limitation observed in this study is the self-report data limitation. The dependence on self-report data creates several potential biases that may affect the validity of findings. Social desirability bias may lead consumers to overstate their ethical responsibility. While these limitations are usually noticed in consumer behaviour research, they limit confidence in findings and recommend the need for triangulation using multiple data sources. It is recommended that future research should combine objective measures of consumer behaviour, mixed method approach and observational data to authenticate the relationships through self-reporting. It is worth noting that this research obtained 514 responses from consumers in the United Kingdom. However, the study sample while demographically diverse may not account of the consumer population in the United Kingdom. The fairly young age profile of 54.4% under 35 may not sufficiently represent older consumer segments. Data obtained also highlights the high educational attainment levels in which 83.1% hold university degrees may limit generalisability to consumers with different educational backgrounds. For example, highly educated consumers may have a different ethical focus, different social support or different brand loyalty compared to consumers with a lower educational background. The methodological side of limitations have been addressed in the previous chapters, the next section of the limitations will cover theoretical and conceptual limitations. Firstly, the measurements of some constructs may need refinement to better capture multidimensionality of these phenomena. An example of a construct from this research that may need refinement is barriers to whistleblowing. This is because the rejection of H_2 and H_6 may reveal measurement limitations rather than the true relationships. Different types of barriers such as social, legal, psychological, and structural may have different relationships with other variables that are not captured by composite measures. Despite social support construct showing strong relationships in this study, it is worth noting that it can benefit from a refined measurement. The reason for this is to potentially obtain data from different types of support which may include emotional, instrumental, and informational support. This might reveal different vital patterns of relationships and provide more specific guidance. Referencing back to the aim of this study which is to understand consumer whistleblowing intention the United Kingdom with regards to food fraud. This study has focused on

consumers in the United Kingdom and for that reason its findings limit generalisability to other cultures with different social structures, cultural attitudes towards whistleblowing, regulatory settings, and ethical responsibilities. The key relationships discovered in this study may be specific to UK cultural values, institutional obligations, and social norms. This study further suggests that a cross cultural research would be an option to understand which findings are culture specific versus universal. For example, different cultures may have different social support patterns, different definition of ethical responsibility which may yield key findings and contribute to the literature. Lastly the research focus on unethical food practices and consumers may limit its generalisability to other unethical practices such as financial or corporate fraud. The responses that consumers provided for unethical food practices may differ from responses they might provide for corporate or financial misconduct.

6.6 Future Research Recommendations

From the previous chapter we can note limitations have been addressed and this section will cover future research recommendations. It is recommended that longitudinal research should be employed by future researchers. This is to understand casual relationships and examine relationships between ethical responsibility, social support, brand loyalty and barriers change over time. Longitudinal research can also examine the progress of ethical responsibility over time and the long-term effects of reporting experiences following consumer behaviour. Another recommendation with regards to methodology is carrying out a mixed method study. Combining qualitative and quantitative methods can provide a more comprehensive understanding of whistleblowing. The mixed method approach can also examine the relationships identified in this study by understanding which ones are stronger or weaker. The use of interviews, focus groups etc could deliver key insights into understanding the relationships and potentially identifying factors that moderate these relationships.

The findings of this research indicated some rejection on some hypotheses, future research can investigate examining the mediating methods that explain the how and why the relationships in this study occurred. The rejection of these hypotheses indicate that the relationships may operate indirect pathways which mediating analysis can identify. This analysis will provide us key details such as intermediate steps through which ethical responsibility influences brand loyalty or how whistleblowing barriers affect consumer outcomes. Additionally, a cross cultural study is recommended to examine how the theoretical relationships identified in this study vary across

different cultural contexts. On the same token cross cultural studies can identify world-wide versus culture specific aspects of consumer whistleblowing behaviour. Resulting in a more comprehensive theoretical framework that. Will consider cultural variations. For example, a study to examine how different cultural values affect the relationship between ethical responsibility, consumer outcomes and whistleblowing barriers. Lastly, an examination of the integrated theory of planned behaviour-whistleblowing triangle framework and how it relates to other theoretical frameworks. These theoretical frameworks can vary from consumer behaviour to social psychology to organisational behaviour. The integration of these frameworks with the framework created in this study could provide a more comprehensive understanding of consumer ethical behaviour.

6.7 CONCLUSION

The aim of this research was to understand consumer whistleblowing intention with regards to food fraud in the United Kingdom. This research has stipulated a comprehensive insight into consumer whistleblowing intentions in the UK in the context of food fraud Highlighting the multifaceted interplay between ethical responsibility, social support, brand loyalty and whistleblowing barriers. An understanding of consumer ethical behaviour has been attained through rigorous empirical analysis within an integrated theoretical framework.

The key findings highlight that social support is the most powerful predictor of brand loyalty, ethical responsibly of the consumers influences both social support and brand loyalty. It is worth noting that findings in this study indicate that when consumers face ethical challenges social support acts a mechanism for support for them. These findings dispute traditional individualistic approaches to understanding consumer behaviour and establish the fundamentally social nature of ethical decision making in the contexts of consumers.

The theoretical contributions obtained through the extension of the theory of planned behaviour and whistleblowing theory by establishing their successful integration and revealing a novel framework, provides future theoretical development and empirical research in consumer ethical behaviour.

It is worth noting that practical implication for the food industry in the United Kingdom are substantial, signifying that companies should aim to focus on developing community building and social support and key regulatory agencies should aim to focus on creating social support infrastructure for consumer protection. These suggestions are grounded in empirical evidence and reinforced by extensive literature review.

The research has also acknowledged the important limitations of this research which include cross sectional design, self-reporting data and the research focusing on the United Kingdom. However, these limitations have created key avenues that fellow researchers can take on board for future studies. On the same token limitations suggest future research to conduct longitudinal studies, cross cultural examinations, and mixed method approach. All of these will gain new insights into understanding whistleblowing.

On the same avenue this research has opened several points for future investigations, from mediating and moderating factors to developing and testing interventions based on our findings.

In the end this research contributes distinctively to a more empirically grounded understanding of consumers and how they navigate ethical dilemmas in the contexts of marketplace. By providing the key role of social support in consumer ethical behaviour and providing key evidence-based suggestions for enhancing consumer protection. The study has therefore made important contributions to consumer welfare, food safety and corporate liability in the United Kingdom and beyond.

Findings indicate that effective consumer protection does not only require corporate responsibility and regulatory frameworks, but it also requires social support networks. These social support networks will empower consumers to act on their ethical beliefs. And it is key that building and maintaining these social support networks by the appropriate stakeholders is essential to improving food systems and protecting consumer welfare.

As the food industry in the United Kingdom continues to evolve due to technology innovations, global supply chain c challenges and change in consumer expectations, the insights from this research provide key guidance for navigating these challenges.

Finally, this research reveals that consumers when supported by appropriate social support mechanisms can play a key role in maintaining food system integrity and hold companies accountable for their actions.

7. Appendix

7.1 Final Survey

Appendix 1 survey

Understanding the role of whistleblowing in food fraud from a consumer's perspective

Dear Respondent

Thank you for your interest in this project about understanding the role of whistleblowing in preventing food fraud. My name is Chikondi Ngoma, and I am currently a PhD student at Brunel University London. I am researching how whistleblowing can address food fraud in the United Kingdom. I intend to collect data through a survey which I have included in this form.

