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1 **The Theory of Planned Behaviour and healthy diet: examining the mediating effect of**
2 **traditional food**

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4

5 **Abstract**

6 Traditional foods are often perceived to be high in fat and energy-dense and therefore individuals that
7 aim to adopt a healthy diet could be discouraged to consume them. To date, consumer research
8 investigating the interlink of healthy and traditional eating attitudes is lacking. We conducted a cross-
9 country study with a total sample of 5928 consumers from 10 countries worldwide and used the
10 Theory of Planned Behavior as a theoretical framework, to examine the mediating effect of attitude
11 towards traditional eating on the behavioral intention to adopt a healthy diet (target behavior). Our
12 results showed a general positive attitude towards adopting a healthy diet. The model showed that
13 Attitude, Subjective Norms, and Control Beliefs related to the Behavioral Intention of adopting a
14 healthy diet are all significantly correlated with the Attitude towards traditional eating (ATT-TE).
15 Moreover, results indicated that the ATT-TE positively and significantly influence the behavioral
16 intention of adopting a healthy diet. However, if we look at the country level, the effects of the ATT-
17 TE are very heterogeneous. This could be due to the different perception between the interlink of
18 traditional food and healthiness among people, which is often culturally dependent. Several practical
19 and policy implications could include i) policies to increase familiarity with and appreciation towards
20 traditional healthy food, ii) opportunities for campaigns to strengthen the regional marketing of
21 traditional and healthy products, and iii) variations in positioning and messaging emphasis, based on
22 consumer perceptions on the healthiness of traditional food.

23 **Keywords:** Attitude, Geographical Indication, Local Foods, Intention, SEM, TPB

24

25 **Highlights:**

- 26 • Attitude towards traditional eating influences the intention to adopt a healthy diet
- 27 • Local food producers should strengthen healthy attributes associated to their products
- 28 • Results heterogeneities exist across the countries due to a difference in food culture
- 29 • Policies should consider the interlink of food culture and nutrition profiles of food

30

31

32 1. Introduction

33 A growing interest in traditional food products at the global level has emerged in recent decades,
34 despite the increased industrialization and globalization of food systems (Aprile et al., 2016; Caputo
35 et al., 2018; Lipan et al., 2017; Pieniak et al., 2009). There is no single widely accepted definition of
36 the concept of traditional food, but there is a general agreement regarding the strict link between
37 certain food and a specific geographical location along with a set of traditions, including production
38 practices, gastronomic heritage, and culinary habits (Caputo et al., 2018). These quality features
39 contribute to this growing market, especially within the European Union¹ (Guiné, Florença, Barroca,
40 & Anjos, 2021; Mancini, Arfini, Veneziani, & Thévenod-Mottet, 2017). Consumer interest in
41 traditional foods has also been growing in the United States, where alternative agri-food marketplaces
42 are growing fast (Woods & Thilmany, 2018) and protected traditional products, such as Vidalia[®]
43 Onions and Idaho[®] Potatoes, are becoming increasingly popular (Barham, Bingen, & Hinrichs, 2011).

44 Traditional eating patterns may have potential health properties, which have been tested over
45 time and in many different diets globally (Trichopoulou, Soukara, & Vasilopoulou, 2007). For
46 example, on the basis of observational studies, this positive link has been observed in the
47 Mediterranean diet, which is associated with exceptional longevity (Willett et al., 2019). Many other
48 traditional diets in African, South American, and Asian countries include the consumption of modest
49 amounts of animal-sourced foods and are largely represented by plant-based dishes (Gabriel,
50 Ninomiya, & Uneyama, 2018; Sproesser et al., 2022; Willett et al., 2019). However, the nutritional
51 profiles of traditional foods differ across countries and cultures (Lipan et al., 2017). As a result, the
52 perception of healthiness of a traditional diet could be context-dependent; for example, eating on

¹ The European Commission defines “traditional” as *proven usage on the domestic market for a period that allows transmission between generations; this period is to be at least 30 years* (European Union, 2012). Moreover, traditional foods in the EU can be protected with registered quality labels, such as the Protected Designation of Origin (PDO), the Protected Geographical Indication (PGI), and the Traditional Speciality Guaranteed (TSG) (Caputo et al., 2018; Guiné et al., 2021).

53 special occasions (e.g., festivities) may be perceived as more sophisticated or more hedonic, rather
54 than being associated with nutrition and health benefits (Pieniak et al., 2009; Wongprawmas, Sogari,
55 Menozzi, & Mora, 2022). Yet, research examining the interlink between healthy and traditional eating
56 is lacking. With unhealthy food consumption still being a major issue in both developed and
57 developing countries, it is of paramount importance to understand whether attitude towards traditional
58 food is linked to the intention of healthy eating perceived by consumers.

59 This study attempts to fill this gap in the literature by applying an extension of the Theory of
60 Planned Behavior (TPB) to determine whether consumer attitudes towards traditional foods are
61 associated with the attitude and intention to adopt a healthy diet. We used the TPB as a theoretical
62 framework to examine the mediating effect of attitude towards traditional eating on the behavioral
63 intention to adopt a healthy diet (target behavior). As consumer perception of the healthiness of
64 traditional food may be context-dependent, we conducted a cross-country study with a total sample
65 of 5928 consumers from 10 countries worldwide, namely: Brazil, China, Germany, Israel, Italy,
66 Japan, Republic of Korea, Poland, Spain, and the USA. The inclusion of multiple countries allows to
67 account for differences in food cultures. Past studies have shown that the link between traditional
68 eating and healthy diet could differ among countries (e.g., Sproesser et al., 2022). To our knowledge
69 consumers' studies on traditional foods have been conducted in several European countries (e.g.,
70 Italy, Spain) but not much research in this area has been conducted in Asia or Latin America despite
71 their long history in traditional eating (García-Barrón, Leyva-Trinidad, Carmona-Escutia, Romero-
72 Medina, & Villanueva-Rodríguez, 2021).

73 By applying Structural Equation Modeling (SEM), we propose a social–psychological model
74 to explain and predict the behavioral intention of adopting a healthy diet. Contributions to marketing
75 theory include the integration of a new developed construct (consumer attitude towards traditional
76 food eating, ATT-TE) with constructs adapted from the extant literature. A better understanding of

77 the effects of the constructs of the TPB on the adoption of a healthy diet through attitudes towards
78 traditional food eating is expected to be useful for communication campaigns aimed at enhancing the
79 target behavior. Thus, some practical and policy implications could include i) policies to increase
80 familiarity with and appreciation towards traditional healthy food, ii) opportunities for marketing
81 promotions to strengthen the regional marketing of traditional and healthy products, and iii) variations
82 in positioning and messaging emphasis, based on consumer perceptions on the healthiness of
83 traditional food.

