

The role of religiosity on information asymmetry concerns and search behaviour in UK's convenience food market: A focus on Muslim minorities.

Aisha Ijaz

Abstract

In situations where information asymmetries exist in the convenience food market, little is known about how such knowledge failures shape the purchase behaviour of religious minorities living in a non-dominant religious context. The purpose of this paper is to understand Muslim religiosity's connection with information asymmetry concerns and search behaviour when buying convenience food products. Cross-sectional survey data were collected from 141 Muslims in Liverpool, UK using a face-to-face contact approach. Data were analysed by a means of descriptive statistics and Pearson's correlations. In the purchase of convenience foods, findings show that Muslim religiosity did positively correlate with halal importance. There was no relationship found between religiosity and information asymmetry concerns based on safety, quality, selection uncertainty and labelling inadequacies when selecting appropriate convenience foods. Also, religiosity was associated with information search intensity and sources used by Muslims. Results and implications are discussed for policy-makers and advertisers.

KEYWORDS: Muslim Religiosity, Information Asymmetry, Consumer Behaviour, Convenience Food, UK

Introduction

A habitual approach to food has become a new consumption style, as modern busy households are cooking less and relying more on commercially pre-prepared products (often through processing) (Barilla Center for Food and Nutrition, 2009; Buckley, Cowan and McCarthy, 2007). Products referred to as convenience foods require minimal preparation and/or are ready-to-eat like frozen meals, and shelf-stable foods in tins, pouches or cartons, and includes snack items (Poti *et al.*, 2015). The need for convenience foods is driven by a number of lifestyle issues, some of which include an ageing population, changing household structures, individualism, female participation in labour force and longer working hours, declining cooking skills, a breakdown of traditional mealtimes and value for money (Sheely, 2008). Due to this, the Convenience Food segment continues to grow in popularity each year, particularly in the West (Statistica, 2021a), because of the time and effort it saves consumers in preparing meals.

The food industry is said to be characterised with imperfect or asymmetric information, whereby producers have more knowledge about products than the consumer (Nestorowicz, 2014; Hennessey, 1996; Bergh *et al.*, 2018). As food production becomes more industrialised and complex in western cultures, consumers struggle to make well founded buying choices because necessary information about the safety and quality of products are not disclosed by producers (Kolodinsky, 2012; Hennessey, 1996; Minarelli, Galioto and Viaggi, 2016). Despite preventative policies in place to promote better health (Kiszko *et al.*, 2014; Jones *et al.*, 2019), hazardous practices are still on-going to such an extent that it is provoking long-term market failures in the form of rising levels of obesity (WHO, 2016, 2021; The Health Foundation, 2020). The number of adulterated, mislabelled and unsafe products available for sale (Kolodinsky, 2012; Hart, 1952; Knox, 2000; Rizzuti, 2020) has caused people to become more involved with and concerned about the foods they buy (Garcia, Fearn and Wood, 2010).

Evidently, the marketplace does not act optimally in society's interest (Fuhrman, 2018; Karnani, McFerran and Mukopadhyay, 2016) since this industry balances the costs of providing information with business profitability (Kolodinsky, 2012).

Food producers have long met the needs of consumers, but less consideration has been given to minority religions in the West. Research has shown the significant role religion plays in influencing the buyer's decision-making processes, from shaping their perceptions and attitudes towards products to determining buying preferences (Engel, 1976; Hirschman, 1983; LaBarbera, 1987; Bailey and Sood, 1993; Haron, Ahmad & Planisek 1994; Delener, 1994; Fam, Waller and Erdogan, 2004; Anuar, Adam and Omar, 2012 Pace, 2013; Farah and Samad, 2014). These same works often overlook the importance of the buying environment on people's choices and behaviour. Bonne *et al* (2007) reported that consumption decisions within a religious context are likely to differ significantly from the purchase situation where religion does not play a key role in shaping the values of society. With this said, research on the purchase behaviour of religious minorities living in a non-dominant religious context are few (Mokhlis, 2006; Hirschman, Ruvio and Touzani, 2011). This is surprising since religious dietary guidelines are still observed by enthusiasts living in secular societies (Fischer, 2016; Bonne *et al.*, 2007), such that devout Muslims will buy Halal products and Jewish adherent will select Kosher foods. Similarly, Buddhists, Hindus, and Sikhs in the West may follow a vegetarian diet completely, or refrain from eating meat on certain days of the week.

A literature search on religion and consumer behaviour between 1976 to 2017 exposed that the asymmetric information problem in the western food market has not yet been studied. Consequently, the current study aims to fill this knowledge gap by investigating the relationship between religiosity and information asymmetry concerns among Muslims in the UK's convenience food market. Following this, the study seeks to understand religiosity's association with the information search behaviour of this same minority group. The study is

relevant to improve understanding on information asymmetry concerns from a minority religion perspective, showing that religious consumption fears in western cultures go beyond meat food purchases and can include other food categories. The findings of this research will directly benefit food policy-makers who lack knowledge about the buying difficulties of Muslim minorities in the UK, and which prevents adherent from making informed convenience food choices. The paper will also profit marketers who are unaware of the Muslim subpopulation's difficulties in selecting religiously suitable convenience foods. Emphasis is placed on strategies that can be used by marketers to develop effective marketing communication for religious communities in the UK with the intention of alleviating the problem of information asymmetry. This paper is one of the first studies investigating information asymmetry problems of Muslim minorities in the UK's convenience food market. Implications are discussed in relation to religion, information asymmetry concerns and information sources used by devotees to cope with market uncertainties.

Conceptual Framework

Religion in the UK

The 'United Kingdom' is a sovereign state with a population of 66.8 million people, and is made up of four countries: England, Scotland, Wales and Northern Ireland (ONS, 2021). The UK's framework is recognisably Judaeo-Christian, but powerful pressures are calling that structure into question because members of that society are given the free-choice to believe or not (Triggs, 2010; Owens, 2015; Pepinster, 2021). The country sees secularism on the rise with many claiming not to follow a religion or to have lost faith (Sherwood, 2017b: 2019). In light of this, Christianity remained that largest religion in the UK, but figures are gradually declining (Sherwood, 2017a: 2021). What's more, the country has seen an increased diversity of religious

life in that the number of people of non-Christians religions has risen, especially Muslims and Hindus (Sherwood, 2017b; Hackett and McClendon, 2017). Thus, the UK offers an ideal non-dominant religious setting to examine the purchase behaviour of religious minorities.

From the 109 studies reviewed between 1976 to 2017, only five studies assessed religiosity's role on food purchase behaviour in the UK (Ahmed, 2008; Ahmad and Juwaidah, 2015; Baazeem; Ibrahim, 2015, Wright, 2015). None of these works examined information asymmetry concerns among members of the same religion with varying degrees of religiousness. To fill this gap in knowledge, the self-perceived strength of one's religious affiliation (i.e. the extent to which a person connects with a religion) will be considered as a subjective measure of religiosity (Alston, 1975). Using self-perceived strength of one's religious affiliation as a single construct to measure religiosity has been used in past works to examine consumer attitudes (Reed, 1991; Berthold and Ruch, 2014) and behaviour (Delener and Schiffman, 1988; Delener, 1989, 1994), which includes food-related buying activities (Bonne *et al.*, 2007; Borges *et al.*, 2021).

Muslim Consumers

Followers of Islam were selected as the religious group of interest for two reasons. First, Muslims have shown to purchase products that adhere to Islamic dietary guidelines and are halal (religiously permissible to consume) (Jusmaliani and Nasution, 2013; Varlini, Erdem and Avcilar, 2016), regardless of where they live (Bonne *et al.*, 2007; Ahmed *et al.*, 2014). Dietary recommendations followed by Muslims are detailed in the Qur'an (Divine Book) and the Hadith (voluminous record of traditions and sayings of Prophet Muhammad's life) (Fischer, 2016). Table 1 provides an overview of these dietary instructions, which generally refers to the type of animals that cannot be eaten (see Table 1). Because of the frequent reference to animals

in the Qur'an and Hadith, researchers often examine the consumption behaviour of Muslims in meat purchases (Bonne *et al.*, 2007; Razzaque and Chaudhry, 2013; Heiman *et al.*, 2004; Ahmad, 2008; Jusmaliani and Nasution, 2013; Soon and Wallace, 2017; Mostafa and Elseidi, 2016), overlooking the consumption of other food categories like convenience products.

Prior studies have indicated that the consumer's level of religiosity can influence the extent to which a Muslim follows Islamic dietary guidelines by buying halal foods (Varlini *et al.*, 2016; Mukhtar and Butt, 2012; Shreim, 2009; Alhazmi, 2013). However, Khenfer and Roux (2012) stress that religiosity is not a stable characteristic in minority cultural settings because sociocultural factors preceding the purchasing situation conjointly affect the consumer's religious commitment, and this consequently affect buying behaviour. Supporting this view, some studies (Razzaque and Chaudhry, 2013; Bonne *et al.*, 2007; Mukhtar and Butt, 2013) have shown that buying foods in non-Muslim cultures can be highly-involving for devout individuals, due to the religious importance attached of buying halal and uncertainty over the shariah compliancy of western goods.