This study has been approved by the Brunel university ethics committee and I can assure you that information you provide will remain confidential and anonymous. Data collected will be stored securely and will not be used for any other purpose other than for this study.

Brief background information

Before we get started with the questionnaire, it would be nice to get to know you and your background

1. What is your gender? {Please tick}: ☐ male female ☐ other ☐

2. What is your age range {please tick}

18-24	25-34	35-44	45-54	55-64	65 and over
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3. Education background (if studying please tick the qualification you're working towards achieving :

- ☐ Postgraduate
 ☐ Graduate
 ☐ BTEC HNC/HND
 ☐ A-Level/BTEC Level 1/2/3
- ☐ GCSE and below

4. What is your ethnicity

- ☐ White
 ☐ mixed ethnic group
 ☐ Asian/Asian British
- ☐ Black African/ Caribbean/ Black British
 ☐ Other ethnic group

5. What is the status of your employment

- ☐ Full time
 ☐ part time
 ☐ self-employed
 ☐ retired prefer not to say

6. Which of this best describes your annual income?

- ☐ 0 - £9,999
 ☐ £10,000 - £49,999
 ☐ £50,000-£99,999

£100,000- £149,999

☐ £ 150,000+

7. How many times do you do a food shop a

☐ month? Once

☐ Twice Three times more

☐ than three times

8. On average how much do you spend on your food shop in a

☐ month Less than £50

☐ Less than £100

☐ Less than £150

Less than £200

More than £200

Section 1

In this section, you are required to think of your most recent food shop. Imaging you purchased meat/ poultry product that you are convinced has been unethically produced.

As a consumer how do you feel about this? What can you do to prevent this from happening again?

With that in mind, please answer the survey below

To what extent do you agree with the following statements regarding food fraud as a consumer when considering whistleblowing

Please use the following scale:

Strongly disagree	Moderately disagree	Slightly disagree	Neither disagree nor agree	Slightly agree	Moderately agree	Strongly agree
1	2	3	4	5	6	7

PRESSURE	
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1. I am very likely to blow the whistle because of peer pressure	1	2	3	4	5	6	7
2. I am very likely to blow the whistle because of my sense of moral obligation	1	2	3	4	5	6	7
3. Skip to number 4 if you do not practice religion. I am very likely to blow the whistle because I follow and practice religion	1	2	3	4	5	6	7
4. I am likely to blow the whistle because it's my duty	1	2	3	4	5	6	7
OPPORTUNITY							
5. I am very likely to encounter challenges in the process of reporting unethical food practices	1	2	3	4	5	6	7
6. I am likely to not blow the whistle if the firm hinders reporting of wrongdoing by not providing adequate reporting channels	1	2	3	4	5	6	7

7. I think internal reporting has shown to be less effective hence continuous unethical food practices	1	2	3	4	5	6	7
8. I am very likely to encounter retaliation by the food companies	1	2	3	4	5	6	7
CAPABILITY							
9. I am likely to speak out about unethical food practices	1	2	3	4	5	6	7
10. I am more likely to blow the whistle because I have immunity to retaliation	1	2	3	4	5	6	7

11. I am likely to blow the whistle because I have the mental ability to think effectively and efficiently	1	2	3	4	5	6	7
12. I am confident to speak out about unethical food practices	1	2	3	4	5	6	7
13. I am more likely to blow the whistle because I have the necessary tech skills	1	2	3	4	5	6	7
RATIONALISATION							
14. I am not likely to blow the whistle despite thinking effectively about reporting the wrongdoing	1	2	3	4	5	6	7
15. I think reporting of unethical food products is likely to be ineffective	1	2	3	4	5	6	7
16. I am likely to blow the whistle to help someone else by reporting unethical food practices	1	2	3	4	5	6	7

SERIOUSNESS OF WRONGDOING							
17. I am likely to blow the whistle due to mislabelling in food packaging	1	2	3	4	5	6	7
18. I am likely to blow the whistle due to contamination in food production	1	2	3	4	5	6	7
19. I am not likely to blow the whistle due to wrongful substitution of low quality ingredients in production of food	1	2	3	4	5	6	7
20. I am likely to blow the whistle because of theft in food production	1	2	3	4	5	6	7
21. I am likely to blow the whistle because of mis presentation of food	1	2	3	4	5	6	7
LAWS AND POLICIES							

22. I am likely to blow the whistle because the food and safety act have been created in an ethical and normative framework	1	2	3	4	5	6	7
23. I am likely to blow the whistle because the food and safety act has been created to encourage reporting of unethical food practices	1	2	3	4	5	6	7
24. I am likely to blow the whistle because the food and safety act has been legitimately created and should be obeyed	1	2	3	4	5	6	7
PERCEIVED BEHAVIOURAL CONTROL							

25. I am likely to blow the whistle because I pay close attention to negative information concerning food production	1	2	3	4	5	6	7
26. I am likely to not blow the whistle because I tend to think in great depth about negative feedback concerning food	1	2	3	4	5	6	7
SOCIAL NORM							
27. I am more likely to blow the whistle because I know my family would be proud of me	1	2	3	4	5	6	7
28. I am more likely to blow the whistle because I know my friends would be proud of me	1	2	3	4	5	6	7
29. I am more likely to blow the whistle because I know my co-workers would be proud of me	1	2	3	4	5	6	7
ATTITUDE							
30. I am likely to blow the whistle because reporting the wrongdoing will control food fraud	1	2	3	4	5	6	7
31. I am likely to not blow the whistle because reporting of unethical food production will prevent harm to the firm	1	2	3	4	5	6	7
32. I am likely to blow the whistle because reporting of wrongful production of food is in public interest	1	2	3	4	5	6	7

Consumer whistleblowing intention							
33. I am likely to blow the whistle by providing the public with information	1	2	3	4	5	6	7
34. I am likely to blow the whistle to appropriate authorities outside the firm	1	2	3	4	5	6	7
35. I am likely to blow the whistle to respective authorities outside the firm	1	2	3	4	5	6	7

Section 2

1. Please indicate the benefits or possible outcome of implementing whistleblowing in unethical food practices

BRAND TRUST							
36. My preferred brand never disappoints the quality of its products	1	2	3	4	5	6	7
37. My preferred brand guarantees my satisfaction	1	2	3	4	5	6	7
38. I am confident about my preferred brand	1	2	3	4	5	6	7
39. My preferred brand meets my highest expectations all the time	1	2	3	4	5	6	7
BOYCOTT							
40. I am likely to feel guilty if I buy this brand	1	2	3	4	5	6	7
41. I am likely to feel better about myself if I manage to boycott the brand	1	2	3	4	5	6	7
42. I am likely to boycott this brand	1	2	3	4	5	6	7

43. I intend to boycott this brand	1	2	3	4	5	6	7
NEGATIVE WORD OF MOUTH							
44. I frequently mention unethical food practices	1	2	3	4	5	6	7
45. I frequently go into details when I tell others about unethical food practices	1	2	3	4	5	6	7
46. I talk about unethical food practices more than I talk about anything food related	1	2	3	4	5	6	7

7.2 Brunel University London Research Ethics Committee Approval

Appendix 2 Ethics Committee Approval



College of Business, Arts and Social Sciences Research Ethics Committee
Brunel University London
Kingston Lane
Uxbridge
UB8 3PH
United Kingdom
www.brunel.ac.uk

17 August 2023

LETTER OF APPROVAL

APPROVAL HAS BEEN GRANTED FOR THIS STUDY TO BE CARRIED OUT BETWEEN 17/08/2023 AND 10/12/2023

Applicant (s): MS Chikondi Ngoma

Project Title: Understanding the role of whistleblowing in food fraud. An analysis conducted in the United Kingdom

Reference: 44409-LR-Aug/2023- 46726-1

Dear MS Chikondi Ngoma

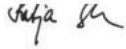
The Research Ethics Committee has considered the above application recently submitted by you.

