



## Article

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# Application of Theory of Planned Behaviour in Purchasing Intention and Consumption of Halal Food

## ABSTRACT

**Purpose:** **Background:** Food businesses provide halal food to cater to the dietary requirements of Muslims, especially in communities with a growing number of the ethnic minority and at public institutions such as higher education establishments. A large and growing body of literature has investigated the purchasing and consumption behaviour of halal food there are also studies that revealed consumers do not support halal food products on the grounds of animal welfare where animals were slaughtered without stunning.

**Purpose:** Thus the aim of this study was to examine the predictors of purchasing intention of halal food products and perceptions of animal welfare among Muslims and non-Muslim consumers of a public higher education institution.

**Methodology:** An online questionnaire collected information on sociodemographic profiles and importance of halal food. Descriptive statistics were used to determine the frequency of distribution of all sociodemographic characteristics. Multiple regression analyses were used to describe the Theory of Planned Behaviour (TPB) relationship and purchasing intention.

**Findings:** The regression model for all the respondents explained about 73% of the variance of the intent to purchase halal foods where  $R^2 = 0.724$ , (Adjusted  $R^2 = 0.72$ ). This was significantly different from zero  $F(3, 185) = 162.130$ ,  $p < 0.001$ . Both Muslim and non-Muslim consumers' attitudes were significant predictors of their purchasing intention of halal foods ( $\beta = 0.87$ ,  $p < 0.001$ ). The implications of subjective norms and perceived behavioural control and the lack of influence from these predictors are discussed.

**Originality:** This study revealed that both Muslim and non-Muslim consumers agreed on the importance of animal welfare, but there exist differences in perceptions of animal welfare in halal meat production. This research is of value to those working in ~~the~~ regulatory and food service settings in understanding the differences and needs of consumers and ~~it~~ contributes to a better understanding of the customers within a university setting.

**Keywords:** acceptance; animal welfare; attitudes; consumers; halal meat

## Introduction

38 The main consumers of Halal foods are Muslims since halal food is designed to meet the  
39 Islamic dietary requirement. As migrations have brought Muslims to Western countries, their  
40 dietary requirements have also influenced the meat trade networks, food supply chain and  
41 menus in food catering services. This was evident in Italy where the public education system  
42 now caters to the Muslim population (Giovine, 2013). At times, traditional food rules may limit  
43 Muslim consumers' food options within Western countries, where any sort of food is  
44 potentially available on a supermarket shelf (Giovine, 2013). Halal food production is no  
45 longer a regional practice but an international requirement to cater to the Islamic dietary  
46 sector (Stephenson, 2014). A number of UK public education institutions cater to students'  
47 special dietary needs such as vegetarian, vegan, gluten free, kosher and halal (UCAS,  
48 2016). In fact, the availability of halal food on campus can be a determining factor in  
49 enhancing Muslim students' course experiences (Asmar, 2006; Gilby et al., 2011). The  
50 Federation of Student Islamic Societies says there are over 300,000 Muslim students in  
51 higher education in the UK (FOSIS, 2016). The university setting also provides students with  
52 new experiences and transition to independence (Lewis et al., 2015). The eating  
53 environment and food environment will be different as consumers within a university setting  
54 are exposed to different social interactions, choices of food, cafes / refectories and  
55 situational factors (Meiselman, 2006).

56 The Theory of Planned Behaviour (TPB) (Ajzen, 1985) identifies the influences that predict  
57 and change behaviours. ~~where~~ Behavioural intention is influenced by: a person's attitudes;  
58 beliefs about whether individuals who are important to the person approve or disapprove of  
59 the behaviour; and perceived control over performing the behaviour. Attitude refers to the  
60 degree of favourable or unfavourable evaluation towards a behaviour and captures attribute  
61 dimensions such as important – not important, harmful – beneficial and pleasant –  
62 unpleasant (Ajzen, 2001). Subjective norms refers to the perceived social pressure to  
63 comply with expectations while perceived behavioural control (PBC) is the feeling of being in  
64 control or the confidence in performing a behaviour (Syed and Nazura, 2011). Generally  
65 speaking, the more positive the attitude, the higher the social expectations and control an  
66 individual feels about performing a behaviour, the more likely it is that the individual will do  
67 so (Ajzen, 1985).