The second reason for selecting Muslims as the group of interest is because Islam is the second largest religious group in the UK and the fastest growing (Tomkins, 2011; Gani, 2015; Lipka and Hackett, 2017). Such works can open up many opportunities for the country's developing halal market. In 2017, Muslims represented 5.1% of the total UK population with an estimated 3.4 million adherents (ONS, 2018). More recently, Statistica (2021b) approximated the Muslim population at 4.13 million followers, making up 6.3% of the UK population. With a higher proportion of children and a lower ratio of elderly people, the Muslim population in the country has nearly doubled in the past 10 year (Gani, 2015; Statistica, 2021b). When looking forward, Pew Research Center's (2015) original population growth projections for religious groups indicate that Muslims in the UK are expected to increase to 6.5 million by 2050 (when

considering a zero-immigration scenario), whereas Statistica (2021b) estimate is considerably more.

Consumption Patterns

The vast majority of Muslims in the UK live in England: 3,372,966 members (5.17% of the population) (ONS, 2021), with many likely to have adopted the eating patterns and food habits of their host country by buying convenience food solutions that fit in with their busy lifestyle (Businesswire, 2017; Powers, 2014; Smale, 2014). Consumer insights by the Agriculture and Horticulture Development Board (Stannard and Clarke, 2020) talked about how halal food and beverage industry in the UK is big business, showing scope to enhance product ranges within the convenience food market. This growing trend for halal convenience food products is also supported by other sources (Stannard and Clarke, 2020; Statistica, 2020). Yet, very few studies have examined the convenience food purchase behaviour of Muslims in the UK. Such research would allow companies to see new opportunities in catering for the needs of this minority religion by offering convenience food that are halal, western-inspired and in line with cultural trends (i.e. being healthy, organic, sustainable, and ethical). However, at present few products endorse the halal logo, and this causes Muslim adherents to be uncertain about the items they buy in terms of meeting their religious dietary requirements (Ahmed and Juwaidah, 2015). The last row in Table 1 reveals substances found in everyday convenience foods which would make products impermissible for Muslims to consume.

Main dietary custom	Eat only halal beef, lamb, poultry and fish (with fins and scales). This includes ensuring that the correct, halal method of slaughtering animals takes place, ensuring stock is treated well prior to this, and avoiding cross-contamination.
Foods to avoid	Pigs, donkeys, dogs, cats, and mice. Predators with canine teeth including birds with claws. Insects, reptiles, snakes, scorpions, seafood (with the exception of fish), and carrion (animals or fishes that have died their own death). Animals not slaughtered using the halal method are also to be prohibited. Alcohol and other intoxicants are also avoided.
Convenience food products	Gelatine, fats, emulsifiers, stabilisers and additives from non-halal animal origin are not allowed. Also, foods with alcohol or other intoxicants used.

Table 1: Summary of Muslim consumer's religious food guidance

Academics often place religious prescriptions in the same black box of tastes, which not only overemphasised the stability of food preferences, but overlooks other cultural dietary practices that can be followed by minority religions (Ellison, 1995). It is this complexity of acculturation outcomes that may partly explain why there is a lack of research on the consumption behaviour of religious subcultures living in secular societies (Ahmed and Juwaidah, 2015). In agreement with Khenfer and Roux (2012), the consumption behaviour of religious minorities in western countries are contextually determined, and this is evident in studies showing religious consumers following cultural food diets (Doran and Natale, 2011; Ibrahim, 2015). For this reason, the present study will acknowledge both religious and other cultural foods regimes followed by Muslims. Additionally, the purchase importance attached to buying halal among Muslims in the UK will be considered as a dimension of involvement (Muncy and Hunt, 1984).

Since the halal label is absent from most convenience food items, there is likely to be seriousness of consequences involved in selecting the wrong or non-halal item.

Food and Information Asymmetry Issues

As mentioned previously, convenience foods are industrially processed, prepped, and mass-produced long before they are expected to be consumed. Time saving behaviour among consumers have resulted in an increase in trends towards the use of convenience foods in the UK. For example, recent statistics show that this market is forecasted to reach a value of £43.2 billion in 2021, up 0.3% from 2020 (Lumina Intelligence, 2021), even after medical researchers stress the negative effects processed products have on people's health (Boseley, 2019; Allen, 2019; Donnelly, 2019; Gallagher, 2019; Fuhrman, 2018; Marti, 2019; Chen *et al.*, 2020).

Asymmetry information theory suggests that food producers are likely to have more knowledge about food product and its content than buyers, thus, the latter party do not have all the details necessary to make an informed purchase decision (Minarelli, Galioto and Viaggi, 2016). Concerns with information asymmetry in the UK's food market and its impact on public health have been affirmed (Morelli, 1999; Kendall *et al.*, 2019; Collins, 2019; Revoredo-Giha and Gschwandtner, 2021), and such company activities have served to seriously undermine public confidence in the food industry and government regulatory bodies (Wu *et al.*, 2013; Bearth, Cousin and Siegrist, 2014; Amin, Azad and Samian, 2013; Menses, Cannon and Flores, 2014).

Since convenience food products are commercially prepared and often altered from the state in which they were harvested or raised to better preserve them, researchers (Hennessy, 1996; Giannakas, 2002; Minarelli, Galioto and Viaggi, 2016; Kaczorowska *et al.*, 2021; Kolodinsky, 2012; Nestorowicz, 2014) have used food safety and quality dimensions in examining asymmetric information problems. However, this issue has not been studied from a religious

minority context. Similar to the majority of consumers in the UK, it is likely that followers of Islam have similar cultural concerns about convenience food quality and safety but with the added concerns as to whether ingredients used in convenience foods follow Islamic dietary guidelines.

As an element of the non-verbal communication between producers and consumers, product labels are used to limit the negative effects (i.e. uncertainty and risks) caused by the existence of information asymmetry (Ivanova, 2017). When information relevant to a consumption decision is missing, uncertainty arises for the consumer (Walters and Hershfield, 2020). Research confirms inadequate food labelling in the UK's convenience product market (Hickman, 2010; Fuller, 2018; FSA, 2016), and this triggers adverse selection as consumers are imperfectly informed about food contents (Crespi, Marette and Schiavina, 1999). Food labels have become too complicated and confuse shoppers with the use of technical ingredients names and E-numbers (Borra, 2006; Liu, 2019; Goyal and Deshmukh, 2018), and such operations make it difficult for Muslims living in secular societies to locate and identify whether food products are halal (Ahmed and Juwaidah, 2015; Knot, 2009; Riaz and Chaudry, 2018; Al-Mazeedi, Regenstein and Riaz, 2013). Extending on the theory of information asymmetry, uncertainty and labelling inadequacies factors are also examined.

Information symmetry concerns among Muslims in the UK's convenience food market are examined using four dimensions, namely safety, quality, uncertainty, and labelling inadequacies.

Information Search Behaviour

The provision for more information to deal with asymmetries and food market uncertainties may seem like an obvious solution. The search for information not only allows decision-makers

to reduce their uncertainty, but it can also improve the consumer's personal knowledge base when making food-consumption decisions (Zavolokina, Schlegel, and Schwabe 2020; Verbeke, 2008, Crespi, Marette and Schiavina, 1999). According to Verbeke (2008), in settings where there are risks and uncertainty to one's health and wellbeing when buying foods, it would be profitable for consumers to spend more time and resources on acquiring information before decision-making. In cases where making the right food purchase is important, consumers are likely to be prepared to engage in active information search and processing (Muncy and Hunt, 1984).

Within the context of this paper, it is likely that Muslims in the UK are involved in the decision-process, particularly searching activities, because there is little assurance as to whether products conform to Islamic dietary guidelines (Mukhtar and Butt, 2012). Previous food and non-food related studies support differences between religions and religiosity groups in search intensity and information type used (Delener, 1989; Bailey and Sood, 1993; Esso, 2001; Mokhlis, 2006; Razzaque and Chaudhry, 2013). Recognising this, there was an absence of studies on Muslim information search patterns when selecting appropriate food products in the UK. Academics (Rubin, 1986; Razzaque and Chaudhry, 2013) have found a link between religious dedication, perceived need for information, and being more active in search behaviour when buying relevant products. Additionally, Muslims may make use of external marketing (i.e. advertisements, product packaging, and salespeople etc.) and personal (i.e. family, friends, religious group members, etc.) sources to gain more information about convenience food items to reduce information asymmetry concerns and verify whether products are halal.