The Chair, acting under delegated authority has agreed that there is no objection on ethical grounds to the proposed study. Approval is given on the understanding that the conditions of approval set out below are followed:

- You can recruit participants who work at any organisation/company using contact information which is publicly available or contact information which is available to you as part of your personal contacts/social media network or professional network that you belong to.
- Recruitment through social media - Any activity to recruit participants via social media must comply with the terms and conditions of the social media sites that you wish to use.
- Recruitment by email and telephone - You must ensure that the collection of email addresses and phone numbers of those you wish to contact is lawful. Do not send mass recruitment emails by entering multiple email addresses in the 'To' or 'Cc' fields of your email message. You should email each person individually. Do not use group mailing/distribution lists on Brunel's email system.
- Make the following amendments to the Participant Information Sheet:
 - "What if something goes wrong?" State that queries should be directed, in the first instance, to the Supervisor (where relevant), or the researcher. Complaints, on the other hand, should be directed, in the first instance, to the College of Business, Arts and Social Sciences Research Ethics Committee: cbass-ethics@brunel.ac.uk.
 - "Who has reviewed the study?" State that the study has been reviewed by your Supervisor and the College of Business, Arts and Social Sciences Research Ethics Committee, email cbass-ethics@brunel.ac.uk.
- The agreed protocol must be followed. Any changes to the protocol will require prior approval from the Committee by way of an application for an amendment.
- Please ensure that you monitor and adhere to all up-to-date local and national Government health advice for the duration of your project.

Please note that:

- Research Participant Information Sheets and (where relevant) flyers, posters, and consent forms should include a clear statement that research ethics approval has been obtained from the relevant Research Ethics Committee.
- The Research Participant Information Sheets should include a clear statement that queries should be directed, in the first instance, to the Supervisor (where relevant), or the researcher. Complaints, on the other hand, should be directed, in the first instance, to the Chair of the relevant Research Ethics Committee.
- Approval to proceed with the study is granted subject to any conditions that may appear above.
- The Research Ethics Committee reserves the right to sample and review documentation, including raw data, relevant to the study.
- If your project has been approved to run for a duration longer than 12 months, you will be required to submit an annual progress report to the Research Ethics Committee. You will be contacted about submission of this report before it becomes due.
- You may not undertake any research activity if you are not a registered student of Brunel University or if you cease to become registered, including abeyance or temporary withdrawal. As a deregistered student you would not be insured to undertake research activity. Research activity includes the recruitment of participants, undertaking consent procedures and collection of data. Breach of this requirement constitutes research misconduct and is a disciplinary offence.



Dr Katja Samiento-Minwaldt
Chair of the College of Business, Arts and Social Sciences Research Ethics Committee
Brunel University London

7.3 Statistics

Descriptive Statistics

	Mean	Std. Deviation	N
1. I am very likely to blow the whistle because of peer pressure	4.25	2.278	514
2. I am very likely to blow the whistle because of my sense of moral obligation	4.83	2.261	514
3. Skip to number 4 if you do not practice religion. I am very likely to blow the whistle because I follow and practice religion	5.14	2.279	347
6. I am very likely to encounter challenges in the process of reporting unethical food practices	3.69	2.347	512
8. I am likely to not blow the whistle if the firm hinders reporting of wrongdoing by not providing adequate reporting channels	3.69	2.354	513
10. I am very likely to encounter retaliation by the food companies	3.66	2.309	513
30. I am more likely to blow the whistle because I know my family would be proud of me	4.82	2.338	511
31. I am more likely to blow the whistle because I know my friends would be proud of me	4.81	2.346	512
32. I am more likely to blow the whistle because I know my co-workers would be proud of me	4.80	2.350	511
39. My preferred brand never disappoints the quality of its products	5.39	2.183	512
40. My preferred brand guarantees my satisfaction	5.40	2.167	512

41. I am confident about my preferred brand	5.41	2.184	512
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Table 1 Descriptive Statistics

what is your gender?

	Frequency	Percent	Valid Percent	Cumulative Percent
Female	291	56.6	56.6	56.6
male	221	43.0	43.0	99.6
Valid Prefer not to say	2	.4	.4	100.0
Total	514	100.0	100.0	

Table 2 Gender distribution table

what is your age range

	Frequency	Percent	Valid Percent	Cumulative Percent
18-24	83	16.1	16.1	16.1
25-34	196	38.1	38.1	54.3
25-34, 35-44	1	.2	.2	54.5
35-44	128	24.9	24.9	79.4
Valid 45-54	62	12.1	12.1	91.4
55-64	38	7.4	7.4	98.8
65 and above	6	1.2	1.2	100.0
Total	514	100.0	100.0	

Table 3 Age distribution table

Table 4 Education distribution table

Education background (if studying please tick the qualification you're working towards achieving)

	Frequency	Percent	Valid Percent	Cumulative Percent
	1	.2	.2	.2
A-Level/ BTEC Level 1/2/3	36	7.0	7.0	7.2
BTEC HNC/HND	48	9.3	9.3	16.5
Valid BTEC HNC/HND, A-Level/ BTEC Level 1/2/3	1	.2	.2	16.7
GCSE and below	1	.2	.2	16.9

Graduate	202	39.3	39.3	56.2
Graduate, A-Level/ BTEC Level 1/2/3, GCSE and below	1	.2	.2	56.4
Postgraduate	224	43.6	43.6	100.0
Total	514	100.0	100.0	

What is your ethnicity

	Frequency	Percent	Valid Percent	Cumulative Percent
	1	.2	.2	.2
Asian/Asian British	67	13.0	13.0	13.2
Black African/ Caribbean/ Black British	144	28.0	28.0	41.2
Valid mixed ethnic group	131	25.5	25.5	66.7
Other ethnic group	3	.6	.6	67.3
White	168	32.7	32.7	100.0
Total	514	100.0	100.0	

Table 5 Ethnicity distribution table

What is the status of your employment

	Frequency	Percent	Valid Percent	Cumulative Percent
	13	2.5	2.5	2.5
Full time	295	57.4	57.4	59.9
Full time, self-employed	14	2.7	2.7	62.6
part time	122	23.7	23.7	86.4
part time, self-employed	3	.6	.6	87.0
Valid retired prefer not to say	14	2.7	2.7	89.7
self-employed	45	8.8	8.8	98.4
self-employed, retired prefer not to say	8	1.6	1.6	100.0
Total	514	100.0	100.0	