68 Within a halal food environment, TPB has been used by Nazahah and Sutina (2012)  
69 to measure consumers' intention to purchase, consume and accept halal food products.  
70 Previous studies ~~Meanwhile, Aziz and Vui (2012)~~ reported that non-Muslims' purchasing  
71 intentions of halal food products were affected by halal awareness and certification (Aziz and  
72 Vui, 2012), attitude, subjective norm and perceived behavioural control (Haque et al., 2015)  
73 and ~~whilst Mathew, Amir, and Mohamad (2014) reported~~ positive attitudes and acceptance  
74 of halal food ~~(Mathew Amir, and Mohamad, 2014)~~ among non-Muslim consumers. Similarly,

75 [Ali et al. \(2015\) reported that positive attitude, personal conviction and perceived control](#)  
76 [predict the intention to consume halal meat among international Muslim students in China.](#)

77 Ahmed (2008) explored the marketing issues and consumers buying behaviour of halal meat  
78 in UK; however, there are limited studies that focus on investigating consumers' purchasing  
79 and consumption behaviour of halal food products in the UK – particularly within a higher  
80 education institution and ready-to-eat setting. There are also studies that revealed  
81 consumers do not support halal food products on the grounds of animal welfare where  
82 animals were slaughtered without stunning (Fuseini et al., 2016; Gibson et al., 2009;  
83 Gregory, 2005). [Whilst TPB has been criticised due to lack of experimental studies](#)  
84 [\(Sniehotta et al. 2014\), its usefulness is underlined by the ability to consider roles of](#)  
85 [additional variables and it remains a widely accepted theory in predictive behaviour studies.](#)  
86 Thus this paper aims to examine the relationship between consumers and their purchasing  
87 intention of halal foods and perceptions of animal welfare within a university setting where  
88 halal foods are routinely available.

## 90 **Methodology**

91 An online survey was conducted among students and staff from a higher education  
92 institution. The online questionnaire was developed using SurveyMonkey® after reviewing  
93 current literature (Ambali and Bakar, 2014; Mathew et al., 2014; Tieman and Che Ghazali,  
94 2014) and discussion about existing food provision and labelling with the catering and  
95 hospitality department. A 32 item questionnaire was developed and consisted of sections: i)  
96 demographics; (ii) halal status of food products; (iii) purchasing intention of halal foods; and  
97 (iv) halal certification and good (Halal) catering practices. The TPB items in section (iii)  
98 assessed participants' purchasing intention and were divided into attitudes, subjective norms  
99 and perceived behavioural control. A pilot test was carried out among students and staff  
100 (n=12) who provided recommendations to add and rephrase some questions. This helped to  
101 maximise clarity and correct interpretation of questions.

## 103 **Statistical analysis**

104 Descriptive statistics were used to determine the frequency of distribution of all  
105 sociodemographic characteristics. The internal consistency of the questionnaire was  
106 evaluated using Cronbach's alpha. Using the TPB as a guide, the authors hypothesised that  
107 positive attitudes towards halal, strong subjective norms and greater perceived control will  
108 result in stronger purchasing intention of halal products. To test the hypothesis, a multiple  
109 regression [based on direct attitudes, subjective norms and perceived behavioural control](#)  
110 was used to predict the intent to purchase halal food. In order to determine the independent

111 contribution of religion, further multiple regression was conducted on Muslim and non-  
112 Muslim groups. [Significance level is set at  \$p < 0.05\$ .](#)

113

## 114 **Results and Discussion**

115 The estimated response rate was 0.88%. 296 participants responded to the survey from an  
116 estimated potential pool of students ( $n=31,000$  [excluding off-campus students]) and staff  
117 ( $n= 2635$ ). A good balance between staff (49%) and students (51%) responded to the  
118 survey. More women (70.3%) than men (29.7%) completed the survey (Table 1). There were  
119 more non-Muslims (75.6%) compared to Muslims (18.2%) and 82% live on or nearby the  
120 campus (less than 1 hour commute).

121

122 Insert Table 1

123

124 The Muslim consumers strongly agreed that they understood the concept of halal and the  
125 halal status of food products will influence their purchases (Table 2). A lower mean score  
126 was received for feeling secure in eating halal foods in the campus. A study conducted by  
127 Ahmed (2008) who looked at consumers' buying behaviour revealed that respondents  
128 preferred to purchase halal meat from their local butchers instead of supermarkets as the  
129 language spoken made them more comfortable and they feel that they are buying from their  
130 own people who they can trust. Most Muslim consumers in this study preferred to consume  
131 non-stunned halal meats and this is supported by a high negative correlation between  
132 consumption of stunned or non-stunned meats ( $r= -0.75$ ). Previous surveys carried out by  
133 the Halal Monitoring Committee (HMC), a certifier of non-stunned meat reported that 90% of  
134 282 Islamic scholars in the UK rejected electric stunning of poultry, 85% rejected electrical  
135 stunning of larger animals whilst 9% requested that more research to be carried out in this  
136 area (HMC, 2009). However, in another recent survey in the UK, more than 95% of 66  
137 Islamic scholars and 53% ( $n=314$ ) Muslim consumers agreed that reversible stunning is  
138 halal compliant (Fuseini et al., 2017). The results regarding acceptance of reversible  
139 stunning and non-stunning are also highly dependent on the different Islamic schools of  
140 thought. Different groups of Muslims require different halal criteria on some ingredients and  
141 the slaughter method (van der Spiegel et al., 2012). [It is possible that the position of the local  
142 Lancashire Council of Mosques may have influenced the preference for non-stunned meats  
143 in this study \(LCM, 2017\).](#)