84 Our study contributes to understanding the adoption of a healthy diet, including the attitude
85 toward traditional eating, through the TPB model. Based on our findings, the significant attitude–
86 intention relationship indicates that when consumers hold more positive attitudes toward traditional
87 and healthy eating, their intention to adopt a healthy diet is strengthened. However, cross-country
88 differences exist. In fact, the use of the wide range of investigated countries ($n = 10$) allowed us to
89 consider a global perspective, as food culture is extremely heterogeneous and remarkable differences
90 exist at the national level (Galli, 2018). For example, differences in the impact of attitude toward
91 traditional eating were observed between southern and northern European countries. Our findings
92 could be used to define business and policies strategies to aid in the adoption of healthy diets and the
93 promotion of traditional food.

94 In the following sections, we first describe the theoretical framework, then present the
95 methods used, including the measurement scales, sampling, and data analysis techniques. Next, we
96 describe both the results and discuss our findings. The final section summarizes the overall study
97 outcomes, includes the limitations, and provides future research directions.

98 2. Theoretical framework

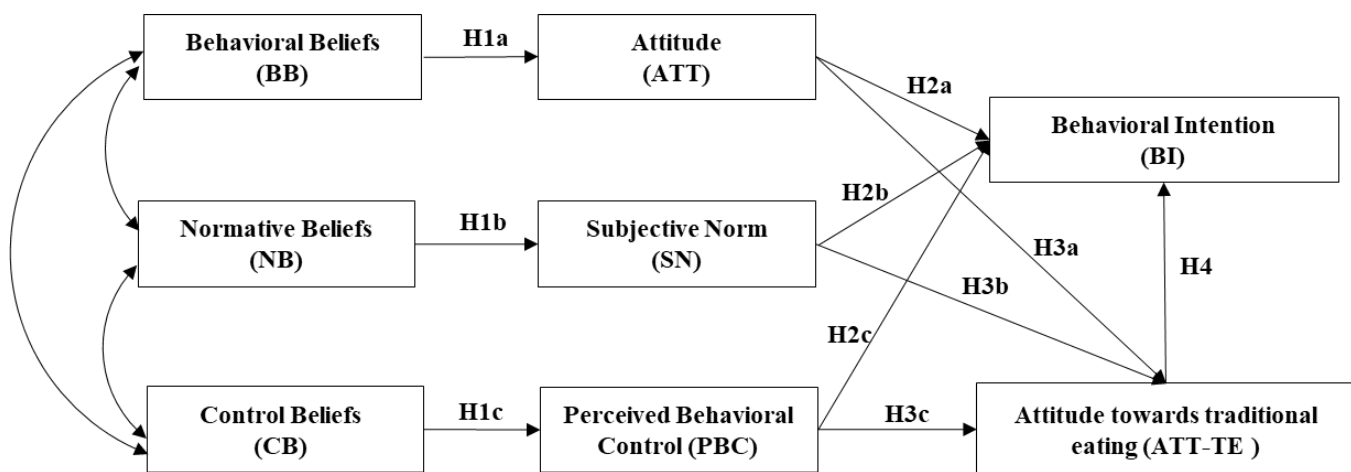
99 The most adopted attitude–behavior theories are the Theory of Reasoned Action (TRA) (Ajzen &
100 Fishbein, 1980) and its extension, the Theory of Planned Behavior (TPB) (Ajzen, 1991). These

101 social–psychological theories attempt to predict and understand why an individual may follow certain
102 choice behaviors. Several studies have applied both theories to predict and explain eating-related
103 behaviors (McEachan, Conner, Taylor, & Lawton, 2011; Riebl et al., 2015), including the adoption
104 of healthy diets (for a complete review see Biasini et al., 2021). Most of the studies on healthy eating
105 have mostly focused on single food categories, such as fruits and vegetables (Carfora, Caso, &
106 Conner, 2016; Menozzi, Sogari, & Mora, 2015, 2017; Wilson, O’Connor, Lawton, Hill, & Roberts,
107 2016), organic food (Scalco, Noventa, Sartori, & Ceschi, 2017), and, more recently, plant-based foods
108 (Contini, Boncinelli, Marone, Scozzafava, & Casini, 2020; Wang & Scrimgeour, 2021).

109 So far, only a few studies have used the TPB approach to investigate consumer intention to
110 consumer traditional food and its determinants. Memon et al. (2019) studied how international visitors
111 perceive ethnic food, and found that subjective norms (i.e., recommendations from close friends and
112 opinions of people who are important to them) toward consuming Malay food was the strongest
113 predictor of the intention among a group of international students. Hsu et al. (2018) investigated the
114 behavior of consuming Taiwanese traditional food by a group of Caucasian tourists, including food
115 neophobia which was found an important moderating effect between attitude and intention. Our study
116 adds to this existing literature by determining the behavioral reasons (beliefs, attitude, subjective
117 norm, and perceived behavioral control) which could explain why individuals may or may not adopt
118 a healthy diet (Hansen & Thomsen, 2018) based on their attitude towards traditional food
119 consumption. The conceptual framework, presented in Figure 1, is based on the TPB model.

120

121



122

123 **Figure 1.** Conceptual framework

124 Based on the literature, intention captures a person’s readiness to assume a given behavior
 125 (Ajzen, 1991). We postulate that an individual’s behavioral intention (BI) to adopt a healthy diet is
 126 the immediate antecedent of the behavior itself. The TPB identifies three classes of antecedents of
 127 behavioral intention, namely the Perceived Behavioral Control (PBC), the Attitude (ATT), and the
 128 Subjective Norm (SN). According to the TPB model, these three direct predictors of behavioral
 129 intention are guided by indirect predictors or underlying beliefs. These beliefs include the likelihood
 130 of consequences of the behavior (behavioral beliefs - BB), beliefs about what the social environment
 131 thinks with regard to whether one should perform the behavior (normative beliefs - NB), and beliefs
 132 regarding the perception of facilitating or inhibiting factors towards performing the behavior (control
 133 beliefs - CB). Exploring the relationships between these underlying beliefs and their relative direct
 134 predictors (i.e., BB and ATT; NB and SN; CB and PBC) and intentions can contribute to the
 135 development of target interventions and programs to address dietary behaviors (Menozzi et al., 2017;
 136 Riebl et al., 2015). The target interventions should be directed at modifying the salient beliefs, in
 137 order to produce the corresponding changes in ATT, SN, and PBC (Biasini et al., 2021). Hence, we
 138 hypothesize that:

139 **H1.** Behavioral beliefs (a), normative beliefs (b), and control beliefs (c) positively influence the
140 attitude towards adopting a healthy diet.

141 The PBC, ATT, and SN are considered to be the direct predictors of the behavioral intention.
142 The PBC can be defined as an individual's perceived ability over engaging in a certain behavior, the
143 ATT denotes their (favorable or unfavorable) evaluation of the behavior, and the SN represents the
144 perceived social pressure (i.e., what other individuals think) whether one should perform that
145 behavior. Past research (Biasini et al., 2021; McDermott et al., 2015) examining the association
146 between TPB constructs and healthy diet behavior, have shown that ATT is almost always the most
147 relevant predictive construct with a large association towards intention in magnitude, followed by the
148 other two predictors with a medium association (SN and PBC with intention, PBC and intention with
149 behavior). Thus, we postulate that:

150 **H2.** Attitude (a), subjective norm (b), and perceived behavioral control (c) are related with the
151 behavioral intention towards adopting a healthy diet.