Table 6 Employment distribution table

Table 7 Correlations of variables

	1. I am very likely to blow the whistle because of peer pressure	2. I am very likely to blow the whistle because of my sense of moral obligation	3. Skip to number 4 if you do not practice religion. I am very likely to blow the whistle because I follow and practice religion	6. I am very likely to encounter challenges in the process of reporting unethical al food practice	8. I am likely to not blow the whistle if the firm hinders reporting of wrongdoing by not providing adequate reporting channels	10. I am very likely to encounter retaliati on by the food compan ies	30. I am more likely to blow the whistle because I know my family would be proud of me	31. I am more likely to blow the whistle because I know my friends would be proud of me	32. I am more likely to blow the whistle because I know my co-workers would be proud of me	39. My preferred brand never disappoints the quality of its products	40. My preferred brand guarantees my satisfaction	41. I am confident about my preferred brand
Pearson Correlation	1	.771**	.715**	.613**	.621**	.603**	.643**	.632**	.629**	.568**	.573**	.563**
1. I am ⁿ very likely to blow the whistle because of peer pressure		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Sig. {2-tailed}												
Sum of Squares	2661.113	2036.082	1296.352	1677.508	1704.674	1625.817	1744.750	1724.564	1713.949	1440.895	1444.654	1430.910
Cross-products												
Covariance	5.187	3.969	3.747	3.283	3.329	3.175	3.421	3.375	3.361	2.820	2.827	2.800
N	514	514	347	512	513	513	511	512	511	512	512	512
2. I am very likely to blow the whistle because of	Pearson Correlation	.771**	.884**	.505**	.464**	.496**	.701**	.690**	.682**	.694**	.699**	.699**
n		1										
Sig. {2-tailed}		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

my sense Sum of												
of moral Squares	2036.0	2623.61	1550.50	1369.98	1265.55	1326.32	1891.62	1870.30	1844.83	1751.50	1750.38	1763.9
obligation and Cross-	82	1	7	2	4	4	0	1	4	8	7	14
products												
Covariance	3.969	5.114	4.481	2.681	2.472	2.590	3.709	3.660	3.617	3.428	3.425	3.452
N	514	514	347	512	513	513	511	512	511	512	512	512
3. Skip to Pearson												
number 4 Correlatio	.715**	.884**	1	.417**	.389**	.406**	.764**	.762**	.764**	.730**	.735**	.722**
if you do n												
not Sig. {2-	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000
practice tailed}												
religion. I Sum of												
am very Squares	1296.3	1550.50	1796.79				1381.40	1371.76	1375.47	1211.56	1211.84	1201.8
likely to and Cross-	52	7	5	790.968	750.824	754.571	9	9	0	1	4	44
blow the products												
whistle Covariance	3.747	4.481	5.193	2.286	2.170	2.181	4.016	3.976	3.998	3.512	3.513	3.484
because I												
follow and												
N	347	347	347	347	347	347	345	346	345	346	346	346
practice												
religion												
6. I am Pearson												
very likely Correlatio	.613**	.505**	.417**	1	.833**	.870**	.384**	.384**	.376**	.360**	.363**	.364**
to n												
encounter Sig. {2-	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000
challenges tailed}												
in the Sum of												
process of Squares	1677.5	1369.98		2815.62	2353.31	2412.27	1073.41	1079.38	1056.71			952.47
reporting and Cross-	08	2	790.968	3	3	5	6	4	0	940.959	942.534	9
unethical products												
food Covariance	3.283	2.681	2.286	5.510	4.605	4.721	2.109	2.116	2.076	1.845	1.848	1.868
practices N	512	512	347	512	512	512	510	511	510	511	511	511
8. I am Pearson												
likely to Correlatio	.621**	.464**	.389**	.833**	1	.822**	.381**	.389**	.376**	.368**	.370**	.377**
not blow n												
the whistle Sig. {2-	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000
if the firm tailed}												
hinders Sum of												
reporting Squares	1704.6	1265.55		2353.31	2838.09	2288.04	1069.33	1098.94	1059.26			989.44
of and Cross-	74	4	750.824	3	7	3	5	1	2	966.914	964.496	5
wrongdoin products												
g by not Covariance	3.329	2.472	2.170	4.605	5.543	4.469	2.097	2.151	2.077	1.892	1.887	1.936

providing adequate reporting channels	N	513	513	347	512	513	513	511	512	511	512	512	512
	Pearson												
10. I am very likely to encounter retaliation by the food companies	Correlation	.603**	.496**	.406**	.870**	.822**	1	.397**	.401**	.392**	.376**	.380**	.381**
	Sig. {2-tailed}	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000
	Sum of Squares	1625.817	1326.324	754.571	2412.275	2288.043	2730.659	1093.515	1109.529	1085.667	968.043	970.752	982.777
	and Cross-products												
	Covariance	3.175	2.590	2.181	4.721	4.469	5.333	2.144	2.171	2.129	1.894	1.900	1.923
	N	513	513	347	512	513	513	511	512	511	512	512	512
	Pearson												
30. I am more likely to blow the whistle because I know my family would be proud of me	Correlation	.643**	.701**	.764**	.384**	.381**	.397**	1	.983**	.981**	.748**	.743**	.739**
	Sig. {2-tailed}	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000
	Sum of Squares	1744.750	1891.620	1381.409	1073.416	1069.335	1093.515	2788.074	2751.710	2741.025	1946.399	1920.491	1924.855
	and Cross-products												
	Covariance	3.421	3.709	4.016	2.109	2.097	2.144	5.467	5.396	5.385	3.816	3.766	3.774
	N	511	511	345	510	511	511	511	511	510	511	511	511
	Pearson												
31. I am more likely to blow the whistle because I know my friends would be proud of me	Correlation	.632**	.690**	.762**	.384**	.389**	.401**	.983**	1	.981**	.736**	.737**	.731**
	Sig. {2-tailed}	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000
	Sum of Squares	1724.564	1870.301	1371.769	1079.384	1098.941	1109.529	2751.710	2811.373	2753.836	1925.480	1915.408	1913.965
	and Cross-products												
	Covariance	3.375	3.660	3.976	2.116	2.151	2.171	5.396	5.502	5.400	3.768	3.748	3.746
	N	512	512	346	511	512	512	511	512	511	512	512	512
	Pearson												
32. I am more likely to blow the whistle because I	Correlation	.629**	.682**	.764**	.376**	.376**	.392**	.981**	.981**	1	.730**	.731**	.723**
	Sig. {2-tailed}	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000

know my Sum of													
co-Squares	1713.9	1844.83	1375.47	1056.71	1059.26	1085.66	2741.02	2753.83	2815.64	1904.11	1892.11	1886.7	
workers and Cross-	49	4	0	0	2	7	5	6	0	9	7	16	
would be products													
proud of Covariance	3.361	3.617	3.998	2.076	2.077	2.129	5.385	5.400	5.521	3.734	3.710	3.699	
me N	511	511	345	510	511	511	510	511	511	511	511	511	
Pearson													
39. My Correlatio	.568**	.694**	.730**	.360**	.368**	.376**	.748**	.736**	.730**	1	.985**	.982**	
preferred n													
brand Sig. {2-	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	
never tailed}													
disappoint Sum of													
s the Squares	1440.8	1751.50	1211.56										
quality of and Cross-	95	8	1	940.959	966.914	968.043							
its products							1946.39	1925.48	1904.11	2434.30	2381.33	2393.1	
products Covariance	2.820	3.428	3.512	1.845	1.892	1.894	3.816	3.768	3.734	4.764	4.660	4.683	
N	512	512	346	511	512	512	511	512	511	512	512	512	
Pearson													
Correlatio	.573**	.699**	.735**	.363**	.370**	.380**	.743**	.737**	.731**	.985**	1	.985**	
40. My n													
preferred Sig. {2-	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000	
brand tailed}													
guarantee Sum of													
s my Squares	1444.6	1750.38	1211.84										
satisfactio and Cross-	54	7	4	942.534	964.496	970.752							
n products							1920.49	1915.40	1892.11	2381.33	2399.31	2383.0	
Covariance	2.827	3.425	3.513	1.848	1.887	1.900	3.766	3.748	3.710	4.660	4.695	4.664	
N	512	512	346	511	512	512	511	512	511	512	512	512	
Pearson													
Correlatio	.563**	.699**	.722**	.364**	.377**	.381**	.739**	.731**	.723**	.982**	.985**	1	
n													
41. I am Sig. {2-	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		
confident tailed}													
about my Sum of													
preferred Squares	1430.9	1763.91	1201.84										
brand and Cross-	10	4	4	952.479	989.445	982.777							
products							1924.85	1913.96	1886.71	2393.14	2383.09	2437.8	
Covariance	2.800	3.452	3.484	1.868	1.936	1.923	3.774	3.746	3.699	4.683	4.664	4.771	
N	512	512	346	511	512	512	511	512	511	512	512	512	