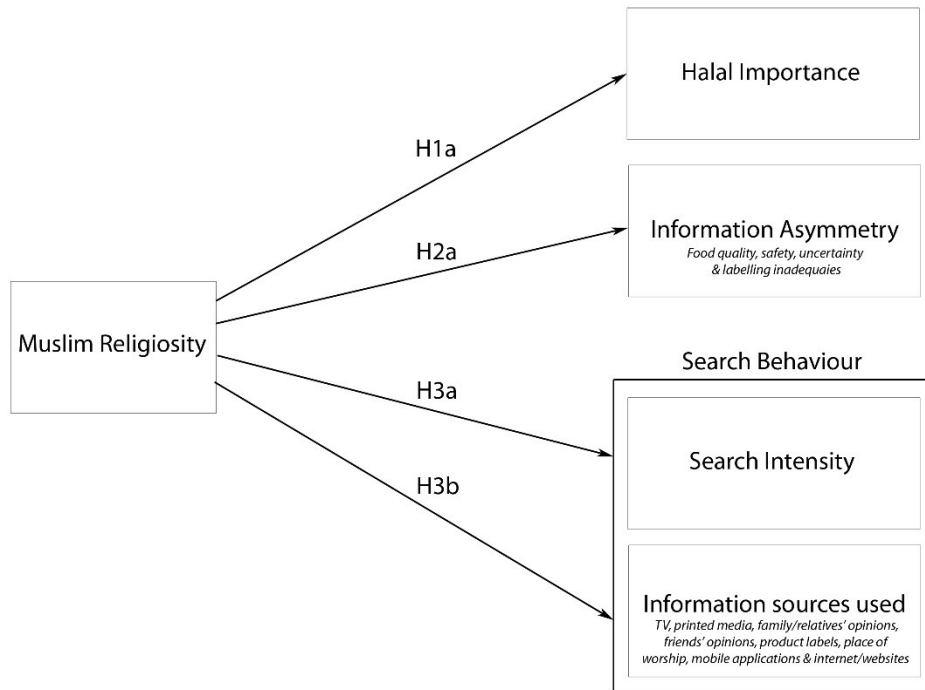


Figure 1: Conceptual Framework

H1a: There is a relationship between self-perceived strength of religious affiliation and halal purchase importance among Muslims in the UK when buying convenience foods.

H2a: There is a relationship between perceived strength of religious affiliation and information asymmetry concerns.

H3a: There is a relationship between perceived strength of religious affiliation and information search intensity among Muslims in the UK when buying convenience food products.

H3b: There is a relationship between perceived strength of religious affiliation and information sources used among Muslims in the UK when buying convenience food products.

Method

Sample

Since Muslim consumers were the selected religious group of interest in this study, a proportion formula was used to estimate a representative sample size (McDaniel and Gates, 2013). Calculations showed a minimum sample size of 70 respondents, but this figure was doubled to yield better results. Stratified sampling was used based on age and gender to accurately reflect the characteristics of the religious group of interest, and the area sampling procedure were employed to access Muslim respondents. To obtain data, a questionnaire was distributed to consumers in Liverpool using a face-to-face contact method approach. Liverpool is a city and metropolitan borough in Merseyside, northwest of England. The city provides a perfect location for collecting data because it not only has a large and culturally diverse population, but it has deep Islamic roots and is home to England's first Mosque (Gilham and Greaves, 2017; Page 2018).

A screening process was used to ensure that participants who took part were eligible for the survey. This process will save the researcher both time and money by omitting respondents that do not meet target specifications (Stone and Desmond, 2007). As the topic of this study is focuses on Muslims in the UK, religion and place of residence were important. Subjects over the age of 18 were elected for this research because of the complexity of the matter on information asymmetry, and the sensitive and personal nature of asking about one's religion (Mokhlis, 2006). Additionally, screening enabled the monitoring of age and gender units involved to ensure the Muslim sample population best represents the UK Muslim population. Following this, a total of 141 surveys were completed and were valid for analysis. Sample characteristics are presented in Table 2.

<i>Gender</i>		<i>Marital Status</i>	
Male	52.5	Married	41.4
Female	47.5	Divorced	5.7
		Living with another	2.8
<i>Age</i>		Separated	2.8
18-24	18.4	Single	45.4
25-34	32.6	Widowed	2.1
35-44	22.7		
45-59	17.0	<i>Education</i>	
60 +	9.2	None	2.8
		GCSE or equiv.	5.7
<i>Generation</i>		A-levels or equiv.	27.7
First	39.4	Undergraduate or equiv.	36.9
Second	24.8	Postgraduate or equiv.	24.1
Third	13.5	Doctoral or equiv.	2.8
Fourth or more	6.4		
		<i>Occupation</i>	
<i>Ethnicity</i>		Unemployed	3.5
White	3.5	Student	19.1
Asian		Homemaker	3.5
Pakistani	35.5	Skilled Labourer	2.8
Indian	11.3	Support staff	8.5
Bangladeshi	9.9	Professional/managerial	20.6
Other	4.2	Self-employed/partner	18.4
Black	9.9	other	23.4
Other	23.4		

Table 2: Socio-demographic characteristics of Muslim sample (per cent of respondents)

Questionnaire and Scaling

The survey used a structured questionnaire in English, and this was pre-tested and refined prior to field work. The questionnaire included items measuring perceived strength of religious affiliation on a five-point scale ranging from “not religious” to “very religious” (Delener, 1994), and the importance of selecting halal convenience food items on a ten-point scale ranging from “not important at all” to “extremely important” (Bonne *et al.*, 2007). Information asymmetry concerns is measured using four items, pertaining to convenience food safety (“convenience foods sold in the UK are safe to eat”), convenience food quality (“convenience foods sold in the UK are good for my health”), convenience food selection uncertainty (“I am uncertain about whether I have made the right convenience food choice”), and convenience food labelling inadequacies (“food companies in the UK fail to list all ingredients used in products on labels”) on a five-point scale ranging from “strongly disagree” to “strongly agree”. The former two items were adapted from Hennessy (1996) and Minarelli, Galioto and Viaggi (2016). The scale for measuring search intensity was revised from Razzaque and Chaudhry (2013), and respondents were asked “how actively they search for information when selecting the appropriate convenience food item” on a five-point scale in which 1 is “never” and 5 is “always”. Finally, sources of information used when locating the appropriate product were adapted from Eckman, Kotsiopulos and Bickle (1997) and Mokhlis (2006), and included print publication (magazine/newspaper), commercial broadcast (television), digital influences (mobile/internet), personal influences (family/friends), and sales person’s advice influence were measured on a five-point scale ranging from “never used” to “always used”. The use of religious group members and place of worship as information sources were also added.

Analysis and Results

Respondents Diet

Table 3 reports the dietary characteristics followed by Muslim respondents. It should be noted that percentages do not total 100% because respondents were allowed to select multiple diets and dietary regimes that applied to them. With this said, it can be seen in the same table that 95% of Muslims surveyed stated that they follow a halal diet, followed by vegetarianism (7.1%), diabetic (3.5%), then vegan (2.1%). With regards to dietary regimes, 47.5% of Muslims consume ethnic foods, 46.1% nutritional foods, 37.6% organic foods, and 22% Fair-Trade/Ethical foods. This shows that most Muslims respondents who took part in the study still follow a halal convenience food diet, but they also have additional food diets and dietary regimes which they follow.

<i>Diets</i>		<i>Dietary Regime</i>	
Vegetarian	7.1%	Fair-Trade/Ethical Food	22.0%
Vegan	2.1%	Organic Food	37.6%
Halal	95%	Convenience Food	11.3%
Diabetic	3.5%	Nutritional Food	46.1%
Lactose-Free	0.7%	Weight Control	15.6%
Nut-Free	0.7%	Low-Calorie	11.3%
No Food Diet	1.4%	High-Protein	16.3%
		Detox Food	0.7%
		Ethnic Food	47.5%
		No Food Regime	17.0%

Table 3: Dietary characteristics of Muslim sample (per cent of respondents)

Halal Importance

A Pearson's correlation Test was used to assess the relationship between self-perceived strength of religious affiliation and halal purchase importance on 141 Muslims in the UK. Table 4 shows that there is a positive correlation between the two variables ($r=0.832$, $n=141$, $p=0.018$). Thus, H1a is supported and results indicate that Muslims in the UK who perceive themselves to be strongly affiliated with Islam attach more importance to buying halal convenience foods. It should be noted that the mean halal importance value among all Muslims was high ($M=9.83$, $SD=0.46$). Although the purchase decisions of all Muslims are influenced by the relevance attached to buying convenience foods that are halal, the latter is more instrumental in meeting important sacred need, goals and values as self-perceived religiosity levels increases.

n=141	Mean	Pearson's correlation	Sig. (2-tailed)
Halal importance	9.83	0.832	0.018**

Table 4: Pearson's correlation on perceived strength of religious affiliation and halal importance

Religiosity and Asymmetric Information Concerns

A Pearson's correlation Test was used to assess the relationship between self-perceived strength of religious affiliation and four information asymmetry concerns on 141 Muslims. Table 5 shows that none of the correlations were statistically significant ($p>0.05$), and so, H2a is rejected. Results suggests that there is no relationship between the extent to which Muslims

in the UK perceive themselves to be strongly affiliated with Islam and information asymmetry concerns relating to convenience food safety, quality, selection uncertainty, and labelling inadequacies. Having said that, the same table reveals high mean scores for convenience food selection uncertainty (M=4.38, SD=1.64) and labelling inadequacies (M=3.84, SD=0.89), respectively. The non-significant correlation between religiosity and information asymmetry concerns demonstrates that all respondents were neutral or unsure about the safety and quality of convenience foods regardless of degree of connection with Islam. Additionally, all respondents were unsure as to whether the right food choice was made, and they fear that not all ingredients used in the products are not listed on packaging labels.