152 A complex interplay between traditional eating and healthy diet culture exists (Sproesser et al.,
153 2022). Some authors have proposed that eating traditional foods is associated with balanced healthy
154 diets as well as cultural integrity (Deaconu et al., 2021; Gabriel et al., 2018), while others have argued
155 that individuals interested in healthy eating will generally consume less traditional foods (Guiné et
156 al., 2021; Pieniak et al., 2009). This latter viewpoint could be motivated by the fact that European
157 consumers tend to perceive traditional foods as food high in fat and energy-dense products (Pieniak
158 et al., 2009). Thus, individuals that aim to adopt a healthy diet could be discouraged from including
159 traditional foods in their diets. We therefore postulate that consumer attitude towards eating
160 traditional foods from local regions is a mediator between the antecedents of the TPB and the intention
161 to adopt a healthy diet. In support of this, we hypothesize that:

162 **H3.** Attitude (a), subjective norm (b), and perceived behavioral control (c) to adopt a healthy diet
163 are related to the attitude towards eating traditional foods.

164 **H4.** The attitude towards traditional eating has a mediating effect between the main TPB constructs
165 (i.e., ATT, SN, and PBC) and the behavioral intention to adopt a healthy diet.

166 Moreover, the literature thus far has only focused on a single country population whereas, in our
167 study, we implement a theoretical model using a sample from 10 countries from different regions in
168 the world. Considering that traditional foods have always played an important role in the customs of
169 different cultures (García-Barrón et al., 2021; Sproesser et al., 2022), the last hypothesis is:

170 **H5.** H1-H4 differs across countries. For example, European countries are expected to act similar
171 among them but different compared to non-EU countries.

172

173 3. Materials and Methods

174 3.1. Data Collection and Sample

175 The data collection was conducted from June 2018 to July 2019 in ten different countries: Brazil,
176 China, Germany, Israel, Italy, Japan, Republic of Korea (South Korea), Poland, Spain, and the United
177 States. A final sample of 5928 individuals (58.9% female) was included in the further analyses. In all
178 countries, the data was collected using face-to-face interviews², except for the U.S. sample, for which
179 a web-based survey administrated through Qualtrics® was used. Participants were not compensated³.
180 Samples were not representative of the national populations, except for the U.S. sample, which was
181 stratified in terms of gender, age, income, race, and region (Northeast, Midwest, South, and West).⁴

² The data collection was conducted by several research assistants (n = 13 in total) in front of main grocery venues, in order to find individuals responsible for the household food shopping. The specific locations where the survey was administrated included Spain (Seville), Italy (Siena, Perugia, Avellino), Brazil (Belo-Horizonte, Rio de Janeiro), Japan (Tokyo), Poland (Rzeszów), Israel (Be'er Sheva), Germany (Osnabrück), China (Nanjing), Republic of Korea (Incheon).

³ US consumers who participated in the survey may have received a compensation upon an agreement with the market agency, Qualtrics.

⁴ The research was performed in accordance with the Declaration of Helsinki. The consent to participate in the study was gathered before proceeding and ethics approval for the study protocol was obtained by an institutional review board (approval registration Protocol ID#: 1810008359). In particular, US participants gave informed consent by ticking a

182 Descriptive statistics for the pooled and segmented samples are presented in the Appendix (Table
183 A1).

184

185 3.2. The Questionnaire

186

187 3.2.1. Questionnaire and TPB Measures

188 A structured questionnaire consisting of three sections was developed after an in-depth literature
189 review of related studies in each of the studied countries. The master questionnaire was originally
190 developed in English using the measures adapted by other studies. Then native speakers with English
191 proficiency translated the survey in the different languages of the countries investigated. The first
192 section included questions designed to assess the belief constructs (BB, NB, and CB); the second
193 section provided statements aimed at investigating the predictor constructs (ATT, SN, and PBC); and
194 the third section included questions aimed at measuring the attitude towards traditional eating (ATT-
195 TE) and the behavioral intention to adopt a healthy diet (BI).

196 Each of these constructs was defined following previous applications and following the
197 conceptual and methodological considerations of Fishbein and Ajzen (Fishbein & Ajzen, 2011). The
198 items in each construct were anchored on a unipolar five-point scale ranging from “strongly disagree”
199 to “strongly agree”, except for ATT, for which four five-point unipolar semantic differential items
200 were preferred. The list of the constructs and items used in this study, including the means and
201 standard deviation for the whole sample is provided in the Appendix (Table A2). The behavioral
202 beliefs were measured using four items adopted from Conner, Norman, & Bell (2002) and Nosi,
203 D’Agostino, Pagliuca, & Pratesi (2014). The normative belief strength and control beliefs were each
204 measured using three statements adopted from Menozzi et al. (2015) and Menozzi et al. (2017),

respective box at the beginning of the survey; whereas in the rest of the countries participants who filled in the paper-pencil questionnaires gave written informed consent before beginning the study.

205 respectively. The attitudes towards adopting a healthy diet were measured using four five-point
206 semantic differential scales, as in Conner, Norman, & Bell (2002). The PBC, SN, and Intention to
207 adopt a healthy diet were measured using three items adopted from Menozzi et al. (2015) and Conner
208 et al. (2002). The items related to attitude towards traditional eating (ATT-TE) were developed by
209 reviewing the existing literature on traditional foods (e.g.; Aprile et al., 2016; Fernández-Ferrín et al.,
210 2019; Pieniak et al., 2009). As shown in Table A2, the following items were selected to measure this
211 construct: *“My diet consists mostly of traditional food of my Country/Region of origin”*, *“I like*
212 *cooking traditional food of my Country/Region of origin”*, *“I always prefer the traditional food of my*
213 *Country/Region of origin compared to others”*, and *“When I travel, I miss eating the traditional food*
214 *of my Country/Region of origin”*.

215 One of the limitations when comparing TPB results across different countries is that the
216 perception/definition of “healthy eating” may differ between the study populations (Hansen &
217 Thomsen, 2018; Riebl et al., 2015). To avoid this potential source of bias, participants in each country
218 were given the following definition of a healthy diet before answering the questions in the
219 questionnaire: *“A healthy diet contains a variety of types of food, including plenty of fruit, vegetables*
220 *and starchy foods such as wholemeal bread and wholegrain cereals; some protein-rich foods such as*
221 *meat, fish, eggs and lentils; and some dairy foods”*. This statement was adapted from British Food
222 Standards Agency’s Eatwell Guide (Food Standards Agency, 2018). The same guidelines are also in
223 line with the concept of a healthy diet presented by many other national and international health
224 authorities, including the WHO (2020).