144

145 Insert Table 2 here

146

147 There was a positive and moderate correlation in quality being more important than price [for](#)  
148 [the Muslim group](#) and halal food being safe ( $r=0.52$ ) and healthy ( $r=0.47$ ). There was a  
149 slightly low but significant correlation between cleanliness, safety and quality of halal food  
150 with feeling secured in eating halal food on campus ( $r=0.37$ ). This provides support to  
151 previous findings in Belgium, where researchers argued that hygiene, taste and freshness  
152 are perceived as the most important halal meat attributes (Verbeke et al., 2013). Similarly, in  
153 the UK, consumers placed more importance on the authenticity and quality of halal meat  
154 compared to price (Ahmed, 2008).

155 Among the non-Muslim group, most indicated that they understood the concept of halal and  
156 the majority neither agreed nor disagreed that halal food is safe to consume. This finding  
157 contradicts Mathew et al. (2014) who reported that the main reason non-Muslim consumers  
158 accepted halal food was concern over food safety. The rest of the scores were all ranked  
159 below 3.00 reflecting disagreement regarding the halal status of food products. Most  
160 preferred not to eat halal foods especially non-stunned halal meats. Moderately high  
161 correlation exists between feelings of security and cleanliness of halal food ( $r=0.63$ ) and  
162 halal food is safe for consumption ( $r=0.65$ ) (Table 2). Rezai et al. (2012a) suggested that  
163 socio-environmental factors such as mixing with Muslims socially and the presence of halal  
164 labelled food contributes to non-Muslims' understanding of halal concept. It is not possible to  
165 determine if these factors had an impact in this study; however users of the university  
166 catering services come from mixed and multicultural backgrounds as reflected in the staff  
167 and student profile of the University.

168

169 Insert Table 3 here

170

171 For obvious reasons, Muslim consumers scored very high mean scores across all areas of  
172 purchasing, understanding and having access to wide selection of halal foods off campus.  
173 The impact of religion on food choices and purchasing intention depends on the religion itself  
174 and the level of religiosity of the individuals (Mohani et al., 2009). Understanding of halal  
175 labels are crucial to Muslims as is purchasing foods with halal logo. The correct labelling on  
176 halal food is essential as certain labels can be misleading or mislabelled as halal (Doosti,  
177 Ghasemi, & Rahimi, 2011; Trenwith, 2013). This is in line with Verbeke (2000) who proposed  
178 that reliable and effective communication can establish trust and confidence among  
179 consumers.

180

181 On the other hand, the non-Muslim consumers (most of whom do not eat halal foods)  
182 disagreed or were undecided regarding the purchasing and availability of halal foods on or  
183 off campus. The majority of the non-Muslim consumers also chose not to buy halal foods in

184 the future. Positive and high correlations were identified between strong religious beliefs and  
185 understanding of halal labels and certification ( $r = 0.79$ ,  $p < 0.0001$ ) and between  
186 understanding the labels and purchasing of foods with halal logo ( $r = 0.71$ ,  $p < 0.0001$ ).  
187 There ~~is~~are also ~~a~~-very high and positive correlations between disagreeing in buying foods  
188 labelled with halal logo and disagreeing with purchasing halal food in future ( $r=0.82$ ,  
189  $p<0.0001$ ) (Table 3).

190  
191 Insert Table 4 here

192  
193 All animal welfare and good catering practices' items scored high agreements among the  
194 Muslim consumers. Bonne and Verbeke (2008) also emphasise where animal welfare has  
195 been identified as a halal control point to ensure animals are treated humanely. Among  
196 Muslim consumers, there exist significant correlations between the importance of animal  
197 welfare during halal slaughter and purchasing halal raw materials and ingredients ( $r=0.64$ ).  
198 Animal welfare during religious slaughter also correlates with the importance of animal  
199 welfare in all meat products ( $r=0.66$ ). Good Halal Catering Practices also showed high  
200 correlations in good handling practices such as segregation of halal foods and using different  
201 sets of utensils ( $r=0.74$ ) and cleaning of utensils and equipment ( $r=0.79$ ,  $p<0.0001$ ) (Table  
202 4). Good Halal Catering Practices are crucial to Muslims as many are concerned whether  
203 the food is genuinely halal (Battour, Ismail, & Battor, 2010), especially in terms of the  
204 utensils and equipment used, which should be uncontaminated by pork and alcohol (Dugan,  
205 1994). However, not all Muslim consumers felt uncomfortable whilst purchasing halal food  
206 products from vendors which also sell non-halal products such as pork-based products or  
207 alcoholic drinks (Bonne and Verbeke, 2008).