Information asymmetry concerns (n=141)	Mean score	Pearson's correlation	Sig. (2-tailed)
Convenience Food Safety	3.16	-0.038	0.656
Convenience Food Quality	2.83	-0.028	0.744
Convenience Food selection uncertainty	4.38	0.133	0.115
Convenience Food labelling inadequacies	3.84	-0.074	0.385

Table 5: Pearson's correlation on perceived strength of religious affiliation and information asymmetry concerns

Information Search Intensity

A Pearson's correlation Test was used to assess the relationship between self-perceived strength of religious affiliation and search intensity on 141 Muslims. Table 6 shows that there is a positive, statistically significant correlation between the two variables ($r = 0.197$, $n=141$, $p=0.019$). As a result, H3a is supported and results suggest that Muslims in the UK who perceive themselves to be strongly affiliated with Islam are more active in searching for information when selecting the appropriate convenience food item. This means that Muslims are more likely to enthusiastically search for information and be actively involved in the buying decision as self-perceived religiosity increases.

Search intensity (n=141)	Mean	Pearson's correlation	Sig. (2-tailed)
Search intensity	3.34	0.197	0.019**

Table 6: Pearson's correlation on perceived strength of religious affiliation and search intensity

Self-perceived Religiosity and Information Sources

A Pearson's correlation Test was conducted to determine the relationship between self-perceived strength of religious affiliation and ten information search sources for 141 Muslims. The results in Table 7 show that five out of the ten correlations were statistically significant, $p < 0.05$. A positive correlation on Muslim's self-perceived strength of religious affiliation was found for information sources religious group members' opinions ($r = 0.220$, $n=141$, $p=0.009$), product labels ($r = 0.185$, $n=141$, $p=0.28$), family/relative opinions ($r = 0.178$, $n=141$, $p=0.034$), and place of worship ($r = 0.170$, $n=141$, $p=0.044$), respectively. The same table shows a negative correlation between Muslim's self-perceived strength of religious affiliation and TV

advertising ($r = -0.186$, $n=141$, $p=0.27$). There were no correlations between self-perceived strength of religious affiliation on information sources Magazines/Newspaper advertising, friends' opinions, salespersons advice, mobile applications, and Internet/Websites. Based on these results, H3c is accepted as results suggest that Muslims in the UK who perceive themselves to be strongly affiliated with Islam are more likely to use religious group members' opinions, product labels, family/relative's opinions, and their place of worship as sources of information when selecting the appropriate food item. On the other hand, Muslims with lower levels of self-perceived strength of religious affiliation are more likely to use TV advertising as an information source. The same table below lists each information source used by Muslims in the UK and is ranked on their significance value. This indicates that as self-perceived religiosity level increases, respondents are more likely to use product labels and comply with the views of others by using religious group members' opinions, family/friends' opinions and their place of worship as information sources to help them make the right or halal food choice. What's more, Muslims with lower levels of self-perceived religiosity are more likely to rely on TV advertising as an information source when selecting the appropriate product.

Information sources (n=141)	Pearson's correlation	Sig. (2-tailed)
Religious group members opinions	0.220	0.009**
TV advertisement	-0.186	0.027*
Product labels	0.185	0.028*
Family/relatives opinions	0.178	0.034*

Place of Worship	0.170	0.044*
Magazine/Newspaper advertising	-0.164	0.053
Salesperson's advice	0.118	0.164
Friends' opinions	0.52	0.539
Mobile application	-0.037	0.667
Internet/Websites	-0.024	0.780

Table 7: Pearson's correlation on perceived strength of religious affiliation and information search sources used.

Discussion

This study lends support to the general idea that the degree of self-perceived religiosity is associated with the convenience food purchase behaviour of Muslims in the UK. Alongside religious dietary guidelines, which was followed by the majority of Muslim respondents in this study, additional diets have also been adopted by this religious subculture. Khan and Khan (2017) posits that followers of Islam may rely on symbols such as the vegetarian or vegan trademark on products as an alternative to the halal logo. However, other sources (Perdana *et al.*, 2018; Shaharudin *et al.*, 2010; Statistica, 2020; Kara, 2018) indicate a growing preference among Muslims for organic, sustainable and ethical items. Either way, this minority religion's growing support for cause-related products (Anuar, Adam and Omar, 2012) appears to be consistent with the British population (Harvey, 2021).

The consumer's involvement in acquiring religiously appropriate convenience food items was measured through purchase importance, and findings show that buying halal remains to be an

extremely important attribute for Muslims living in a non-dominant religious context. What's more, Muslims who evaluate themselves to be strongly affiliated with Islam attach more importance to buying halal convenience foods. Such finding corresponds with other researchers who examined meat food purchases in western contexts (Bonne *et al.*, 2007; Ahmed *et al.*, 2014), indicating that highly religious Muslims are more inclined to follow Islamic rules and customs. Buying religiously appropriate or halal products is instrumental in meeting the religious needs, goals and values of Muslims. It also helps followers of Islam to maintain and reinforce their Islamic lifestyle and identity in a non-Muslim society (Sandikci and Ger, 2010; Khenfer and Roux, 2012).

When examining information asymmetry issues, Muslim self-perceived religiosity levels did not influence concerns over food quality, safety, choice uncertainty and labelling inadequacies. According to Bergan (2001), using self-perceived strength of religious affiliation as a unidimensional construct to subjectively measure religiosity may lead to incorrect conclusions. This is because the construct fails to separate intrinsic and extrinsic motives, nor does it capture changes in explicit and implicit components (Jahedi and Mendez, 2014). For example, greater attendance of worship in a congregation does not equate to increased religious commitment. The individual's actions to attend religious gatherings could be more routine than devotional, and motives could be to extrinsically dominate over others instead of gaining inherent satisfaction (Mokhis, 2009). Having said this, the mean scores for food choice uncertainty and labelling inadequacies in the current study were towards the high end of the scale, indicating that all Muslims are increasingly concerned about these two dimensions irrespective of their level of religiosity.

The information search activity when making purchasing choices was examined as a consequence of information asymmetry concerns. A relationship between self-perceived

religiosity strength and search intensity is confirmed. In other words, Muslims with increased levels of self-perceived religiosity are likely to put more time and effort into their search activity. While this outcome contradicts Delener's (1989) and Razzaque and Chaudhry's (2013) findings, Bonne *et al.* (2007) recognised that halal consumption is no automated process (i.e. without reasoning) due to the high personal importance attached by Muslims to select halal items. However, active reasoning is not repeated for every purchase, as the same authors indicate that Muslims display more habitual purchase behaviours for products that they have purchased previously. Consumer behaviour literature in the past have connected greater purchase importance with higher levels of information processing and increased engagement in information search activities (Bloch, Sherrell and Ridgway, 1986; Malhotra, 1982; Moore and Lehmann, 1980; Urbany, Dickson and Wilkie, 1989; Keller, Taylor and Brunyé, 2020), as was the case in this study.

There were a number of significant correlations between self-perceived strength of religiosity and information sources used by Muslims in the UK, specifically religious group members' opinions, product labels, family/relatives' opinions, and place of worship advice, respectively. These findings are in line with the work of Hirschman (1981) and Mokhlis (2006) in that highly religious consumers are more likely to be active in interpersonal communication by seeking advice and receiving information from people they know and trust. Presumably, highly religious Muslims in the UK are more dependent, sociable and sensitive to norms, and so they are more likely to rely on interpersonal information sources and conform socially (Hamby 1973; Wiebe and Fleck 1980; Bonne *et al.*, 2007; Mukhtar and Butt, 2012; Suleman, Sibghatulah and Azam, 2021; Rongso, Utari and Rahmanto, 2020; Bergeaud-Blackler and Bonne, 2006; Higgs and Thomas, 2016). Informational referent particularly can play a significant role in consumer decisions during uncertain situations because they are seen as more credible and trustworthy when an individual is faced with doubt and uncertainties (Bearden

and Etzel, 1982). Having said this, such reference groups may not always be available at the time of purchase, and so Muslim would need to use product labels to ensure religious compliance of food items (Ahmad and Juwaidah, 2015; Razzaque and Chaudhry, 2013; Mutmainah, 2018).

Conclusion

The purpose of this research is to fill a gap in knowledge by understanding the relationship between Muslim self-perceived religiosity, information asymmetry concerns and search behaviour when buying convenience food products in the UK. While the majority of Muslim respondents reported to have maintained a halal diet, other cultural and medical dietary regimes are adopted by members of this minority group. Thus, consumer researchers should not dismiss the influence dietary acculturation can have on the buying and eating habits of minority religions, especially when considering their support for additional food diets (i.e. plant-based, ethical or health-related) and their purchase of other product categories (i.e. convenience food products) which go beyond meat items. With the processed food market in the UK growing, academics need to consider the concept of halal in non-meat food related purchases. This would open up many potential avenues for food producers to offer halal convenience products to a growing Muslim population that are in line with the country's conscious consumption trend (i.e. being vegetarian, organic and ethical).