Table 8 Summary of consumer whistleblowing intention and gender

I am likely to blow the whistle to appropriate authorities outside the firm								
Gender	1	2	3	4	5	6	7	Total
Female	19	1	4	81	8	6	171	290
Male	63	1	0	56	4	2	93	219
Prefer not to say	0	0	0	1	0	0	1	2
Total	82	2	4	138	12	8	265	511
I am likely to blow the whistle by providing the public with information								
Gender	1	2	3	4	5	6	7	Total
Female	21	2	3	76	10	6	172	290
Male	63	2	1	55	1	5	93	220
Prefer not to say	0	0	0	1	0	0	1	2
Total	84	4	4	132	11	11	266	512
I am likely to blow the whistle to respective authorities outside the firm								
Gender	1	2	3	4	5	6	7	Total
Female	21	1	3	82	6	7	170	290
Male	62	0	2	56	4	3	93	220
Prefer not to say	0	0	0	1	0	0	1	2
Total	83	1	5	139	10	10	264	512

Table 9 Summary of Number of Food Shop and Consumer Whistleblowing Intention

I am likely to blow the whistle to appropriate authorities outside the firm								
Food shop a month	1	2	3	4	5	6	7	Total
More than three times	11	1	2	25	6	7	81	133
Once	10	1	3	28	5	6	80	133
Once, Twice	12	0	0	12	1	0	11	36
Three times	0	0	0	0	1	0	0	1
Twice	34	0	0	43	1	2	54	134
Twice, Three times	0	0	0	0	0	0	1	1
Total	82	2	4	136	12	8	262	506
I am likely to blow the whistle to appropriate authorities outside the firm								
Food shop a month	1	2	3	4	5	6	7	Total
More than three times	10	1	3	28	5	6	80	133
Once	12	0	0	12	1	0	11	36
Once, Twice	0	0	0	0	1	0	0	1
Three times	26	1	1	53	4	0	116	201
Twice	34	0	0	43	1	2	54	134
Twice, Three times	0	0	0	0	0	0	1	1
Total	82	2	4	136	12	8	262	506
I am likely to blow the whistle to respective authorities outside the firm								

Food shop a month	1	2	3	4	5	6	7	Total
More than three times	10	1	3	28	4	7	80	133
Once	12	0	0	13	0	0	11	36
Once, Twice	0	0	0	1	0	0	0	1
Three times	27	0	1	53	4	1	116	202
Twice	34	0	1	41	2	2	54	134
Twice, Three times	0	0	0	1	0	0	0	1
Total	83	1	5	137	10	10	261	507

Table 10 Summary of Money Spent on Food in a month

I am likely to blow the whistle by providing the public with information								
Spend on food shop a month	1	2	3	4	5	6	7	Total
Less than £100	24	2	0	24	0	1	20	71
Less than £150	36	1	1	54	3	1	98	194
Less than £200	5	0	1	18	4	3	51	82
Less than £50	10	0	0	8	0	1	2	21
More than £200	9	1	2	28	4	5	95	144
Total	84	4	4	132	11	11	266	512
I am likely to blow the whistle to appropriate authorities outside the firm								

Spend on food shop a month	1	2	3	4	5	6	7	Total
Less than £100	24	1	0	24	1	1	19	70
Less than £150	34	1	1	57	3	2	96	194
Less than £200	5	0	0	20	3	1	53	82
Less than £50	10	0	0	6	2	1	2	21
More than £200	9	0	3	31	3	3	95	144
Total	82	2	4	138	12	8	265	511
I am likely to blow the whistle to respective authorities outside the firm								
Spend on food shop a month	1	2	3	4	5	6	7	Total
Less than £100	25	0	0	26	0	2	18	71
Less than £150	35	1	2	55	3	2	96	194
Less than £200	5	0	0	19	3	2	53	82
Less than £50	9	0	0	9	0	1	2	21
More than £200	9	0	3	30	4	3	95	144
Total	83	1	5	139	10	10	264	512

Table 11 Summary of Age and Consumer Whistleblowing Intention

I am likely to blow the whistle by providing the public with information								
Age	1	2	3	4	5	6	7	Total
18-24	32	1	0	25	3	1	20	82
25-34	34	1	2	60	6	5	88	196

35-44	14	1	1	30	1	3	78	128
45-54	3	1	1	12	1	1	43	62
55-64	1	0	0	4	0	1	32	38
65 and above	0	0	0	1	0	0	5	6
Total	84	4	4	132	11	11	266	512
I am likely to blow the whistle to appropriate authorities outside the firm								
Age	1	2	3	4	5	6	7	Total
18-24	30	0	0	27	3	2	19	81
25-34	34	0	2	61	7	4	88	196
35-44	14	2	1	32	1	0	78	128
45-54	3	0	1	12	1	2	43	62
55-64	1	0	0	5	0	0	32	38
65 and above	0	0	0	1	0	0	5	6
Total	82	2	4	138	12	8	265	511
I am likely to blow the whistle to respective authorities outside the firm								
Age	1	2	3	4	5	6	7	Total
18-24	30	0	0	29	1	3	19	82
25-34	34	0	2	62	7	4	87	196
35-44	15	0	3	31	1	0	78	128
45-54	3	1	0	12	1	2	43	62
55-64	1	0	0	4	0	1	32	38
65 and above	0	0	0	1	0	0	5	6
Total	83	1	5	139	10	10	264	512

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Table 12 Summary of Education Background and Consumer Whistleblowing Intention

I am likely to blow the whistle by providing the public with information								
Education	1	2	3	4	5	6	7	Total
A- Level/ BTEC level 1,2,3	15	0	0	10	0	0	10	35
BTEC HNC/HND	17	0	1	15	0	0	15	48
GCSE and below	0	0	0	1	0	0	0	1
Graduate	38	2	1	62	5	4	90	202
Graduate, A- level/ BTEC Level 1,2,3, GCSE and below	0	0	0	0	0	1	0	1
Postgraduate	14	2	2	44	6	6	150	224
Total	84	4	4	132	11	11	265	511
I am likely to blow the whistle to appropriate authorities outside the firm								
Education	1	2	3	4	5	6	7	Total
A-Level/ BTEC level 1,2,3	15	0	0	11	0	0	9	35
BTEC HNC/HND	17	0	1	15	0	0	15	48
GCSE and below	0	0	0	0	0	0	1	1
Graduate	37	1	0	63	7	3	90	201