208  
209 Animal welfare being important for all meat products and cleaning of utensils and equipment  
210 should be carried out according to prevailing hygiene and safety standards received the  
211 highest mean scores among Non-Muslim consumers (Table 4). Most disagree that animal  
212 welfare was taken into consideration in halal slaughter methods and, perhaps unsurprisingly,  
213 place less importance on purchasing of halal raw material and featuring halal status of food  
214 products e.g. in front of food counters or shelves. Religious slaughter remains a  
215 controversial animal welfare issue as concerns focus on the stress of animals being  
216 slaughtered without stunning (Anil, 2012; Farouk et al., 2013; Nakyinsige et al., 2013). The  
217 public places important considerations on animal welfare as they feel that they have  
218 obligations to the animals they use (Broom et al., 2016). Animal welfare is a multi-  
219 dimensional concept and includes, amongst other factors, animal health, ability to express  
220 certain behaviours, absence of pain, and absence of stress (Miele et al., 2011). Projects



221 such as DIALREL (2010) and Welfare Quality® (2005) provided platforms for dialogues and  
222 debates and proposed practical measures to integrate animal welfare in the food supply  
223 chain. However, the situation remains that pre-slaughter stunning of animals, often  
224 considered a positive indicator of animal welfare considerations, is only accepted by some  
225 Islamic Schools of Thought and, therefore, is required in some halal certification schemes  
226 but not others (Fuseini et al., 2017). This dichotomy means that ingredients being  
227 purchased for their animal welfare and halal credentials to meet the needs of broad  
228 consumer groups might result in food products that are not considered halal by some Islamic  
229 scholars, which in turn might impact consumer perception about availability of halal foods.

230 The usage of halal raw materials and preparation of halal foods in a halal kitchen  
231 area ( $r=0.69$ ), using different sets of utensils and equipment ( $r=0.66$ ) and segregation of  
232 halal foods ( $r=0.68$ ) show moderately high correlations. Similar to Muslim group, the non-  
233 Muslim consumers also showed high correlations in using designated kitchen for preparation  
234 of halal food and segregation of halal foods ( $r=0.80$ ) and using different sets of utensils  
235 ( $r=0.89$ ). However, the mean scorings showed the non-Muslim group neither agrees nor  
236 disagree regarding the segregation and utilisation of different sets of utensils.

237 Multiple linear regression was performed to evaluate the TPB model for purchasing  
238 intention behaviour. Cronbach alpha scores for attitudes (0.86) and subjective norms (0.71)  
239 were satisfactory demonstrating consistency between subjects when answering the  
240 questions, although the Cronbach's alpha for perceived behavioural control is low (0.35).  
241 The Intraclass Correlation Coefficient (ICC) values range between 0 and 1, with values  
242 above 0.8 considered excellent reliability, 0.6 – 0.8 good, 0.4 – 0.6 moderate, and less than  
243 0.4 as low reliability (Landis and Koch 1977). The regression model for all the respondents  
244 explained about 73% of the variance of the intent to purchase halal foods where  $R^2 = 0.724$ ,  
245 (Adjusted  $R^2 = 0.72$ ). This was significantly different from zero  $F(3, 185) = 162.130$ ,  $p <$   
246  $0.001$ . However, only one predictor (attitude) contributed significantly to the prediction of  
247 purchasing intention of halal food products (Figure 1). This suggests that participants with  
248 positive attitudes towards halal food products were more likely to purchase them.

249  
250 Insert Figure 1 here

251  
252 Furthermore, attitude, subjective norms and perceived behavioural control were regressed  
253 against intention according to religion, both the Muslim and non-Muslim consumers' attitudes  
254 are significant predictors in purchasing of halal foods (Table 5). Muslim consumers score a  
255 very high mean in attitude reflecting the importance placed on purchasing halal food. The  
256 Islamic religion clearly dictates the importance of halal diet which in turn becomes an  
257 important factor in performing a behaviour. This supports a number of previous studies who



258 found that positive or favourable attitudes resulted in higher likelihood of purchasing intention  
259 (Bonne et al., 2007; Syed and Nazura, 2011). However, the mean scoring for non-Muslim  
260 group was low suggesting, perhaps unsurprisingly, that non-Muslims' attitudes do not place  
261 importance on halal food purchase. It would be important [in future](#) to study other attitudes or  
262 factors and identify which, if any, are positive.