Asymmetric information problems in the food industry had not been studied from a minority religion perspective. The non-significant relationship score between Muslim religiosity and information asymmetry concern dimensions were disappointing, and this outcome was likely caused by the use of a single subjective measure of religiosity. Despite this, the high mean

score showed that Muslims, in general, are concerned with food choice uncertainty and labelling inadequacies when selecting appropriate convenience food products in the UK. For Muslims with higher levels of self-perceived strength of religious affiliation, they were more committed to overcome such market uncertainties by being more active in searching for information to select convenience food items that are halal. Thus, policy-makers need to prompt companies to be more transparent and display necessary information or symbols on product packaging to lessen Muslim consumer concerns and decision-making search intensity (Bakar, Lee and Rungie, 2013).

Finally, the paper concludes that there is a relationship between the Muslim consumer's self-perceived strength of religious affiliation and the sources of information used to locate appropriate convenience food items. To be more specific, Muslims in the UK who perceive themselves to be strongly affiliated with Islam are more likely to use religious group members' opinions, product labels, family/relative opinions, and place of worship as sources of information. In contrast, Muslim respondents with decreasing levels of self-perceived strength of religious affiliation are more likely to use TV advertising. Such information can help marketers to identify advertising methods that would be effective in attracting different Muslim segments in the UK. Distinct marketing strategies need to be applied when communicating relevant information to Muslim consumers to help them make better informed purchase decisions.

The present research is the first research studying asymmetric information concerns in convenience foods among Muslim minorities in the UK. The study faces some limitations in terms of sample size. Having said that, the proportion formula was used to determine the minimum sample size needed for the present research, and the number of respondents surveyed was adequate for drawing possible conclusions. More information asymmetry dimensions could have been considered such as moral hazard (Minarelli, Galioto and Viaggi, 2016),

perceived risk (Yener, 2015) and trust (Bonne *et al.*, 2007) in the food system. Religiosity was measured as a single item instead of a multi-item construct, and this may have partly caused non-significant results. It is possible that the phrasing of some of the statements asked in relation to information asymmetry concerns was also partly responsible for the non-significant correlation scores. The food product category was general and not specific, so it is likely that consumer concern for each item may differ. Finally, the sample was taken from the city of Liverpool which may hinder inferences made about the general Muslim population in the UK. Consequently, each of these issues imposes limits on drawing generalisation from the findings to the broader population of Muslims in the UK. Nonetheless, research sheds some initial light on Muslim concerns in the convenience food market and more work is needed in this area to alleviate these concerns. The explanatory nature of this study should be recognised along with the attempts made to discover associations between religion, information asymmetry concerns in agri-foods, and consumer search behaviour.

Practical Implications

On practical implication that should be noted relates information asymmetry concerns, which selection brings to light issues within the UK's current food supply chain. Food policies exist to influence the operations of the food and agricultural system and to ensure human health needs are being met, but does not seem to be the case for Muslims living in western societies. The gap in knowledge between the producer and consumer about the content and processing of food items need to be reduced so that convenience food purchases become a low-risk activity, and more informed purchasing decisions can be made by Muslims. Companies need to be more transparent about the products they offer and gain consumer trust, especially following the number of foods scandals and scares that have occurred in Britain. Failing to do

so can hinder the organisation's reputation, prevent them from evolving with consumer demands, and have the miss out on untapped opportunities within the UK's religious market that would bring them long-term profitability.

It is understood that have companies have been slow in catering to the needs of religious subcultural groups, and this could be due to a) the lack of cultural awareness companies has for the audience they are serving, or b) concerns about the additional cost and challenges entering such markets will bring to their firm. Working alongside Islamic certifying bodies in the UK will bring great advantages to food producers in terms of profitability, customer loyalty and overcoming market barriers. Therefore, it is advised that policy-makers work together with consumers as well as Islamic certifying bodies to reduce information asymmetry concerns and increase consumer confidence by drawing on how production, processing, packaging, and marketing can be improved. Additionally, government intervention through new laws or taxes, tariffs, subsidies, and trade restrictions also need to be revised to correct market failure.

Management need to move away from a standardised marketing approach and consider the needs of religious subcultures, as this is a growing segment of the UK market. Segmentation procedures should be used by management and marketers to focus the company's marketing strategies on certain consumer groups within a given religion. Furthermore, it appears that followers of Islam are overcompensating for information asymmetry matters by increasing their search activity and using specific information sources to locate religiously appropriate products. Marketing management can then formulate relevant communication strategies to target segments based on information sources that are most likely to be utilised by religiosity groups. For example, advertising convenience food products that are halal to highly religious Muslims via the opinions of religious groups, family/relatives, and place of worship, and product labels. In contrast, TV advertising can be used to inform and attract less religious Muslim consumer groups.

Academic Implications

The findings of this research provide considerable support for the important role religiosity plays in consumption behaviour. Very few works examined religion from a minority context, particularly the UK, and so cultural factors guiding the behaviour of religious subgroups remain unexplored. Earlier works exaggerated the stability of preferences by only considering religious preferences, overlooking socio-cultural forces (e.g., cultural barriers, consumption trends followed, and acculturation outcomes) that too shape the behaviour of religious diasporic communities. Even though Muslims have become accustomed to the diets of the UK, showing support for health- and cause-related convenience food products, this study uncovered that halal preferences and concerns extend beyond meat consumption. Other food categories need to be considered in future research as this can generate several new research opportunities anchored to the real world.

Implications relating to the multi-dimensional nature of constructs, namely religiosity and information asymmetry concerns, need to be discussed. Using self-perceived strength of religious affiliation as a unidimensional construct may have led to some non-significant correlations, and so intrinsic, extrinsic and behavioural measures of religion should be employed in later research. Similarly, a multi-dimensional approach to assessing information asymmetry problems captures the exact nature of consumer concerns, and so additional factors relating to labelling inadequacies, selection uncertainty and trust should be included.

References

- Ahmad, J. and Juwaidah, S. (2015). 'Perceived value and perceived usefulness of halal labelling: the role of religion and culture'. *Journal of Business Research*, 68(5):933-941.
- Ahmed, A. (2008). 'Marketing of halal meat in the United Kingdom'. *British Food Journal*, 110(7): 655-670.
- Ahmed, Z.U., Al-Kwifi, O.S., Saiti, B. and Othman, N.B (2014). Determinants of Halal Meat Consumption in China. *Journal of Technology Management in China*. 9(1): 6-23
- Alhazmi, H.K.H. (2013) *New Zealand Muslim Consumer Attitudes towards Purchasing Halal Foods*, Ph.D. Auckland University of Technology
- Allen, V (2019) *Eating highly-processed foods such as ready meals, cereals and crisps, raises your risk of a heart attack or stroke as scientists call for public health action*, Daily Mail [Online] Available at: <https://www.dailymail.co.uk/health/article-7082793/Eating-ultra-processed-foods-raises-risk-death.html> [Available at: 20/10/2021]
- Al-Mazeedi, H, & Regenstein, J., & Riaz, M. (2013). The Issue of Undeclared Ingredients in Halal and Kosher Food Production: A Focus on Processing Aids. *Comprehensive Reviews in Food Science and Food Safety*. 12(2): 228-233
- Alston, J.P. (1975) Three Measures of Current Levels of Religiosity, *Journal for the Scientific Study of Religion*. 14(2): 165-168
- Amin, L., Azad, A.K., & Samian, A.L. (2013) Factors Influencing Risk Perception of Food Additives. *Journal of Food, Agriculture and Environment*. 11(2): 62-72
- Anuar, M.M and Adam, F and Omar, K. (2012). "The Role of Religiosity in Socially Responsible Consumption," *International Journal of Asian Social Science*, Asian Economic and Social Society, 2(9): 1467-1476.
- Baazeem, T.A. (2015) *How religiosity influences consumption: The impact of consumer religiosity on perceptions of psychological and social risk*. PhD. Queensland University of Technology.
- Bailey, J. and Sood, J. (1993). The Effects of Religious Affiliation on Consumer Behaviour: A Preliminary Investigation. *Journal of Managerial Issues*, 5(3): 328-352.
- Bakar, A., Lee, R & Rungie, C. (2013). The Effects of Religious Symbols in Product Packaging on Muslim Consumer Responses. *Australasian Marketing Journal*. 21. 198–204.
- Barilla Center of Food and Nutrition (2009) The cultural dimension of Food – The relationship between food and religion, conviviality and the identity of people. [Online] Available at: <https://www.barillacfn.com/en/publications/the-cultural-dimension-of-food/> [Accessed on: Accessed: 27/09/2021]
- Bearden, W. O. and Etzel, M. (1982), "Reference Group Influence on Product and Brand Purchase Decisions," *Journal of Consumer Research*. 9(2): 183-94.