Graduate, A- level/ BTEC Level 1,2,3, GCSE and below	0	0	0	0	0	0	1	1
Postgraduate	13	1	3	49	5	5	148	224
Total	82	2	4	138	12	8	264	510
I am likely to blow the whistle to respective authorities outside the firm								
Education	1	2	3	4	5	6	7	Total
A-Level/ BTEC level 1,2,3	14	0	0	12	0	0	9	35
BTEC HNC/HND	17	0	1	15	0	0	15	48
GCSE and below	0	0	0	0	0	0	1	1
Graduate	38	0	1	64	5	5	89	202
Graduate, A- level/ BTEC Level 1,2,3, GCSE and below	0	0	0	0	0	0	1	1
Postgraduate	14	1	3	48	5	5	148	224
Total	83	1	5	139	10	10	263	511

Table 13 Summary of Ethnicity and Consumer Whistleblowing Intention

I am likely to blow the whistle by providing the public with information								
Ethnicity	1	2	3	4	5	6	7	Total
Asian/ Asian British	19	0	0	19	2	1	26	67
Black African/ Caribbean/ Black British	18	0	0	28	0	0	97	143
Mixed ethnic group	23	0	0	45	2	3	58	131
Other ethnic group	0	1	0	1	0	0	1	3
White	24	3	3	39	7	7	84	167
Total	84	4	3	132	11	11	266	511
I am likely to blow the whistle to appropriate authorities outside the firm								
Ethnicity	1	2	3	4	5	6	7	Total
Asian/ Asian British	19	0	0	19	5	0	24	67
Black African/ Caribbean/ Black British	17	0	0	29	0	1	96	143
Mixed ethnic group	23	0	0	46	3	1	58	131
Other ethnic group	0	1	0	1	0	0	1	3
White	23	1	3	43	4	6	86	166
Total	82	2	3	138	12	8	265	510
I am likely to blow the whistle to respective authorities outside the firm								

Ethnicity	1	2	3	4	5	6	7	Total
Asian/ Asian British	18	0	0	23	2	1	23	67
Black African/ Caribbean/ Black British	17	0	0	29	0	1	96	143
Mixed ethnic group	23	0	0	46	3	1	58	131
Other ethnic group	1	0	1	0	0	0	1	3
White	24	1	3	41	5	7	86	167
Total	83	1	4	139	10	10	264	511

Table 14 Summary of Annual income and Consumer whistleblowing intention

I am likely to blow the whistle by providing the public with information								
Annual income	1	2	3	4	5	6	7	Total
£10,000- £49,999	47	2	2	74	7	5	126	263
£100,000- £149,999	1	0	0	1	0	0	39	41
£50,000- £99,999	8	0	1	31	2	3	76	121
£0- £9,999	28	2	1	25	2	3	20	81
150,000	0	0	0	1	0	0	1	2
Total	84	4	4	132	11	11	262	508

I am likely to blow the whistle to appropriate authorities outside the firm								
Annual income	1	2	3	4	5	6	7	Total
£10,000-£49,999	47	2	4	75	5	5	125	263
£100,000-£149,999	1	0	0	1	0	0	39	41
£50,000-£99,999	8	0	0	35	2	0	76	121
£0- £9,999	26	0	0	26	5	3	20	80
150,000	0	0	0	1	0	0	1	2
Total	82	2	4	138	12	8	261	507
I am likely to blow the whistle to respective authorities outside the firm								
Annual income	1	2	3	4	5	6	7	Total
£10,000-£49,999	48	1	5	75	4	6	124	263
£100,000-£149,999	1	0	0	1	0	0	39	41
£50,000-£99,999	8	0	0	34	2	1	76	121
£0- £9,999	26	0	0	28	4	3	20	81
150,000	0	0	0	1	0	0	1	2
Total	83	1	5	139	10	10	260	508

Table 15 model summary, coefficient and collinearity diagnostic of pressure

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. Change
1	.782 ^a	.611	.607	1.442	.611	178.965	3	342	.000

Coefficients ^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error				Tolerance	VIF
1	{Constant}	.356	.199		1.789	.075		
	2. I am very likely to blow the whistle because of my sense of moral obligation	.131	.094	.127	1.393	.165	.138	7.256

3. Skip to number 4 if you do not practice religion. I am very likely to blow the whistle because I follow and practice religion	.109	.078	.108	1.405	.161	.191	5.232
4. I am likely to blow the whistle because it's my duty	.584	.090	.567	6.491	.000	.149	6.696

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				{Constant}	2. I am very likely to blow the whistle because of my sense of moral obligation	3. Skip to number 4 if you do not practice religion. I am very likely to blow the whistle because I follow and practice religion	4. I am likely to blow the whistle because it's my duty
1	1	3.847	1.000	.01	.00	.00	.00
	2	.117	5.729	.99	.01	.02	.02
	3	.022	13.307	.00	.08	.94	.31

4	.014	16.447	.00	.91	.04	.67
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Table 16 model summary, coefficient and collinearity diagnostic of opportunity

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. Change
1	.894 ^a	.799	.798	1.055	.799	671.609	3	507	.000

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	{Constant}	.205	.116		1.775	.077		
	8. I am likely to not blow the whistle if the firm hinders reporting of wrongdoing by not providing adequate reporting channels	.358	.035	.360	10.130	.000	.315	3.177

9. I think internal reporting has shown to be less effective hence continuous unethical food practices	.009	.024	.009	.371	.711	.752	1.330
10. I am very likely to encounter retaliation by the food companies	.579	.036	.570	16.125	.000	.317	3.154

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				{Constant}	8. I am likely to not blow the whistle if the firm hinders reporting of wrongdoing by not providing adequate reporting channels	9. I think internal reporting has shown to be less effective hence continuous unethical food practices	10. I am very likely to encounter retaliation by the food companies
1	1	3.647	1.000	.01	.01	.01	.01
	2	.213	4.135	.29	.10	.09	.10
	3	.089	6.415	.70	.00	.90	.01
	4	.051	8.448	.00	.88	.00	.88

Table 17 model summary, coefficient and collinearity diagnostic of capability

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.934 ^a	.873	.872	.800	.873	861.905	4	501	.000

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error				Tolerance	VIF
1	{Constant}	.169	.087		1.954	.051		
	12. I am more likely to blow the whistle because I have immunity to retaliation	.304	.043	.310	7.050	.000	.131	7.615
	13. I am likely to blow the whistle because I have the mental ability to think effectively and efficiently	.249	.060	.250	4.120	.000	.069	14.554

15. I am more likely to blow the whistle because I have the necessary tech skills	-.046	.052	-.047	-.889	.374	.089	11.228
14. I am confident to speak out about unethical food practices	.440	.058	.447	7.528	.000	.072	13.912

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				{Constant}	12. I am more likely to blow the whistle because I have immunity to retaliation	13. I am likely to blow the whistle because I have the mental ability to think effectively and efficiently	15. I am more likely to blow the whistle because I have the necessary tech skills	14. I am confident to speak out about unethical food practices
1	1	4.818	1.000	.01	.00	.00	.00	.00
	2	.140	5.862	.98	.01	.00	.01	.00
	3	.021	15.000	.00	.77	.00	.06	.14
	4	.013	19.436	.01	.00	.31	.76	.07

5	.007	25.951	.00	.21	.68	.17	.79
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Table 18 model summary, coefficient and collinearity diagnostic of rationalisation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. Change
1	.832 ^a	.692	.691	1.269	.692	571.501	2	509	.000

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	{Constant}	.277	.136		2.039	.042		
	17. I think reporting of unethical food products is likely to be ineffective	.724	.026	.746	27.827	.000	.842	1.187
	18. I am likely to blow the whistle to help someone else by reporting unethical food practices	.181	.027	.176	6.580	.000	.842	1.187