263

264 Insert Table 5 here

265

266 There were negative but insignificant relationships between subjective norms in purchasing  
267 of halal foods. Previous studies revealed that influence of peers (Bonne et al. 2007; Mathew  
268 et al., 2014; Syed and Nazura, 2011) was a significant predictor of purchasing or consuming  
269 intention of halal food. Subjective norms were related to compliance with social expectations  
270 and feeling of pressure (e.g. from family/colleagues/lecturers). There is a possibility that a  
271 reduction in social norms and pressure will improve the purchasing intention of halal food.  
272 According to Jamal (2003), the majority of British Muslims – particularly the first generation  
273 tend to conform to cultural traditions and expectations, whilst the young British Muslims  
274 (second and third generations) experience a clash of cultures both at home and outside  
275 where some will assimilate or integrate and a minority may separate or marginalise  
276 themselves (Ansari, 2002; Jamal and Shukor, 2014). This study, set in a multicultural  
277 university campus, did not discriminate between British and non-British Muslims so there is  
278 no data to support such a possible reduction in social norms. Subjective norms' intentions  
279 can be experienced as pressure or coercion and may have poorer motivational impact  
280 (Sheeran, Norman, & Orbell, 1999).

281 The perceived feeling of being in control due to the environment e.g. availability of  
282 halal food in campus and ease of differentiation of halal foods did not influence the  
283 purchasing behaviour of halal food among Muslim and non-Muslim consumers. The Muslim  
284 group disagreed ( $2.49 \pm 1.24$ ) while non-Muslims were unsure ( $2.99 \pm 0.81$ ) that they have  
285 access to a wide selection of halal products (Table 3). This is in contrast to the views of  
286 catering services management who believed that a selection of halal foods [we](#)are available.  
287 If there is high intention or motivation to purchase halal food products by the Muslim group  
288 but lack of availability, this will reduce the buying desire (Vermeir and Verbeke, 2004). This  
289 is in contrast with previous studies that found significant and positive relationship between  
290 perceived control and purchasing behaviour (Bonne et al., 2007; Mukhtar and Butt, 2012).  
291 However, this finding is consistent with another non-halal related study ~~who~~[that](#) found that  
292 perceived control is not a significant predictor in consumption of ready meals (Mahon,  
293 Cowan, & McCarthy, 2006). This chimes with behaviour in this catering setting where  
294 prepared meals are offered for purchase. Consumers with a high level of self-confidence

295 when making a purchasing decision are less influenced by perceived control. It is proposed  
296 that a self-efficacy measurement be included to increase predictability in future studies  
297 (Mahon et al., 2006; Povey et al., 2000).

298 The regression model for Muslims explained about 58% of the variance of the intent  
299 to purchase halal foods where  $R^2 = 0.58$ , (Adjusted  $R^2 = 0.54$ ) while in the non-Muslim  
300 group, the model explains 34% of the variance where  $R^2 = 0.34$ , (Adjusted  $R^2 = 0.22$ ). Both  
301 models were significantly different from zero where  $F(3, 31) = 14.16$  for the Muslim and  
302  $F(3, 141) = 23.84$  for non-Muslim consumers. Additional predictors must be sought as more  
303 than 60% of the variance in purchasing intention among non-Muslims remains unexplained.  
304 Other studies revealed increased halal awareness (Aziz and Vui, 2012; Nor Sara et al.,  
305 2014), halal certification (Aziz and Vui, 2012), marketing promotion and branding (Aziz and  
306 Vui, 2012) and knowledge about product ingredients (Mohani et al., 2009; Nor Sara et al.,  
307 2014) positively influenced consumers to purchase halal food products. Meanwhile, food  
308 products without a locally recognised halal logo, food products from non-Muslim countries,  
309 unfamiliar brands and lack of information on ingredients resulted in consumers being less  
310 confident with the food products (Rezai et al., 2012b). [A recent review by Talib et al. \(2016\)](#)  
311 [captured the essence of how a highly institutionalised halal industry \(i.e. strong government](#)  
312 [support, consumer demand and industry competition\) encourages the implementation of](#)  
313 [halal food certification which could lead to positive acceptance among Muslim consumers.](#)

### 314 **Limitations and future research**

315 The results of this study cannot be generalised due to the small sample size. It also  
316 represents a snapshot of a UK institute of higher education. Gender-related differences i.e.  
317 male being more likely to eat off campus and religion-related differences i.e. Muslims and  
318 non-Muslims should be interpreted with caution as the distribution of male and female  
319 (Orfanos et al., 2009) and Muslims and non-Muslims are unequal. King and Crowther (2004)  
320 recognised that religiosity is sensitive and private in nature, thus studies exploring  
321 consumers' beliefs may be subjected to reduced validity and reliability. The internal  
322 consistency particularly for PBC is low and can be improved by increasing the number of  
323 questions and ensure high inter-relatedness between items (Tavakol and Dennick, 2011).  
324 [Although there are possible limitations of TPB \(Sniehoff et al. 2014\), the extended TPB and](#)  
325 [potential roles for variables allow researchers to work within a broader framework and to](#)  
326 [account for more variance in behaviour \(Ajzen, 2015; Armitage, 2014\). For example, in](#)  
327 [addition to the three main antecedents or predictors, other factors that influence consumers](#)  
328 [purchasing behaviour of halal food should be explored. It is possible that other factors would](#)  
329 [reflect different results i.e. culture, nationality and ethnicity \(Said et al., 2014\), trust and](#)  
330 [values \(Bonne et al., 2007\) and confidence towards halal food products \(Said et al., 2014\).](#)