- Bearth, A., Cousin, M.E., & Siergrist, M. (2014) The Consumers' Perception of Artificial Food Additives: Influences on Acceptance, Risk and Benefit Perceptions. *Food Quality and Preferences*. 38: 14-23
- Bergan, A. (2001). Religiosity and life satisfaction. *Activities, Adaptation & Aging*, 24(3): 23-34.
- Bergeaud-Blackler, F. and Bonne, K. (2006), "D'une consommation occasionnelle a` un re'gime halal: quelles conse'quences sur la sante'", *Migrations Sante'*. 124
- Bergh, D. D., Ketchen, D. J., Orlandi, I., Heugens, P. P. M. A. R., & Boyd, B. K. (2019). Information Asymmetry in Management Research: Past Accomplishments and Future Opportunities. *Journal of Management*, 45(1), 122–158.
- Berthold, A and Ruch, W. (2014) Satisfaction with life and character strengths of non-religious and religious people: it's practicing one's religion that makes the difference, *Frontiers in Pyschology*.14(5): 876
- Bloch, P.H., Sherrell, D.L. and Ridgway, N.M. (1986) Consumer Search: An Extended Framework, *Journal of Consumer Research*, 13(1): 119-126
- Bonne, K. & Verbeke, W. (2006). Muslim consumer's motivations towards meat consumption in Belgium: Qualitative exploratory insights from means-end chain analysis. *Anthropology of Food*. 5: 2-24.
- Bonne, K., Vermeir, I., Bergeaud-Blackler, F. and Verbeke, W. (2007) 'Determinants of halal meat consumption in France', *British Food Journal*, 109(5): 367–386.
- Borges, M., Lucchetti, G., Leão, F.C., Vallada, H., & Peres, M.F.P. (2021) Religious Affiliations Influence Health-Related and General Decision Making: A Brazilian Nationwide Survey. *Int. J. Environ. Res. Public Health*, 18(6): 2873
- Borra, S. (2006) Consumer perspectives on food labels, *The American Journal of Clinical Nutrition*, 83 (5): 1235S
- Boseley, S. (2019). *Study links heavily processed foods to risk of earlier death*, The Guardian [Online] Available at: <https://www.theguardian.com/society/2019/feb/11/study-links-heavily-processed-foods-to-risk-of-earlier-death> [Available at: 20/10/2021]
- Buckley, M., Cowan, C. and McCarthy, M. (2007). The convenience food market in Great Britain: Convenience food lifestyle (CFL) segments. *Appetite*. 49: 600-17.
- Businesswire (2017) *Global Halal Food Market 2017-2021 - Increased Demand for Convenience Foods - Research and Markets* [Online] Available at: <https://www.businesswire.com/news/home/20170530006088/en/Global-Halal-Food-Market-2017-2021---Increased-Demand-for-Convenience-Foods---Research-and-Markets> [Accessed on: 15/09/2021]
- Chen, X., Zhang, Z., Yang, H., Qiu, P., Wang, H., Wang, F., Zhao, Q., Fang, J. & Nie, J. (2020) Consumption of ultra-processed foods and health outcomes: a systematic review of epidemiological studies. *Nutrition Journal*. 19(1): 86

- Collins, B. (2019) Agent relationships and information asymmetries in public health. [Online] Available at: <https://aheblog.com/2019/12/11/agent-relationships-and-information-asymmetries-in-public-health/> [Accessed on 22/09/2021]
- Crespi, J., Marette, S. & Schiavina, A. (1999). The Role of Common Labelling in a Context of Asymmetric Information. *European Review of Agricultural Economics*. 26. 167-78.
- Delener, N. (1989). *Religious differences in cognitions concerning external information search and media usage*, in Marketing: Positioning for the 1990s, Robert L. King (ed.), Proceedings of the Annual Meeting of the Southern Marketing Association: 64-68
- Delener, N. (1994). Religious Contrasts in Consumer Decision Behaviour Patterns: Their Dimensions and Marketing Implications. *European Journal of Marketing*, 28(5): 36-53.
- Delener, N. and Schiffman, L. G. (1988). *Family decision making: the impact of religious factors*. In G. Frazier et al. (eds.), Efficiency and Effectiveness in Marketing. Chicago, IL: American Marketing Association (Summer): 80-83
- Donnelly, L. (2019). *Sausages and other 'ultra-processed foods' could increase the risk of early death by 60 per cent*, The Telegraph [Online] <https://www.telegraph.co.uk/news/2019/05/29/sausages-ultra-processed-foods-could-increase-risk-early-death/> [Available at: 20/10/2021]
- Doran, C. J., & Natale, S. M. (2011). ἐμπάθεια (Empatheia) and Caritas: The Role of Religion in Fair Trade Consumption. *Journal of Business Ethics*, 98(1): 1–15.
- Eckman, M., Kotsiopoulos, A., & Bickle, M. C. (1997). Store patronage behavior of Hispanic versus non-Hispanic consumers: comparative analyses of demographics, psychographics, store attributes, and information sources. *Hispanic Journal of Behavioral Sciences*, 19(1): 69-83.
- Ellison, C. G. (1995). Rational choice explanations of individual religious behavior: Notes on the problem of social embeddedness. *Journal for the Scientific Study of Religion*. 34(1): 89-97.
- Engel, J. F. (1976). *Psychographic Research in a Cross Cultural Nonproduct Setting*", in *NA - Advances in Consumer Research Volume 03*, eds. Beverlee B. Anderson, Cincinnati, OH: Association for Consumer Research, Pages: 98-101.
- Esso, N. (2001) *A Study of Cultural Influences on Consumer Behaviour in a Small Island Economy: Religious Influences on Purchasing Behaviour in Mauritius*. University of Warwick. PhD
- Fam, S. K., Waller, D. and Erdogan, B. Z. (2004). The influence of religion on attitudes towards the advertising of controversial products. *European Journal of Marketing*, 38(5/6): 537-555.
- Farah, M. F. & Samad, L.E. (2014) The effects of religion and religiosity on advertisement assessment among Lebanese Consumers, *Journal of International Consumer Marketing*, 26(4): 344-369
- Fischer, J. (2016). Markets, religion, regulation: Kosher, halal and Hindu vegetarianism in global perspective. *Geoforum*. 69: 67-70.

- FSA (2016) Food Standards Agency – Understanding NI Consumer Needs Around Food Labelling [Online] Available at: https://www.food.gov.uk/sites/default/files/media/document/consumer-needs-around-food-labelling_0_0.pdf [Accessed on: 22/09/2021]
- Fuhrman J. (2018). The Hidden Dangers of Fast and Processed Food. *American journal of lifestyle medicine*, 12(5), 375–381.
- Fuller, C. (2018) Nearly half of UK consumers think food labels are complicated. [Online] Available at: <https://www.conveniencestore.co.uk/news/nearly-half-of-uk-consumers-think-food-labels-re-complicated/573006.article> [Accessed on: 22/10/2021]
- Gallagher, J. (2019). *Ultra-processed foods 'linked to cancer*. BBC News [Online] Available at: <https://www.bbc.co.uk/news/health-43064290> [Available at: 20/10/2021]
- Gani, A. (2015) Muslim population in England and Wales doubles in 10 years. [Online] Available at: <https://www.theguardian.com/world/2015/feb/11/muslim-population-england-wales-nearly-doubles-10-years> [Accessed on: 11/09/2021]
- Garcia, C., Fearne, A., & Wood, L (2010) The role of involvement in the attention paid by supermarket shoppers to organic products, *Journal of Innovation Economics and Management*. 1(5):127-144
- Giannakas, K. (2002). Information Asymmetries and Consumption Decisions in Organic Food Product Markets. *Canadian Journal of Agricultural Economics/Revue canadienne d'agroeconomie*. 50(1): 35 - 50.
- Gilham, J. and Greaves, R. (2017) *Victorian Muslim: Abdullah Quilliam and Islam in the West*. Oxford University Press: Oxford
- Goyal, R., & Deshmukh, N. (2018). Food label reading: Read before you eat. *Journal of education and health promotion*, 7(56):1-2
- Hamby, J. (1973). Some Personality Correlates of Religious Orientation. *Dissertation Abstracts International* 34. 1127-1128.
- Haron, S., Ahmad, N., and Planisek, S.L., (1994) "Bank Patronage Factors of Muslim and Non-Muslim Customers", *International Journal of Bank Marketing*. 12(1): 32-40
- Hart, F. (1952). A History of the Adulteration of Food Before 1906. *Food, Drug, Cosmetic Law Journal*, 7(1), 5-22.
- Harvey, F (2021) Steep rise in UK's consumption of organic food. The Guardian. [Online] Available at: <https://www.theguardian.com/environment/2021/feb/10/steep-rise-in-uks-consumption-of-organic-food> [Accessed on: 14/10/2021]
- Hackett, C and McClendon, D. (2017) Christian remains world's largest religious group, but they are declining in Europe. Pew Research Center [Online] Available at: <https://www.pewresearch.org/fact-tank/2017/04/05/christians-remain-worlds-largest-religious-group-but-they-are-declining-in-europe/> [Accessed on: 31/01/2022]