225

226 3.3 Data Analysis

227 The data analysis started with the evaluation of the constructs: internal reliability, discriminant
228 validity, and convergent validity of the constructs. The internal consistency (Cronbach’s alpha) of

229 all the scales (except for the PBC) exceeded the value of 0.7 for each country, which is the cut-off
230 recommended by Nunnally & Bernstein (1994). The Cronbach's alpha of the PBC construct (0.44)
231 was lower than the recommended value; therefore, we decided to exclude this factor from our model.

232 In line with the study's objectives, items were factor-analyzed using maximum likelihood
233 estimation and Varimax rotation. Table A3 shows the standardized factor loadings, which varied
234 between 0.50 and 0.90. Thus, the values were all above the threshold of 0.5 suggested in the literature
235 (Chin, 1998), with the only exception of the fourth item of the ATT construct (0.4). We then tested
236 the model with and without this item, and no significant differences were shown. Therefore,
237 considering that this item is often included in the TPB literature, we decided to retain it in the model.
238 Discriminant validity was examined using two techniques: the square root of the average variance
239 extracted (AVE) (Fornell & Larcker, 1981) and cross-loadings. First, AVE square roots for each
240 construct were all higher than the correlation between the construct and each other (Fornell & Larcker,
241 1981). These results suggested that we have satisfactory discriminant validity.

242 Finally, the convergent validity was ensured, due to the AVE values for each construct being
243 equal to or greater than 0.5, as stated in the literature (Fornell & Larcker, 1981). This indicates
244 satisfactory convergent validity of the measurements. These results demonstrated that the reliability
245 and validity of the measurements in this study are acceptable. Next, we estimated a structural equation
246 model (SEM) to simultaneously verify the hypothesized relationships, using STATA Statistical
247 Software version 15.0. Based on previous similar research (Hansen & Thomsen, 2018; Memon et al.,
248 2019), we included some demographic variables (i.e., gender, age, and educational level) as control
249 variables in the analysis, as they may have an influence on healthy dietary behavior. However, we
250 observed no significant difference between the results with and without the control variables. Thus,
251 the results of the present study are reported without control variables, for sake of simplicity.

252

253 4. Results

254

255 4.1. Descriptive Analysis

256 Table 1 presents the means and the Cronbach's alpha reliability coefficients for the constructs for the
257 pooled sample (all countries) and segmented samples (each country). Mean scores ranged from 1 to
258 5 with greater values related to more positive statements about the constructs and vice versa. The
259 results showed a general positive attitude and behavioral beliefs towards adopting a healthy diet, with
260 mean scores of 3.938 and 3.744, respectively. Overall, our sample indicated a moderately neutral
261 social pressure (mean of 2.848) and normative beliefs (mean of 2.866). Respondents also reported
262 moderately positive responses for both their intention of adopting a healthy diet (mean of 3.436) and
263 their attitude towards traditional eating (mean of 3.436). A correlation matrix was also computed to
264 examine the relationship between the latent construct of the TPB and the attitude towards traditional
265 eating (see Table A4 in the Appendix). Results show that all the constructs were correlated, but
266 correlations were significantly lower than 1 (95% confidence interval). Especially, the results show
267 that Behavioral Beliefs, Normative Beliefs, Subjective Norm, and Attitude were positively and
268 significantly correlated with the Behavioral Intention to adopt a healthy diet. This is not surprising
269 since these measures are considered to be the antecedents of behavior.

Table 1. Descriptive statistics of the constructs: mean scores and Cronbach’s alpha for each country and the total sample

Country	Attitude—ATT		Subjective Norm—SN		Behavioral Beliefs—BB		Normative Beliefs—NB		Control Beliefs—CB		Attitude traditional eating—ATT-TE		Behavioral Intention—BI	
	Mean	Alpha	Mean	Alpha	Mean	Alpha	Mean	Alpha	Mean	Alpha	Mean	Alpha	Mean	Alpha
Germany (n=473)	3.536	0.761	3.311	0.744	3.419	0.779	3.202	0.789	3.213	0.765	3.160	0.807	3.368	0.809
Italy (n=1,648)	3.824	0.705	2.620	0.927	3.699	0.873	2.688	0.840	2.978	0.709	3.577	0.741	3.413	0.872
Poland (n=310)	3.799	0.791	2.615	0.928	3.478	0.788	2.559	0.836	2.995	0.789	3.123	0.768	3.162	0.902
Spain (n=213)	3.910	0.731	2.385	0.941	3.589	0.821	2.268	0.893	3.224	0.731	3.646	0.835	3.567	0.878
Brazil (n=746)	4.473	0.730	1.848	0.926	4.394	0.831	2.011	0.793	2.960	0.837	3.735	0.735	3.484	0.899
China (n=363)	4.145	0.715	3.727	0.745	3.819	0.754	3.699	0.789	3.283	0.810	3.696	0.886	3.661	0.794
Israel (n=214)	3.728	0.765	2.902	0.802	3.766	0.761	2.819	0.792	3.701	0.718	3.493	0.836	3.087	0.877
Japan (n=473)	4.079	0.756	3.667	0.826	3.489	0.775	3.526	0.702	3.228	0.726	3.375	0.779	3.399	0.823
South Korea (n=447)	3.499	0.763	2.849	0.741	3.593	0.727	3.278	0.779	3.529	0.798	3.059	0.838	3.089	0.838
USA (n=1,041)	4.063	0.735	3.187	0.924	3.760	0.876	3.066	0.871	3.166	0.678	3.259	0.832	3.576	0.934
Total (n=5,928)	3.938	0.756	2.848	0.912	3.744	0.836	2.866	0.846	3.144	0.751	3.436	0.789	3.417	0.875

272 4.2. Predicting the Adoption of a Healthy Diet

273 Table 2 shows the results of the path analysis on the hypothesized structural equation model for the
274 pooled sample and also for each country. The goodness-of-fit test statistics of the model for the total
275 sample (all countries) indicated a good fit, in line with all threshold values accepted in the literature
276 (Hair, Black, Babin, & Anderson, 2009). As postulated by the TPB model, personal behavioral beliefs
277 about the likely outcomes of the behavior (BB) and the normative expectations of others (NB)
278 positively influence attitude and subjective norms, respectively. Considering that, as reported in the
279 data analysis section, we excluded the PBC construct in the model, hypothesis H1 was partially
280 confirmed. In the pooled sample, our model showed that ATT and SN related to the behavior of
281 adopting a healthy diet were all significantly correlated with the Attitude towards traditional eating:
282 the ATT-TE was positively linked to ATT ($\beta = 0.283$, $p < 0.001$) and negatively linked to SN ($\beta =$
283 -0.026 , $p < 0.01$). In addition, the CB was positively directly linked to ATT-TE ($\beta = 0.068$, $p <$
284 0.001). These results confirm H3. Finally, the results indicated that the ATT-TE positively and
285 significantly influenced the behavioral intention of adopting a healthy diet, supporting H4.