332 The study ~~can~~could be improved by increasing the sample size and including participants  
333 from other universities or by being expanded to other regions. It also reveals that the  
334 consumers have different perceptions of animal welfare and this is an area that should be  
335 explored further.

336

### 337 **Conclusion**

338 In order to increase the sales of halal food products on campus, the amount, variety and  
339 visibility of halal food could be increased at selected cafeterias and refectories. The campus  
340 adheres to strict good hygiene and halal practices and this can be an effective strategy in  
341 marketing of halal food to Muslim consumers. This study supports previous findings that  
342 attitude is a significant factor in influencing purchasing intention of halal food. Although both  
343 Muslim and non-Muslim consumers agreed on the importance of animal welfare, there exist  
344 differences in perceptions of animal welfare in halal meat production. Differences also exist  
345 between both groups particularly in their attitudes and choices towards halal food. This is an  
346 area that warrants further investigation into consumers' food choices and beliefs towards  
347 halal food. Future studies should be carried out to understand the differences and to raise  
348 awareness among consumers on the integration of animal welfare in the food supply chain.  
349 This study emphasises the needs ~~for~~of both types of consumers and contributes to a better  
350 understanding of the customers within a university setting.

351

352

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536 Table 1 Sociodemographic characteristics and campus eating patterns of survey  
 537 respondents

| Demographic profiles                 | Number of respondents (%) |
|--------------------------------------|---------------------------|
| N = 296                              |                           |
| Staff                                | 127 (42.9)                |
| Student                              | 151 (51.0)                |
| Staff and student                    | 18 (6.1)                  |
| Male                                 | 88 (29.7)                 |
| Female                               | 208 (70.3)                |
| Age (295)                            |                           |
| 18-25 yrs                            | 101 (34.2)                |
| 26 -35 yrs                           | 69 (23.4)                 |
| 36 – 45 yrs                          | 50 (16.9)                 |
| 46 – 55yrs                           | 49 (16.6)                 |
| 56yrs and above                      | 26 (8.8)                  |
| Education (293)                      |                           |
| Secondary Education                  | 23 (7.8)                  |
| HNC or Foundation Degree             | 18 (6.1)                  |
| Degree                               | 162 (55.3)                |
| Masters                              | 61 (20.8)                 |
| Doctorate                            | 29 (9.9)                  |
| Religion (295)                       |                           |
| No religion                          | 117 (39.7)                |
| Buddhist                             | 1 (0.3)                   |
| Christian (all denominations)        | 94 (31.9)                 |
| Hindu                                | 4 (1.4)                   |
| Jewish                               | 0                         |
| Muslim                               | 54 (18.3)                 |
| Sikh                                 | 2 (0.7)                   |
| I prefer not to indicate             | 18 (6.1)                  |
| Any other religion (please describe) | 5 (1.7)                   |
| Eat on campus (243)                  |                           |
| Yes                                  | 203 (83.5)                |
| No                                   | 40 (16.5)                 |

538 [Results are presented as number of respondents \(%\). A total of 296 participants responded to the survey. A good](#)  
 539 [balance between staff \(49%\) and students \(51%\) and more non-Muslims \(75.6%\) compared to Muslims \(18.2%\)](#)  
 540 [completed the survey.](#)

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550 Table 2 Halal status understanding and purchasing/consumption of food products

| No | Items   | Muslims (n=42) |      | Non-Muslims (n=167) |        |
|----|---|----------------|------|---------------------|--------|
|    |   | Mean           | SD   | Mean                | SD     |
| 1  | I understand the concept of Halal                             | 4.93           | 0.26 | 3.85                | 1.01   |
| 2  | The Halal status of food influences where I purchase my meals | 4.79           | 0.72 | 2.85                | 1.57   |
| 3  | Halal is concerned about cleanliness, safety and quality      | *4.55          | 0.89 | **2.49              | 1.07   |
| 4  | I feel secure eating Halal food on campus                     | *3.71          | 1.38 | **2.53              | 1.06   |
| 5  | I feel that Halal food is safe to consume                     | **4.67         | 0.82 | **3.00              | 1.19   |
| 6  | The quality of Halal food is more important than price        | **4.64         | 0.69 | 2.60                | 0.98   |
| 7  | Halal food is healthy food                                    | **3.90         | 1.10 | 2.50                | **0.92 |
| 8  | I prefer to eat Halal food products                           | 4.76           | 0.69 | 1.66                | 1.02   |
| 9  | I prefer to eat Halal meats that have been stunned            | **2.26         | 1.34 | 2.78                | 1.29   |
| 10 | I prefer to eat non-stunned Halal meats                       | **4.05         | 1.23 | 2.08                | 1.09   |