- Heiman, A., Just, D., McWilliams, B. & Zilberman, D. (2004). Religion, Religiosity, Lifestyles and Food Consumption. *The Giannini Foundation of Agricultural Economics*, 8(2): 9-11.
- Hennessy, D. (1996). Information Asymmetry as a Reason for Food Industry Vertical Integration. *American Journal of Agricultural Economics*, 78(4), 1034-1043.
- Hickman, M. (2010) Convenience food labelling ‘misleading’. The Independent. [Online] Available at: <https://www.independent.co.uk/life-style/food-and-drink/news/convenience-food-labelling-misleading-1868583.html> [Accessed on: 19/10/2021]
- Higgs, S & Thomas, J. (2016), 'Social influences on eating', *Current Opinion in Behavioral Sciences*, 9: 1-6.
- Hirschman, E. C. (1983). *Religious affiliation and consumption processes: an initial paradigm*. In J. N. Sheth (ed.), *Research in Marketing* 6. Greenwich, CT: JAI Press: 131-170
- Hirschman, E.C., Ruvio, A.A. and Touzani, M. (2011) Breaking bread with Abraham’s children: Christians, Jews and Muslims’ holiday consumption in dominant, minority and diasporic communities. *J. of the Acad. Mark. Sci.* 39: 429–448
- Ibrahim, A. (2015). *The Fast Food Consumption Experiences and Identity Construction of British Muslims: A Phenomenological Study*. Ph.D. University of Leicester.
- Ivanova, M. (2017). "Identifying Areas of Information Asymmetry on Foods Labels," *International Conference on Marketing and Business Development Journal*, The Bucharest University of Economic Studies, vol. 1(1): 60-67.
- Jahedi, S. & Mendez, F. (2014). On the Advantages and Disadvantages of Subjective Measures. *Journal of Economic Behavior & Organization*. 98: 97-114
- Jones A, Neal B, Reeve B, Mhurchu, C.N. & Thow, A.M. (2019) Front-of-pack nutrition labelling to promote healthier diets: current practice and opportunities to strengthen regulation worldwide. *BMJ Global Health*. 4: 1-16
- Jusmaliani, J., & Nasution, H.N. (2013). Religiosity Aspect in Consumer Behaviour: Determinants of Halal Meat Consumption. *Asean Marketing Journal*. 1(1): 1-11
- Kaczorowska, J., Prandota, A., Rejman, K., Halicka, E. & Tul-Krzyszczuk, A. (2021) Certification Labels in Shaping Perception of Food Quality—Insights from Polish and Belgian Urban Consumers. *Sustainability* 13(702): 1-22
- Kara, N. (2018) Should halal restaurants source ethical produce [Online] Available at: <https://www.amaliah.com/post/18688/should-halal-restaurants-source-ethical-produce> [Accessed on: 14/11/2021]
- Karnani, A.G., McFerran, B., & Mukhopadhyay, A. (2016). The Obesity Crisis as Market Failure: An Analysis of Systemic Causes and Corrective Mechanisms. *Journal of the Association for Consumer Research*, 1, 445 - 470.
- Keller, A.M., Taylor, H.A. & Brunyé, T.T. (2020) Uncertainty promotes information-seeking actions, but what information? *Cogn. Research* 5(42): 1-17

- Kendall, H., Clark, B., Rhymer, C., Kuznesof, S., Hajšlová, J., Tomaniova, M., Brereton, P., & Frewer, L. (2019). A systematic review of consumer perceptions of food and authenticity: A European perspective. *Trends in Food Science and Technology*, 94: 79-90.
- Khan, G. and Khan, F. (2017). The role of packaging and labelling in determining 'halalness': an exploratory study of Muslims in two countries. *International Journal of Islamic Marketing and Branding*. 2(2):85-99.
- Khenfer, J and Roux, E. (2012). *How does religion matter in the marketplace for minority settings? The case of Muslim consumers in France,* Post-Print halshs-00743900, HAL.
- Kiszko, K. M., Martinez, O. D., Abrams, C., & Elbel, B. (2014). The influence of calorie labeling on food orders and consumption: a review of the literature. *Journal of community health*, 39(6): 1248–1269.
- Knot, M. (2009). Wholly Halal. *Food Manufacture*, June, 31-32.
- Knox, B. (2000) Consumer Perception and Understanding Risk from Food, *British Medical Bulletin*. 55(1): 97-109
- Kolodinsky, J. (2012) 'Persistence of Health Labeling Information Asymmetry in the United States: Historical Perspectives and Twenty-First Century Realities', *Journal of Macromarketing*, 32(2): 193–207.
- LaBarbera, P.A. (1987) "Consumer Behavior and Born Again Christianity," *Research in Consumer Behavior*, 1: 193-222.
- Lipka, M. & Hackett, C. (2017) *Why Muslims are the world's fastest-growing religious group*. [Online] Available at: <https://www.pewresearch.org/fact-tank/2017/04/06/why-muslims-are-the-worlds-fastest-growing-religious-group/> [Accessed on: 22/09/2021]
- Liu, D. (2019) Why food labels are too complicated for shoppers. *The Independent*. [Online] Available at: <https://www.independent.co.uk/life-style/food-and-drink/food-labels-complicated-shopping-food-healthy-eating-a9158646.html> [Accessed on: 19/10/2021]
- Lumina Intelligence (2021) *UK Convenience Food Market Report* [Online] Available at: <https://www.lumina-intelligence.com/convenience-reports/uk-convenience-market-report-2021/> [Accessed 01/10/2020]
- Malhotra, N.K. (1982) Information Loads and Consumer Decision Making, *Journal of Consumer Research*. 8(4): 419-430
- Marti A. (2019). Ultra-Processed Foods Are Not "Real Food" but Really Affect Your Health. *Nutrients*, 11(8): 1902.
- McDaniel, C. and Gates, R. (2013). *Marketing research*. 9th ed. Hoboken: John Wiley.
- Menses, Y., Cannon., K.J. & Flores, R.A. (2014) Keys to Understanding and Addressing Consumer Perceptions and Concerns about Processed Foods, Cereal Food Worlds, *Faculty Publications, Agricultural Leadership, Education and Communication Department*. 59(3):141-146

Minarelli, F., Galioto, F., and Viaggi, D. (2016) *Asymmetric information along the food supply chain: a review of the literature*. [Online] Available at: <https://www.harper-adams.ac.uk/events/ifsa/papers/5/5.4%20Minarelli.pdf> [Accessed on: 18/09/2021]

Mokhlis, S. (2006). *The Influence of Religion on Retail Patronage Behaviour in Malaysia*. Ph.D. University of Stirling.

Mokhlis, S. (2009). Relevancy and Measurement of Religiosity in Consumer Behavior Research. *International Business Research*. 2 (3): 75-84

Moore, W.L. and Lehmann, D. R. (1980) Individual Differences in Search Behavior for a Nondurable, *Journal of Consumer Research*, 7(3): 296-307

Morelli, C. (1999) Information costs and information asymmetry in British food retailing. *The Service Industries Journal*. 19(3): 175-186

Mostafa, R. and Elseidi, R. (2016). *Antecedents of UK Muslim's Community Purchasing Behaviour of Halal-Labelled Products*. Proceedings of the LCBR European Marketing Conference. Lupcon Center for Business Research.

Mukhtar, A. and Butt, M. (2012). Intention to choose Halal products: the role of religiosity. *Journal of Islamic Marketing*, 3(2):.108-120.

Muncy, J.A. and Hunt, S.D. (1984) Consumer Involvement: Definitional Issues and Research Directions. *In NA – Advances in Consumer Research*. 11:193-196

Mutmainah, L. (2018). The Role of Religiosity, Halal Awareness, Halal Certification, and Food Ingredients on Purchase Intention of Halal Food. *Ihtifaz: Journal of Islamic Economics, Finance, and Banking*. 1(1): 33-50

Nestorowicz, R. (2014) The Information Asymmetry and the Social Responsibility of the Food Market. *International Journal of Arts and Sciences*. 7(2): 59-68

ONS (2011) *Religion in England and Wales*. [Online] <https://www.ons.gov.uk/peoplepopulationandcommunity/culturalidentity/religion/articles/religioninenglandandwales2011/2012-12-11> [Accessed 08/010/2021]

ONS (2018) Muslim population in the UK. [Online] Available at; <https://www.ons.gov.uk/aboutus/transparencyandgovernance/freedomofinformationfoi/muslimpopulationintheuk/> [Accessed on: 19/10/2021]

ONS (2021) Overview of the UK population: January 2021. [Online] Available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/articles/overviewoftheukpopulation/january2021> [Accessed on: 12/09/2021]

Owens, J. (2015) *Britain is no longer just a Christian country, says major report*. The Independent. [Online] Available at: <https://www.telegraph.co.uk/news/2021/12/26/britain-still-christian-country/> [Accessed on: 31/01/2022]

Pace, S (2013) Does Religion Affect the Materialism of Consumers? An Empirical Investigation of Buddhist Ethics and the Resistance of the Self, *Journal of Business Ethics* 112(1): 25-46