286 Table 3 shows the effects of decomposition of the ATT, SN, and CB indirect path on BI for
287 each country and the total sample. The results for the total sample provide support for H2. In specific,
288 ATT and SN were the main predictors of intention, with significant and positive coefficients ($\beta = 0.$
289 720 , p -value = 0.001; and $\beta = 0.214$, p -value = 0.001, respectively); whereas the CB–BI relationship
290 was slightly negative. Table 3 also shows how the indirect effect was mediated by the Attitude
291 towards traditional eating (ATT-TE) in the model. The results show that ATT-TE had a weaker, but
292 significantly positive mediating effect between attitude and behavioral intention ($\beta = 0.042$; p -
293 value = 0.001), and between control beliefs (CB) and behavioral intention ($\beta = 0.010$; p -value = 0.01).
294 In contrast, the indirect effect of SN on BI mediated by the Attitude towards traditional eating was
295 small and negative ($\beta = -0.004^{**}$; p -value = 0.01).

296 If we look at the results of the structural model and the effects of decomposition of the ATT,
297 SN, and CB indirect paths on BI between countries, the effect of the Attitude towards traditional
298 eating (ATT-TE) differed in magnitude between the countries investigated. This supports H5 which
299 stated that the relations between the constructs in the model differs among the included countries. For
300 instance, in Brazil and China, ATT-TE had a negative effect towards the BI to adopt a healthy diet (β
301 = -0.720 , $p < 0.001$; $\beta = -0.097$, $p < 0.05$, respectively); whereas, in Italy, Japan, Poland, Spain, and
302 the USA, the effect was positive. For some countries (i.e., Israel, South Korea, and Germany), we did
303 not observe any significant effects. The interpretation we can make is that the perception relationship
304 between traditional eating and health differs between countries and, thus, is likely culturally
305 dependent (Sproesser et al., 2022). We observe that EU countries, which have among them a more
306 common gastronomy culture (e.g., food consumption and preparation) compared to the other non-EU
307 countries, showed a similar pattern. On the other hand, if we look at the Asian countries in our study,
308 a different role of the ATT-TE emerged across these countries.

309

310 **Table 2.** The results of the structural model for each country and the total sample.

Path	Total	Germany	Italy	Poland	Spain	Brazil	China	Israel	Japan	South Korea	USA
BB → ATT	0.551***	0.634***	0.486***	0.564***	0.294**	0.445***	0.049	0.507**	0.309***	0.048	0.520***
NB → SN	0.847***	0.451***	0.869***	0.971***	0.605***	1.092***	0.091	1.030***	0.605***	0.213**	0.781***
CB → ATT-TE	0.068***	0.026	-0.048	0.160**	-0.376**	0.093**	0.044	-0.018	0.150	0.022	0.593***
ATT → ATT-TE	0.283***	0.033	0.247***	0.048	0.699***	-0.195**	0.270**	-0.002	0.126*	0.161**	0.147**
SN → ATT-TE	-0.026**	0.173**	0.017	0.205***	-0.111	-0.111***	-0.007	-0.019	0.285***	-0.073	0.167***
ATT-TE → BI	0.149***	0.106	0.305***	0.225**	0.306***	-0.720***	-0.097**	-0.155	0.336***	0.024	0.363***
χ^2	4120.14***	381.14***	1906.61***	532.64***	1192.97***	2294.42***	280.80**	488.61***	588.81***	254.94	1939.23***
RMSEA	0.052	0.036	0.065	0.063	0.135	0.108	0.022	0.070	0.056	0.013	0.083
CFI	0.944	0.958	0.918	0.926	0.736	0.835	0.984	0.897	0.920	0.995	0.898
SRMR	0.094	0.064	0.100	0.115	0.134	0.133	0.051	0.107	0.086	0.040	0.158

311 *Note.* Parameters are completely standardized. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.001$.

312

313 **Table 3.** Effects of decomposition of ATT, SN, and CB indirect paths on the Behavioral Intention for each country and the total sample

	Total	Germany	Italy	Poland	Spain	Brazil	China	Israel	Japan	South Korea	USA
<i>ATT</i>											
← Direct	0.678***	0.355***	1.063***	0.630***	1.112***	1.607***	-0.017	0.080	0.122**	0.013	0.880***
← Indirect (Mediated by ATT-TE)	0.042***	0.001	0.023**	0.003	-0.027	0.088**	-0.026	0.000	0.026	0.004	0.108
← Total Effect	0.720***	0.356***	1.087***	0.633***	1.085***	1.694***	-0.042	0.081	0.148**	0.018	0.891***
<i>SN</i>											
← Direct	0.218***	0.227***	0.125***	0.264***	0.141**	0.260***	0.035	0.358***	0.331***	0.073	0.322***
← Indirect (Mediated by ATT-TE)	-0.004**	0.007	0.001	0.018	0.004	0.052***	0.001	0.002	0.059***	-0.002	0.015**
← Total Effect	0.214***	0.234***	0.126***	0.282***	0.145**	0.311***	0.036	0.360***	0.390***	0.071	0.337***
<i>CB</i>											
← Direct	0.100***	-0.012	-0.127**	-0.308***	-0.278*	-0.100***	-0.022	0.206	-0.271**	0.082	-0.131**
← Indirect (Mediated by ATT-TE)	0.010**	0.001	-0.004	0.015	0.006	0.010**	-0.004	0.002	0.040	0.001	0.064**
← Total Effect	0.090***	-0.011	-0.131**	-0.294***	-0.273*	-0.090***	-0.026	0.208	-0.231**	0.083	-0.067

314 *Note:* * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

315 4. Discussion

316 The value of our contribution resides primarily in confirming the predictive validity of the TPB in the
317 field of dietary health (Biasini et al., 2021) and adding the construct of attitude toward traditional
318 eating to enhance understanding towards the adoption of healthy eating behavior and its relation to
319 traditional eating.

320 First, this study provided new insights on how the TPB constructs (i.e., attitude and subjective
321 norms) significantly predict the intention towards adopting a healthy diet. These findings are logical
322 and consistent with previous research, which has demonstrated a positive relationship between
323 attitudes and behavioral intention (Riebl et al., 2015). In addition, we also ascertained the mediating
324 effect of the attitude towards traditional eating, showing that when consumers hold a more positive
325 attitude toward traditional eating, their intention to adopt a healthy diet is strengthened. Interestingly,
326 on the other hand, the subjective norms to adopt a healthy diet were found to be negatively linked to
327 the attitude toward traditional eating. However, if we look at the country level, the results were very
328 heterogeneous. There were some countries (i.e., Poland, Japan, USA, and Germany) for which SN
329 had a significant and positive influence on traditional eating, whereas for other countries it was not
330 significant or negatively related (i.e., Brazil). This heterogeneity could be explained by the fact that,
331 in some cultures, when people recommend others to eat healthy, they likely do not refer to traditional
332 food. For example, in several regions of Brazil meat and other animal products are an essential
333 ingredient in many dishes (Monteiro & Cannon, 2012). Thus, for this culture, despite meat being a
334 traditional food it is also associated to an unhealthy diet considering that its excessive consumption
335 could cause the risk of developing cardiovascular diseases (Costa et al., 2021).