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Variance Proportions
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		Condition Index	{Constant}	17. I think reporting of unethical food products is likely to be ineffective	18. I am likely to blow the whistle to help someone else by reporting unethical food practices
1	1	2.705	1.000	.02	.03
2	2	.201	3.671	.19	.94
3	3	.094	5.358	.79	.03
					.02
					.08
					.90

Table 19 model summary, coefficient and collinearity diagnostic of seriousness of wrongdoing

Appendix five- model summary, coefficients, and collinearity diagnostic of seriousness of wrongdoing

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					
					R Square Change	F Change	df1	df2	Sig. Change	F
1	.856 ^a	.733	.731	1.145	.733	344.315	4	502	.000	

Coefficients^a

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	Collinearity Statistics

	B	Std. Error	Beta			Tolerance	VIF
{Constant}	.944	.120		7.879	.000		
20. I am likely to blow the whistle due to contamination in food production	.667	.036	.688	18.467	.000	.384	2.606
21. I am not likely to blow the whistle due to wrongful substitution of low-quality ingredients in production of food	.208	.046	.218	4.487	.000	.226	4.420
23. I am likely to blow the whistle because of theft in food production	-.236	.047	-.252	-5.039	.000	.212	4.708
24. I am likely to blow the whistle because of mis presentation of food	.210	.050	.224	4.229	.000	.190	5.257

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				{Constant}	20. I am likely to blow the whistle due to contamination in food production	21. I am not likely to blow the whistle due to wrongful substitution of low-quality ingredients in production of food	23. I am likely to blow the whistle because of theft in food production	24. I am likely to blow the whistle because of mis presentation of food
1	1	4.698	1.000	.01	.00	.00	.00	.00
	2	.172	5.225	.78	.00	.02	.04	.02
	3	.059	8.906	.21	.91	.03	.13	.00
	4	.039	10.968	.00	.01	.93	.35	.06
	5	.032	12.163	.00	.07	.02	.48	.92

Table 20 model summary, coefficient and collinearity diagnostic of laws and policies

Appendix six- model summary, coefficients and collinearity diagnostic of laws and policies

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. Change
1	.966 ^a	.933	.933	.534	.933	3541.173	2	509	.000

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	{Constant}	.104	.039		2.660	.008		
	26. I am likely to blow the whistle because the food and safety act has been created to encourage reporting of unethical food practices	.383	.061	.382	6.231	.000	.035	28.464

27.I am likely to blow the whistle because the food and safety act has been legitimately created and should be obeyed	.586	.061	.588	9.610	.000	.035	28.464
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Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				{Constant}	26. I am likely to blow the whistle because the food and safety act has been created to encourage reporting of unethical food practices	27.I am likely to blow the whistle because the food and safety act has been legitimately created and should be obeyed
1	1	2.727	1.000	.04	.00	.00
	2	.267	3.196	.96	.01	.01
	3	.007	20.467	.00	.99	.99

Table 21 model summary, coefficient and collinearity diagnostic of perceived Behavioural control

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.644 ^a	.415	.414	1.707	.415	361.795	1	510	.000

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	{Constant}	2.077	.150		13.831	.000		
	29. I am likely to not blow the whistle because I tend to think in great depth about negative feedback concerning food	.631	.033	.644	19.021	.000	1.000	1.000

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				{Constant}	29. I am likely to not blow the whistle because I tend to think in great depth about negative feedback concerning food
1	1	1.865	1.000	.07	.07
	2	.135	3.711	.93	.93

Table 22 model summary, coefficient and collinearity diagnostic of Social Norms

Appendix eight- model summary, coefficients, and collinearity diagnostic of Social Norms

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.987 ^a	.973	.973	.382	.973	9238.094	2	507	.000

Coefficients^a

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	Collinearity Statistics

	B	Std. Error	Beta			Toleranc e	VIF
{Constant}	.084	.039		2.165	.031		
1 31. I am more likely to blow the whistle because I know my friends would be proud of me	.538	.038	.540	14.243	.000	.037	27.308
32. I am more likely to blow the whistle because I know my co- workers would be proud of me	.448	.038	.451	11.888	.000	.037	27.308

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				{Constant}	31. I am more likely to blow the whistle because I know my friends would be proud of me	32. I am more likely to blow the whistle because I know my co- workers would be proud of me
1	1	2.864	1.000	.02	.00	.00
	2	.133	4.641	.98	.01	.01
	3	.004	28.401	.00	.99	.99

Table 23 model summary, coefficient and collinearity diagnostic of attitude

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. Change
1	.972 ^a	.945	.945	.527	.945	4350.342	2	509	.000

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	{Constant}	.044	.059		.749	.454		
	34. I am likely to not blow the whistle because reporting of unethical food production will prevent harm to the firm	.147	.017	.155	8.392	.000	.317	3.152

35. I am likely to blow the whistle because reporting of wrongful production of food is in public interest	.848	.019	.840	45.389	.000	.317	3.152
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Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				{Constant}	34. I am likely to not blow the whistle because reporting of unethical food production will prevent harm to the firm	35. I am likely to blow the whistle because reporting of wrongful production of food is in public interest
1	1	2.855	1.000	.02	.01	.01
	2	.115	4.985	.89	.14	.04
	3	.030	9.778	.09	.85	.96

Table 24 model summary, coefficient and collinearity diagnostic of consumer whistleblowing intention

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.972 ^a	.945	.945	.530	.945	4349.396	2	508	.000

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	{Constant}	.097	.059		1.648	.100		
	37. I am likely to blow the whistle to appropriate authorities outside the firm	.538	.075	.534	7.220	.000	.020	50.282
	38. I am likely to blow the whistle to respective authorities outside the firm	.444	.074	.441	5.966	.000	.020	50.282

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Variance Proportions
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		Condition Index	{Constant}	37. I am likely to blow the whistle to appropriate authorities outside the firm	38. I am likely to blow the whistle to respective authorities outside the firm
1	1	2.888	1.000	.02	.00
1	2	.111	5.111	.98	.00
	3	.002	42.441	.00	1.00
					.99

Table 25 model summary, coefficient and collinearity diagnostic of Brand trust

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.988 ^a	.976	.976	.342	.976	6788.033	3	508	.000

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
{Constant}	.010	.041		.235	.814		
40. My preferred brand guarantees my satisfaction	.524	.054	.520	9.771	.000	.017	59.178
41. I am confident about my preferred brand	.349	.045	.349	7.708	.000	.023	42.843
42. My preferred brand meets my highest expectations all the time	.123	.055	.122	2.229	.026	.016	62.735

Collinearity Diagnostics^a

Model Dimension	Eigenvalue	Condition Index	Variance Proportions			
			{Constant }	40. My preferred brand guarantees my satisfaction	41. I am confident about my preferred brand	42. My preferred brand meets my highest expectations all the time
1	3.890	1.000	.01	.00	.00	.00
2	.106	6.054	.99	.00	.00	.00
3	.002	42.193	.00	.23	.99	.12

4	.001	53.205	.00	.77	.01	.87
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Table 26 model summary, coefficient and collinearity diagnostic of boycott

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. Change
1	.942 ^a	.887	.886	.767	.887	1331.057	3	508	.000