- Page, J. (2018). *William 'Abdullah Quilliam': Modernity and Faith as lived by a Victorian Muslim*. Masters of Arts (History) at Concordia University, Canada. [Online] Available at: https://spectrum.library.concordia.ca/984866/1/Page_MA_S2019.pdf [Accessed on: 14/10/2021]
- Pepinster, C. (2021) *Britain is still a Christian country*. The Telegraph. [Online] Available at: <https://www.telegraph.co.uk/news/2021/12/26/britain-still-christian-country/> [Accessed on: 31/01/2022]
- Perdana, F. F. P., Jan, M. T., Altunişik, R., Jaswir, I., & Kartika, B. (2018). A Research Framework of The Halal Certification Role in Purchase Intention of Muslim Consumers on The Food Products from Muslim Majority Countries in The Middle East and North Africa. *International Journal of Modern Trends in Business Research (IJMTBR)*, 1(2): 15 – 28.
- Pew Research Center (2015) *The Future of World Religions: Population Growth Projections, 2010-2050*. [Online] Available at: pewforum.org/2015/04/02/religious-projections-2010-2050/ [Accessed on: 15/08/2021]
- Poti, J. M., Mendez, M. A., Ng, S. W., & Popkin, B. M. (2015). Is the degree of food processing and convenience linked with the nutritional quality of foods purchased by US households?. *The American journal of clinical nutrition*, 101(6), 1251–1262.
- Powers, C (2014) *Ethical, Organic, Safe: The other side of halal food*, The Guardian [Online] Available at: <https://www.theguardian.com/lifeandstyle/2014/may/18/halal-food-uk-ethical-organic-safe> [Accessed on: 11/09/2021]
- Razzaque M.A. and Chaudhry S.N. (2013), 'Religiosity and Muslim consumers' decision-making process in a non-Muslim society', *Journal of Islamic Marketing*, 4(2): 198 – 217
- Reed, K. (1991). Strength of Religious Affiliation and Life Satisfaction. *Sociological Analysis*, 52(2): 205–210.
- Revoredo-Giha, C. and Gschwandtner, A. (2021) “The Market for Organic Food in the UK”, *EuroChoices*. [Online] Available at: https://pure.sruc.ac.uk/ws/portalfiles/portal/42557723/1746_692X.12320.pdf [Accessed on 22/09/2021]
- Riaz, M. N., and Chaudry, M. M. (2004). *Halal food production*. Boca Raton, FL: CRC Press.
- Rizzuti, A. (2020) Food Crime: A Review of the UK Institutional Perception of Illicit Practices in the Food Sector. *Social Sciences*. 9(112): 1-11
- Rongso, K., Utari, P. & Rahmanto, A. (2020). The Influence of Family Communication Patterns on Muslim Families in Choosing Halal Food in Thailand. *International Journal of Research and Innovation in Social Science*. IV(XI): 347-351
- Rubin, A. M. (1986) *Uses, gratifications and media effects research*. In J. Bryant and D. Zillmann (eds), *Perspectives in Media Effects*. Hillsdale, NJ: Lawrence Erlbaum, 281–301
- Sandikci, Ö., & Ger, G. (2010). Veiling in style: How does a stigmatized practice become fashionable? *Journal of Consumer Research*, 37(1): 15–36.

- Shaharudin, M. R.m Pani J. J., Mansor S. W., Elias S. J. & Sadek D. M. (2010) Purchase Intention of Organic Food in Malaysia; A Religious Overview. *International Journal of Marketing Studies*, 2(1): 96-103
- Sheely, M. (2008). Award-Winning Undergraduate Paper: Global Adoption of Convenience Foods. *American Journal of Agricultural Economics*, 90(5): 1356–1365.
- Sherwood, H (2017a) *More than half UK population has no religion, survey finds*. Religion. The Guardian [Online] Available at: <https://www.theguardian.com/world/2017/sep/04/half-uk-population-has-no-religion-british-social-attitudes-survey>. [Accessed 01/09/2021]
- Sherwood, H (2017b) *Nearly 50% are of no religion but has UK hit 'peak secular'*. Religion. The Guardian, [Online] Available at: <https://www.theguardian.com/world/2017/may/13/uk-losing-faith-religion-young-reject-parents-beliefs> [Accessed 01/09/2021]
- Sherwood, H. (2019) *UK secularism on rise as more than half say they have no religion*. Religion. The Guardian. [Online] Available at: <https://www.theguardian.com/world/2019/jul/11/uk-secularism-on-rise-as-more-than-half-say-they-have-no-religion> [Accessed 01/09/2021]
- Sherwood, H. (2020) *Less than half of Britons expected to tick 'Christian' in UK census*. The Guardian, [Online] Available at: <https://www.theguardian.com/uk-news/2021/mar/20/less-than-half-of-britons-expected-to-tick-christian-in-uk-census> [Accessed 31/01/2022]
- Shreim, M. (2009). *Religion and Sports Apparel Consumption: An Exploratory Study of the Muslim Market*. Masters. University of Windsor.
- Smale, W. (2014). *The young Muslim entrepreneur who is hungry for Success*. BBC News. [Online] Available at: <https://www.bbc.co.uk/news/business-26187624> [Accessed on: 15/08/2021]
- Soon, J.M., and Wallace, C. (2017) "Application of theory of planned behaviour in purchasing intention and consumption of Halal food", *Nutrition and Food Science*. 47(5): 635-647
- Stannard, S. & Clarke, H. (2020) *Consumer insights*. AHDB [Online] https://projectblue.blob.core.windows.net/media/Default/Consumer%20and%20Retail%20Insight%20Images/CI_DemandForHalal3668_200601_WEB.pdf [Accessed on: 11/09/2021]
- Statista (2020) *Global Halal Market – Statistics and Facts*. [Online] https://www.statista.com/topics/4428/global-halal-market/#topicHeader__wrapper [Accessed on: 15/08/2021]
- Statista (2021a) *Convenience Food Worldwide*. [Online] <https://www.statista.com/outlook/cmo/food/convenience-food/worldwide> [Accessed on: 15/08/2021]
- Statista (2021b) *Islam in the UK: Statistics and Facts*. [Online] <https://www.statista.com/topics/4765/islam-in-the-united-kingdom-uk/#dossierKeyfigures> [Accessed on: 31/01/2022]
- Stone, M.A. and Desmond, J. (2007) *Fundamentals of Marketing*: London: Routledge

- Suleman, S., Sibghatullah, A. & Azam, M. (2021) Religiosity, halal food consumption, and physical well-being: An extension of the TPB, *Cogent Business & Management*, 8:1
- The Health Foundation (2020) *Improving health by tackling market failure*. [Online] Available at: <https://www.health.org.uk/publications/long-reads/improving-health-by-tackling-market-failure> [Accessed on: 22/10/2021]
- Tomkins, S. (2011) *A closer look at reports about the growth of Islam in the UK*. [Online] Available at: <https://www.theguardian.com/commentisfree/belief/2011/jan/08/islam-uk-growth-muslims> [Accessed on: 18/10/2021]
- Triggs, R. (2010). *Free to Believe? Religious Freedom in a Liberal Society*. Theos. The public theology think tank. [Online] Available at: <https://www.theosthinktank.co.uk/cmsfiles/archive/files/Reports/TheosFreetoBelieve.pdf> [Accessed 01/09/2021]
- Urbany, J., Dickson, P., & Wilkie, W. (1989). Buyer Uncertainty and Information Search. *Journal of Consumer Research*, 16(2): 208-215.
- Varlini, I., Erdem, E., & Avçila, M.Y. (2016) Exploring the Factors Affecting Purchase Intention of Halal Certified Foods in Turkey: A PLS-Path Modeling Study. *European Journal of Business and Management*. 8(4): 68-78
- Verbeke, W. (2008) “Impact of communication on consumers' food choices: Plenary Lecture,” *Proceedings of the Nutrition Society*. Cambridge University Press, 67(3), pp. 281–288. doi: 10.1017/S0029665108007179.
- Walters, D. J. and Hal E Hershfield, H. E. (2020) Consumers Make Different Inferences and Choices When Product Uncertainty Is Attributed to Forgetting Rather than Ignorance, *Journal of Consumer Research*, 47(1), 56–78
- WHO (2016) *Obesity and Overweight*. [Online] Available at: <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight#:~:text=In%202016%2C%2039%25%20of%20adults,triple%20between%201975%20and%202016.> [Accessed on: 05/10/2020]
- WHO (2021) Obesity and Overweight. World Health Organisation. [Online] Available at: <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight> [Accessed on: 12/10/2021]
- Wiebe, K. F. & Fleck, J. R. (1980) Personality Correlates of Intrinsic, Extrinsic, and Nonreligious Orientations, *The Journal of Psychology*, 105(2): 181-187
- Wright, H. (2015). YBMs: Religious Identity and Consumption among Young British Muslims. *International Journal of Market Research*, 57(1): 151–164.
- Wu, L., Zhong, Y., Shan, L., & Qin, W (2013) ‘Public Risk Perception of Food Additives and Food Scares. The Case in Suzhou, China’, *Appetite*. 70(1):.90-98
- Yener, D. (2015) The Effect of Religiosity on Product Involvement in a Muslim Society, *İşletme Araştırmaları Dergisi*, 6(1): 58-69
- Zavolokina, L., Schlegel, M. & Schwabe, G. (2020) How can we reduce information asymmetries and enhance trust in ‘The Market for Lemons’?. *Inf Syst E-Bus Manage*. 1-30