336 As suggested by previous studies regarding healthy food choices (Åström & Rise, 2001;
337 Biasini et al., 2021; Hsu et al., 2018; Scalco et al., 2017), our findings confirmed that the decision to
338 adopt a healthy diet is a rational process, wherein consumers take into account their individual attitude
339 as the most important predictor affecting their intention, followed by subjective norms. This suggests

340 that intention to adopt a healthy diet is influenced by reference groups. Moreover, consistent with the
341 TPB model, behavioral beliefs and normative beliefs regarding the adoption of a healthy diet were
342 positively related to attitudes and subjective norms, respectively. In particular, the normative pressure
343 of close family members (i.e., parents) and friends was found to be of less importance than that
344 provided by experts such as nutritionists. Moreover, given the strong relationship between attitude
345 and behavioral beliefs, interventions should be aimed at encouraging the most favorable beliefs that
346 contribute to the formation of a positive attitude towards a healthy diet. For instance, from a
347 communication point of view, marketers and policymakers could identify and communicate the
348 favorable physiological and psychological consequences that may derive from adopting a healthier
349 eating behavior, such as “live my old age in better conditions”, “have more self-esteem”, and “have
350 more self-satisfaction”. Therefore, authorities could use campaigns that promote the wellbeing and
351 healthiness of individuals by stressing the importance of mindful food consumption, leading to higher
352 awareness of physiological consequences (Hansen & Thomsen, 2018).

353 According to previous authors (e.g., Nosi, D’Agostino, Pagliuca, & Pratesi, 2014), individuals
354 may be more likely to perform a certain behavior when both their subjective norms and attitude are
355 positive. Thus, our findings demonstrate that the TPB model (without the PBC), is robust in
356 explaining the intention of individuals. As previously explained, we did not include the PBC measure
357 in the model, as the overall consistency did not fit the recommend value; however, it is expected that
358 the PBC consistently follows from readily accessible beliefs (Ajzen, 2016). Thus, we included control
359 beliefs (antecedents of the PBC) in the model, and they were shown to be negatively linked to the
360 intention to adopt a healthy diet. This could be explained due to high costs and little time being
361 perceived as barriers to the adoption of a healthy diet in the near future.

362 However, it is important to point out that the overall analysis exhibited substantial
363 heterogeneity across the countries. In fact, even though the effects of the measures on the intention
364 were generally found to be significant across the countries, a number of differences should be

365 mentioned. First, in Brazil, the attitude towards traditional eating was negatively linked to the
366 adoption of a healthy diet. This could be explained by the perception of traditional foods as being less
367 healthy by Brazilians. For example, Brazil is a country where beef has stronger symbolic
368 representation resulting in a high meat intake (Ribeiro & Corção, 2013). The negative factors related
369 to these eating habits (e.g., an increase in cholesterol level) could contribute to the perception that
370 traditional food is not healthy.

371 On the other hand, our results showed how the attitude toward traditional eating had a stronger
372 impact in southern European countries (i.e., Italy and Spain) than in a northern EU country like
373 Germany. This is in line with a study by Almlí et al., (2011) about perceptions of traditional food in
374 six European countries which shown how Spanish and the Italians characterized traditional foods by
375 a high nutritional value and healthiness. This could be explained because southern countries have a
376 varied and nutritional balanced traditional food heritage (Jordana, 2000). However, also for Poland,
377 the results show that the attitude toward traditional eating is related to the intention of adopting a
378 healthy diet. This result is line with the finding by Almlí et al., (2011) that showed how health was a
379 significant driver of the positive image of traditional food in Poland. Also among the Asian countries
380 (i.e., Japan, South Korea, and China), which are characterized by a long food history and widespread
381 availability of traditional products (Cang, 2018; Gabriel et al., 2018; Imada & Furumitsu, 2020), our
382 results showed that attitude towards traditional eating was positively linked with attitude to adopt a
383 healthy diet. This strict link between traditions and healthy diet is confirmed by a study from the
384 Japan Public Health Center (Kurotani et al., 2016) which shows how individuals with higher
385 adherence to the traditional Japanese foods have higher life expectancy.

386 Moreover, the magnitudes of the effects of attitude and SN on intention were strong in all the
387 countries, except for China. This could be due to the specific demographics of the sample (i.e., mostly
388 younger than 25 years and highly educated), which could suggest that this target demographic does
389 not perceive pressure from others to adopt a healthy diet.

390 The response heterogeneity between the studied countries could be due to the different
391 conceptualization and definition of traditional food that each country/culture holds (Galli, 2018;
392 Vanhonacker et al., 2013). Thus, how consumers interpret traditional eating influences the adoption
393 of a healthy diet including traditional food.

394 5. Policy and Practical Implications

395 The ability to effectively understand and predict eating-related behavior is crucial to a variety of
396 researchers and professionals in the area of healthy interventions. Research on consumer behaviors
397 is crucial for developing educational interventions necessary to transition towards healthier diets at
398 the individual and population levels.

399 From a policy point of view, in Europe and elsewhere, public measures aimed at encouraging
400 the adoption of healthy diets have been mainly focused on nutrient profiles of specific foods—that is,
401 in terms of their levels of fat, salt, and sugar (Capacci et al., 2012)—without taking into consideration
402 the role of tradition and eating patterns. Policy interventions have only recently highlighted the
403 relevance and interlinked roles of food culture, history, and lifestyle with the nutrition profiles of
404 products. For instance, many national and international public authorities are developing campaigns
405 to promote and enhance the Mediterranean dietary pattern, which has been recognized by UNESCO
406 as an intangible cultural heritage of humanity since 2010 (CIHEAM/FAO, 2015). Also in other parts
407 of the world like in Brazil, national public authorities (i.e., Ministry of Health) are supporting policies
408 to promote adequate and healthy food that value the traditional food culture (Costa et al., 2021).

409 Information campaigns targeted at promoting the increased consumption of healthy foods can
410 have an impact on attitudes and intentions (Capacci et al., 2012; Wongprawmas et al., 2021);
411 however, it is important to estimate whether this consumer interest will be translated into actual
412 behavior (Van Loo, Hoefkens, & Verbeke, 2017). Our findings suggest that countries aiming to
413 promote healthy diets should invest in policies to increase familiarity with and appreciation towards
414 traditional food that have higher nutritional quality or bio-functional characteristics by promoting

415 them as a healthy diet (García-Barrón et al., 2021). For instance, policy-makers should strengthen the
416 regional marketing of traditional products (Aprile et al., 2016). This becomes even more important in
417 countries (e.g., USA) where the recognition of traditional products is difficult, due to scarce legal
418 protection (Barham et al., 2011). In such situations, the challenge is to develop regulations to secure
419 the legal protection of well-recognized geographical products, in both domestic and international
420 markets. At the same time, other agricultural marketing programs should support the adoption of
421 specific labeling schemes, in order to help consumers to identify these products in the marketplace,
422 as already happens with PDO and PGI labels in the EU (Aprile et al., 2016). These interventions will
423 likely favor the proliferation of small- and medium-sized food enterprises with a high regional
424 economic impact and the potential to create new job opportunities, thus mitigating the risk of
425 abandoning rural regions (Cei, Stefani, & Defrancesco, 2021; Pieniak et al., 2009). In addition, in
426 order to further increase the potential market of traditional foods in the U.S. and elsewhere, there is a
427 need to invest in producer organizations, which could use collective marketing to draw consumers'
428 attention (Barham et al., 2011). As a result of such policy and market interest, traditional foods could
429 serve a number of goals related to rural economic development, mitigate environmental degradation,
430 and provide foods with a high standard of quality, including safety and traceability (e.g., product
431 specification).