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
{Constant}	.069	.088		.787	.432		
1 44. I am likely to feel better about myself if I manage to boycott the brand	.414	.113	.405	3.657	.000	.018	55.103
45. I am likely to boycott this brand	.009	.105	.009	.090	.928	.021	48.584
46. I intend to boycott this brand	.542	.109	.531	4.962	.000	.019	51.525

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				{Constant}	44. I am likely to feel better about myself if I manage to boycott the brand	45. I am likely to boycott this brand	46. I intend to boycott this brand
1	1	3.880	1.000	.01	.00	.00	.00
	2	.116	5.786	.98	.00	.00	.00
	3	.002	42.735	.01	.05	.91	.48
	4	.002	46.393	.00	.95	.09	.51

Table 27 model summary, coefficient and collinearity diagnostic of negative word of mouth

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.982 ^a	.965	.964	.437	.965	6933.542	2	509	.000

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
{Constant}	.095	.046		2.046	.041		
1 48. I frequently go into details when I tell others about unethical food practices	.571	.043	.570	13.417	.000	.039	25.901
49. I talk about unethical food practices more than I talk about anything food related	.411	.042	.417	9.832	.000	.039	25.901

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				{Constant}	48. I frequently go into details when I tell others about unethical food practices	49. I talk about unethical food practices more than I talk about anything food related
1	1	2.873	1.000	.02	.00	.00
	2	.124	4.815	.96	.01	.01

3	.003	28.658	.02	.99	.99
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Table 28 summary of internal whistleblowing

<u>Internal Whistleblowers</u>	<u>Authors</u>
Managers and professionals	Chiu 2003
Managers at different hierarchical levels	Nayir and Herzig 2012, Tavakoli et al 2003
Professionals	MacNab and Worthley 2008
Internal auditors	Robinson et al 2012
Internal auditors and management accountants	Seifert et al.2010
Employees	Bj!Zrkelo et al. 2012; Callahan and Collins 1992; Miceli and Near 1984; Singer et al.1998; Stansbury and Victor 2009
Lower-level employees	Goal et al 2015
Working population	Kaptein 2011
Bank employees	Zhang et al 2009
Public sector employees	Cassematis and Wortley 2013
Government officials	Park et al 2005
Policies officers	Park and Blenkinsopp 2009
Military employees	Near et al. 2004
Student samples were used as proxy for employees	Bhal and Dadhich 2011; Dalton and Radtke 2013; Kaplan and Schultz 2007; Kaplan et al.2009; Liyanarachchi and Newdick 2009; Park et al.2008,2014

Table 29 summary of external whistleblowing

Consultants	Ayers and Kaplan 2005
Auditors	Taylor and Curtis 2010

Table 30 measurements of unit's table

Variable	Measurement
Pressure	<p>Using items from Latan et al. {2020} using a 7-point Likert scale. 1= not likely to 7= very likely</p> <ul style="list-style-type: none"> • Social pressure to do the right thing. • My sense of moral obligation to report wrongdoing. • My religion leading me to do the right thing. • My sense of duty to reporting wrongdoing.
Opportunity	<p>Using items from Latan et al. {2020} using a 7-point Likert scale. 1= not likely to 7= very likely</p> <ul style="list-style-type: none"> • The firm hinders reporting. • Challenges are faced in the process of reporting. • Retaliation by the food companies. • Internal reporting is likely to be ineffective in ending the unethical practices.

Capability	<p>Using items from Latan et al. {2020} using a 7-point Likert scale. 1= not likely to 7= very likely</p> <ul style="list-style-type: none"> • Consumers mental ability to think effectively about speaking out. • Having the confidence to disclose the unethical food practices. • Being in a good position to speak out about the wrongdoing. • Having necessary technological skills. • Immunity to retaliation.
Rationalisation	<p>Using items from Latan et al. {2020} using a 7-point Likert scale. 1= not likely to 7= very likely</p> <ul style="list-style-type: none"> • Helping someone else by reporting the unethical practices

	<ul style="list-style-type: none"> • Did not think this action is so bad • Did not thoroughly consider the action • Not considering if the action was right or wrong at the time • Helping others in the situation
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Laws and policies	<p>Using items from Musa et al., {2018} using a 5-point Likert scale. 1= strongly disagree and 5= strongly agree</p> <ul style="list-style-type: none"> • The food and safety standards act have been created in an ethical and normative framework. • The food and safety standards act encourages reporting of unethical food practices. • The enforcers of food and safety standards act are legitimate, and we should obey the act • The enforcers of the food and safety act are consistent with what in unethical and ethical in food production
Seriousness of wrongdoing	<p>Adopted from the works of Scultz {1993}. With modifications. Likert scale 1= very low and 7 very high</p> <ul style="list-style-type: none"> • Please assess the seriousness of mislabelling in food production. • Please assess the seriousness of theft in food production. • Please assess the adulteration of ingredients in the production of food. • Please assess the mis presentation of products. • Please assess the substitution of low-quality products in food
Attitude	<p>Using items from Blenkinsopp {2009} 5-point Likert scale 1= not true and 5= very true</p> <ul style="list-style-type: none"> • Reporting of unethical food production will prevent harm to the firm

	<ul style="list-style-type: none"> • Reporting of unethical food will control food fraud <p>Using 5-point Likert 1= not very important and 5 very important.</p> <ul style="list-style-type: none"> • Reporting of food fraud is done in public interest • Reporting of food fraud is morally appropriate • It is one's duty to report food fraud.
Perceived behavioural control	<p>Using items from Blenkinsopp {2009} using 5 Likert scale 1= not likely and 5= very likely</p> <ul style="list-style-type: none"> • Reporting of the wrongdoing will face challenges • The reporting of unethical food production likely to be ineffective

Social norms	<p>Using items from Blenkinsopp {2009} using 5-point Likert 1= very little and 5= very much</p> <ul style="list-style-type: none"> • How proud of you do you think your co-workers would be if you reported unethical food practices • How proud of you do you think your family would be if you reported unethical food practices • How proud of you do you think your friends would be if you reported unethical food practices • How proud of you do you think your neighbours would be if you reported unethical food practices <p>Using 5-point Likert 1= not much and 5= very much</p> <ul style="list-style-type: none"> • How much do you care whether co-workers would approve or disapprove of you reporting unethical food practices. • How much do you care whether family would approve or disapprove of you reporting unethical food practices. • How much do you care whether friends would approve or disapprove of you reporting unethical food practices.
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	<ul style="list-style-type: none"> • How much do you care whether neighbour would approve or disapprove of you reporting unethical food practices.
Brand Trust	<p>Using items from Sahin et al {2011} using a Likert 1= strongly disagree and 7= strongly agree.</p> <ul style="list-style-type: none"> • The preferred luxury brand never disappoints. • The luxury brand guarantees my satisfaction. • I am confident about my preferred luxury brand. • This preferred luxury brand meets my expectations.
Word of mouth	<p>Using items from Naumann et al., {2020}. Likert scale 1= strongly disagree and 7 strongly agree.</p> <ul style="list-style-type: none"> • I mention unethical food practices to others frequently. • When I tell others about unethical food practices I tend to go in great detail • I have told more people about unethical food practices than I have talked about other food related topics
Consumer whistleblowing intention	<p>Using items from Blenkinsopp {2009}, using a Likert scale 1= strongly disagree and 7= strongly agree.</p> <ul style="list-style-type: none"> • report the wrongdoing using reporting channels outside the firm • provide outsiders with information about unethical food practices • provide the general public about it • report the unethical act to the right authorities outside the firm

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