551 [Results are presented as mean ± sd. Items are measured on a 5-point scale ranging from 1 strongly disagree \(1\)](#)  
552 [to strongly agree \(5\) using descriptive statistics and correlations \(\\*\\*correlations at p < 0.0001; \\*p < 0.05\). 18](#)  
553 [respondents who preferred not to indicate their religion were omitted from statistical analyses. The Muslim](#)  
554 [consumers strongly agreed that they understood the concept of halal and the halal status of food products will](#)  
555 [influence their purchases. Among the non-Muslim group, most indicated that they understood the concept of halal](#)  
556 [and the majority neither agreed nor disagreed that halal food is safe to consume. The rest of the scores were all](#)  
557 [ranked below 3.00 reflecting disagreement regarding the halal status of food products. Most non-Muslims](#)  
558 [preferred not to eat halal foods especially non-stunned halal meats.](#)

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577 Table 3 Purchasing of halal foods

| No | Items   | Muslims (n=35) |      | Non-Muslims (n=140) |      |
|----|---|----------------|------|---------------------|------|
|    |   | Mean           | SD   | Mean                | SD   |
| 1  | My religious beliefs influence my purchasing intention                            | *4.91          | 0.28 | 1.99                | 1.22 |
| 2  | Eating non-Halal foods are products are forbidden in Islam                        | 4.63           | 0.97 | 3.12                | 0.92 |
| 3  | Understanding of Halal labels and certification influence my purchasing intention | *4.69          | 0.80 | 2.71                | 1.35 |
| 4  | I will purchase foods labelled with Halal logo                                    | *4.49          | 1.01 | *2.04               | 1.19 |
| 5  | I have access to a wide selection of Halal food on campus                         | 2.49           | 1.24 | 2.99                | 0.81 |
| 6  | I have access to a wide selection of Halal food off campus                        | 4.20           | 0.99 | 3.12                | 0.93 |
| 7  | I will choose to buy Halal food on campus in future                               | 4.20           | 1.05 | *1.75               | 1.01 |

578 [Results are presented as mean ± sd. Items are measured on a 5-point scale ranging from 1 strongly disagree \(1\)](#)  
579 [to strongly agree \(5\) using descriptive statistics and correlations \(\\*correlations at p < 0.0001\).](#) 18 responses  
580 [which preferred not to indicate their religion were omitted from statistical analyses. Muslim consumers scored](#)  
581 [very high mean scores across all areas of purchasing, understanding and having access to wide selection of](#)  
582 [halal foods off campus. Positive and high correlations were identified between strong religious beliefs and](#)  
583 [understanding of halal labels and certification \(r = 0.79, p < 0.0001\) and between understanding the labels and](#)  
584 [purchasing of foods with halal logo \(r = 0.71, p < 0.0001\).](#)  
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603 Table 4 Good catering practices of halal foods

| No. | Items  | Muslims (n=29) |      | Non-Muslims (n=122) |      |
|-----|--|----------------|------|---------------------|------|
|     |  | Mean           | SD   | Mean                | SD   |
| 1   | Animal Welfare is important in Halal slaughter methods   | *4.27          | 1.13 | 2.83                | 0.59 |
| 2   | It is important that the university purchases Halal raw materials and ingredients  | *4.48          | 0.95 | 2.28                | 1.27 |
| 3   | Animal welfare is important for all meat products  | *4.34          | 0.97 | 4.49                | 0.91 |
| 4   | Halal raw materials and ingredients should have a dedicated storage area or racks  | 4.76           | 0.58 | *3.33               | 1.33 |
| 5   | Halal foods sold on campus should be prepared in a designated Halal kitchen area   | 4.52           | 0.69 | *2.95               | 1.33 |
| 6   | Halal foods sold on campus should be prepared using different sets of utensils and equipment from non-Halal foods  | *4.86          | 0.44 | *3.04               | 1.35 |
| 7   | Halal foods sold on campus should be segregated (e.g. using different utensils/shelves)  | *4.66          | 0.72 | *3.04               | 1.33 |
| 8   | Cleaning of utensils and equipment should be according to prevailing hygiene and safety standards  | *4.90          | 0.31 | 4.56                | 0.81 |
| 9   | I would like the university to feature the Halal status of food in more prominent areas (e.g. in front of food counters/shelves)   | 4.55           | 0.83 | 2.87                | 1.40 |
| 10  | I feel uncomfortable buying Halal certified foods from a shop/cafe which also sells non-Halal food(e.g. pork-origin meals/meat not slaughtered to Halal method/alcoholic drinks) | 3.59           | 1.32 | 2.40                | 1.21 |