432 From a managerial point of view, our results suggest several practical implications for food
433 system stakeholders. First, local food producers should strengthen the regional marketing of their
434 products (Aprile et al., 2016) as well as the healthy attributes associated, if any. Considering that the
435 perception of traditional foods as less healthy may cause a remarkable decrease in their consumption
436 in the near future (Guiné et al., 2021), companies should start considering how to innovate these
437 products to mitigate this risk. Even if tradition and innovation are often considered antonyms, the
438 current challenge for food companies is to improve the nutritional characteristics of food products to
439 meet the new consumer needs and demands, without compromising the culture, quality, and essence

440 of the product (Lipan et al., 2017). Product reformulation is recommended to reduce the intake of
441 potentially unhealthy ingredients and nutrients (e.g., salt or trans fats) or to increase the content of
442 positive (e.g., high dietary fiber in wholegrain pasta) (Capacci et al., 2012; Wongprawmas et al.,
443 2021). This is the case especially for those traditional products which are considered to be processed
444 foods.

445 6. Conclusions

446 Promoting a healthy diet without drastically changing traditional socio-cultural eating habits
447 represents a global challenge, involving the improvement of public health and local food production.

448 With a view to addressing a gap in the empirical literature, we examined the adoption of a
449 healthy eating pattern by applying the TPB model, including the attitude towards traditional food
450 behavior as a moderating variable. Our results confirmed the predictive and explanatory power of the
451 TPB, and indicated which concepts and beliefs are most associated with the adoption of a healthy
452 diet. This reinforces the value of using the TPB as a guide for designing intervention programs
453 involving recommendations for healthy dietary change, based on TPB factors such as personal
454 attitudes and social norms. Our findings also indicated that the attitude towards traditional eating is
455 an important mediating factor affecting the relationship between TPB measures to adopt a healthy
456 diet and the behavioral intention itself.

457 The insights from this study support the development of policy actions which integrate both
458 the health and traditional aspects of food. Future formulation of dietary guidelines should consider
459 the intrinsic values (e.g., culture, habits, and history) that each society ascribes to its own food.
460 Information campaigns should highlight the consequences of consumer dietary choices for their
461 future well-being (Hansen & Thomsen, 2018). Furthermore, the food industry has the responsibility
462 to conduct product reformulation, which could innovate traditional foods by adding healthier
463 attributes to meet current consumer demands.

464 The strengths of this study consist of both theoretical and empirical insights. First, this is the
465 first study to investigate the TPB measurements of adopting a healthy diet by including the
466 relationship with the attitude towards traditional eating. Second, so far most of the studies using the
467 TPB model to investigate healthy diets have been conducted using small samples and mainly in higher
468 income economies (Biasini et al., 2021). Thus, the use of a large global sample allows to draw
469 perspectives on a global scale, along with more country-specific differences, which provides a strong
470 contribution to the current state of the art.

471 Despite the abovementioned strengths, several limitations occurred, and future research
472 should provide additional insights into some of the following limitations. First of all, the convenience
473 sampling method for all of the countries (except for the U.S. sample) restricts the generalizability of
474 our results. In particular, it is important to notice how in some large countries like Brazil or China,
475 food eating habits can vary considerably within the country (Barcellos, Aguiar, Ferreira, & Vieira,
476 2009; Wang & Scrimgeour, 2021), especially among individuals living in urban and rural areas (Costa
477 et al., 2021). Moreover most of the data collection in these countries is limited to only few and big
478 cities (García-Barrón et al., 2021; Wang & Scrimgeour, 2021). Thus, future studies should consider
479 administering surveys both in large and small urban cities as well as rural areas, especially when
480 conducting studies in developing economies. Second, the results of our research were determined
481 according to a survey and hypothetical measures, without including the observation of actual
482 consumer behaviors, as this poses some difficulties (Scalco et al., 2017). Even if intention is the most
483 significant predictor of behavior in the TPB model (Riebl et al., 2015), further investigations should
484 include measures of actual consumer behaviors with respect to the adoption of a healthy diet; for
485 example, by using a food diary to record food intake or food purchase data. Finally, future studies
486 could explore preferences for traditional food across countries by pooling data from countries with
487 similar socio-economic indicators (e.g., developed vs. developing countries) and/or traditional food
488 markets.

489 **Declaration of Competing Interest**

490 The authors declare that they have no known competing financial interests or personal relationships
491 that could have appeared to influence the work reported in this paper.