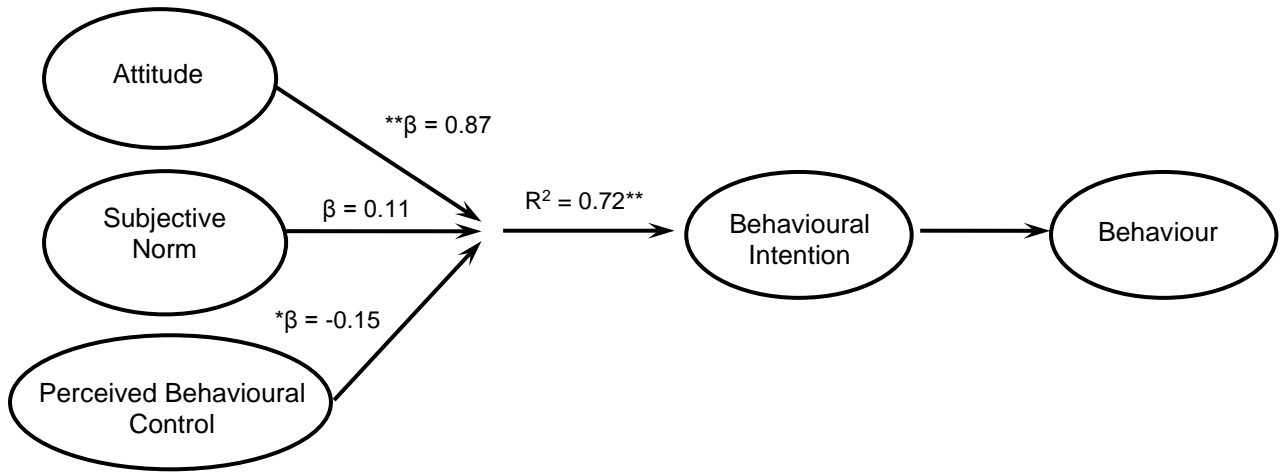
604 [Results are presented as mean  \$\pm\$  sd. Items are measured on a 5-point scale ranging from 1 strongly disagree \(1\)](#)  
605 [to strongly agree \(5\) using descriptive statistics and correlations \(\\*correlations at p < 0.0001\).](#) 18 responses  
606 [which preferred not to indicate their religion were omitted statistical analyses. Animal welfare scored high](#)  
607 [agreement among the Muslim consumers with significant correlations between the importance of animal welfare](#)  
608 [during halal slaughter and purchasing of halal raw materials and ingredients \(r=0.64\). Non-Muslim consumers](#)  
609 [mostly disagree that animal welfare was taken into consideration in halal slaughter methods.](#)  
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611 Table 5 Purchasing intention of halal products among Muslims and non-Muslim consumers

| TPB components                | Muslims (n=35) |      |         | Non-Muslims (n=145) |      |         |
|-------------------------------|----------------|------|---------|---------------------|------|---------|
|                               | Mean           | SD   | $\beta$ | Mean                | SD   | $\beta$ |
| Attitude                      | 4.51           | 0.94 | **0.81  | 1.88                | 0.90 | 0.55*   |
| Subjective norms              | 2.80           | 0.95 | -0.02   | 1.43                | 0.72 | 0.02    |
| Perceived behavioural control | 2.93           | 1.00 | -0.11   | 2.98                | 0.69 | -0.04   |

|           |      |      |      |      |
|-----------|------|------|------|------|
| Intention | 4.40 | 1.03 | 1.50 | 0.84 |
|-----------|------|------|------|------|

Results are presented as mean ± sd. Items are measured on a 5-point scale ranging from 1 strongly disagree (1) to strongly agree (5) using descriptive statistics and multiple regression (\*p < 0.05 and \*\*p < 0.0001). 10 participants that preferred not to indicate their religion were omitted from the model. Both the Muslim and non-Muslim consumers' attitudes are significant predictors in purchasing of halal foods.



**Figure 1.** Theory of Planned Behaviour model for purchasing intention of halal food products (\*p < 0.05; \*\*p < 0.001) (n=190). Using multiple regression, the model explained about 73% of the variance of the intent to purchase halal foods where  $R^2 = 0.724$ , (Adjusted  $R^2 = 0.72$ ). This was significantly different from zero  $F(3, 185) = 162.130$ ,  $p < 0.001$ . However, only one predictor (attitude) contributed significantly to the prediction of purchasing intention of halal food products ( $\beta=0.87$ ,  $p < 0.001$ ).