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494 **References**

495

- 496 Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*,
497 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- 498 Ajzen, I. (2016). Consumer attitudes and behavior: the theory of planned behavior applied to food
499 consumption decisions. *Italian Review of Agricultural Economics*, 70(2 SE-Saggi e Ricerche).
500 <https://doi.org/10.13128/REA-18003>
- 501 Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behavior. In *Understanding*
502 *attitudes and predicting social behavior* (Paperback). Englewood Cliffs, N.J: Prentice-Hall.
- 503 Almlí, V. L., Verbeke, W., Vanhonacker, F., Næs, T., & Hersleth, M. (2011). General image and attribute
504 perceptions of traditional food in six European countries. *Food Quality and Preference*, 22(1), 129–
505 138. <https://doi.org/https://doi.org/10.1016/j.foodqual.2010.08.008>
- 506 Aprile, M. C., Caputo, V., & Nayga, R. M. (2016). Consumers' Preferences and Attitudes Toward Local
507 Food Products. *Journal of Food Products Marketing*, 22(1), 19–42.
508 <https://doi.org/10.1080/10454446.2014.949990>
- 509 Åström, A. N., & Rise, J. (2001). Young adults' intention to eat healthy food: Extending the theory of
510 planned behaviour. *Psychology & Health*, 16(2), 223–237.
511 <https://doi.org/10.1080/08870440108405501>
- 512 Barcellos, M. D. de, Aguiar, L. K., Ferreira, G. C., & Vieira, L. M. (2009). Willingness to try innovative
513 food products: a comparison between British and Brazilian consumers. *BAR - Brazilian Administration*
514 *Review*, 6, 50–61. Retrieved from [http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1807-](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1807-76922009000100005&nrm=iso)
515 [76922009000100005&nrm=iso](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1807-76922009000100005&nrm=iso)
- 516 Barham, E., Bingen, J., & Hinrichs, C. C. (2011). Geographical indications in the USA. In *Labels of Origin*
517 *for Food: Local Development, Global Recognition* (pp. 122–137). Retrieved from
518 [https://www.scopus.com/inward/record.uri?eid=2-s2.0-](https://www.scopus.com/inward/record.uri?eid=2-s2.0-84890154647&partnerID=40&md5=6bcace64c098304ea77e1822e28aa1b8)
519 [84890154647&partnerID=40&md5=6bcace64c098304ea77e1822e28aa1b8](https://www.scopus.com/inward/record.uri?eid=2-s2.0-84890154647&partnerID=40&md5=6bcace64c098304ea77e1822e28aa1b8)
- 520 Biasini, B., Rosi, A., Giopp, F., Turgut, R., Scazzina, F., & Menozzi, D. (2021). Understanding, promoting
521 and predicting sustainable diets: A systematic review. *Trends in Food Science & Technology*, 111,
522 191–207. <https://doi.org/https://doi.org/10.1016/j.tifs.2021.02.062>
- 523 Cang, V. (2018). Japan's Washoku as Intangible Heritage: The Role of National Food Traditions in
524 UNESCO's Cultural Heritage Scheme. *International Journal of Cultural Property*, 25(4), 491–513.
525 <https://doi.org/DOI:10.1017/S0940739118000267>
- 526 Capacci, S., Mazzocchi, M., Shankar, B., Macias, J. B., Verbeke, W., Pérez-Cueto, F. J. A., ... Traill, W. B.
527 (2012). Policies to promote healthy eating in Europe: a structured review of policies and their
528 effectiveness. *Nutrition Reviews*, 70(3), 188–200. <https://doi.org/10.1111/j.1753-4887.2011.00442.x>
- 529 Caputo, V., Sacchi, G., & Lagoudakis, A. (2018). Traditional Food Products and Consumer Choices: A
530 Review. In A. Cavicchi & C. B. T.-C. S. in the T. F. S. Santini (Eds.), *Case Studies in the Traditional*
531 *Food Sector* (pp. 47–87). <https://doi.org/https://doi.org/10.1016/B978-0-08-101007-5.00004-X>
- 532 Carfora, V., Caso, D., & Conner, M. (2016). The role of self-identity in predicting fruit and vegetable intake.
533 *Appetite*, 106, 23–29. <https://doi.org/https://doi.org/10.1016/j.appet.2015.12.020>
- 534 Cei, L., Stefani, G., & Defrancesco, E. (2021). How do local factors shape the regional adoption of
535 geographical indications in Europe? Evidences from France, Italy and Spain. *Food Policy*, 105,
536 102170. <https://doi.org/https://doi.org/10.1016/j.foodpol.2021.102170>

- 537 Chin, W. W. (1998). The Partial Least Squares Approach to Structural Equation Modeling. In *Quantitative*
538 *methodology series* (Marcoulide, pp. 295–336). <https://doi.org/10.1016/j.aap.2008.12.010>
- 539 CIHEAM/FAO. (2015). *Mediterranean food consumption patterns: diet, environment, society, economy and*
540 *health. A White Paper Priority 5 of Feeding Knowledge Programme*. Retrieved from
541 <http://www.fao.org/3/i4358e/i4358e.pdf>
- 542 Conner, M., Norman, P., & Bell, R. (2002). The theory of planned behavior and healthy eating. *Health*
543 *Psychology : Official Journal of the Division of Health Psychology, American Psychological*
544 *Association, 21*(2), 194–201.
- 545 Contini, C., Boncinelli, F., Marone, E., Scozzafava, G., & Casini, L. (2020). Drivers of plant-based
546 convenience foods consumption: Results of a multicomponent extension of the theory of planned
547 behaviour. *Food Quality and Preference, 84*, 103931.
548 <https://doi.org/https://doi.org/10.1016/j.foodqual.2020.103931>
- 549 Costa, D. V. de P., Lopes, M. S., Mendonça, R. de D., Malta, D. C., Freitas, P. P. de, & Lopes, A. C. S.
550 (2021). Food consumption differences in Brazilian urban and rural areas: the National Health Survey.
551 *Ciencia & saude coletiva, 26*(suppl 2), 3805–3813. [https://doi.org/10.1590/1413-](https://doi.org/10.1590/1413-81232021269.2.26752019)
552 [81232021269.2.26752019](https://doi.org/10.1590/1413-81232021269.2.26752019)
- 553 Deaconu, A., Sherwood, S., Paredes, M., Berti, P., López, P., Cole, D., ... Ekomer. (2021). Promoting
554 traditional foods for human and environmental health: lessons from agroecology and Indigenous
555 communities in Ecuador. *BMC Nutrition, 7*(1), 1. <https://doi.org/10.1186/s40795-020-00395-y>
- 556 European Union. *REGULATION (EU) No 1151/2012 of the European Parliament and of the Council of 21*
557 *November 2012 on quality schemes for agricultural products and foodstuffs.* , (2012).
- 558 Fernández-Ferrín, P., Bande, B., Galán-Ladero, M. M., Martín-Consuegra, D., Díaz, E., & Castro-González,
559 S. (2019). Geographical indication food products and ethnocentric tendencies: The importance of
560 proximity, tradition, and ethnicity. *Journal of Cleaner Production, 241*, 118210.
561 <https://doi.org/https://doi.org/10.1016/j.jclepro.2019.118210>
- 562 Fishbein, M., & Ajzen, I. (2011). Predicting and changing behavior: The reasoned action approach. In
563 *Predicting and Changing Behavior: The Reasoned Action Approach*.
564 <https://doi.org/10.4324/9780203838020>
- 565 Food Standards Agency. (2018). Healthy eating for adults | nidirect. Retrieved May 4, 2021, from
566 <https://www.nidirect.gov.uk/articles/healthy-eating-adults>
- 567 Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables
568 and Measurement Error. *Journal of Marketing Research, 18*(1), 39–50.
- 569 Gabriel, A. S., Ninomiya, K., & Uneyama, H. (2018). The Role of the Japanese Traditional Diet in Healthy
570 and Sustainable Dietary Patterns around the World. *Nutrients, 10*(2), 173.
571 <https://doi.org/10.3390/nu10020173>
- 572 Galli, F. (2018). Chapter 1 - Traditional Food: Definitions and Nuances. In A. Cavicchi & C. B. T.-C. S. in
573 the T. F. S. Santini (Eds.), *Woodhead Publishing Series in Food Science, Technology and Nutrition* (pp.
574 3–24). <https://doi.org/https://doi.org/10.1016/B978-0-08-101007-5.00002-6>
- 575 García-Barrón, S. E., Leyva-Trinidad, D. A., Carmona-Escutia, R. P., Romero-Medina, A., & Villanueva-
576 Rodríguez, S. J. (2021). Evaluation of traditional foods from a consumer's perspective: a review of
577 methods and highlights. *British Food Journal, 123*(12), 4451–4465. [https://doi.org/10.1108/BFJ-12-](https://doi.org/10.1108/BFJ-12-2020-1090)
578 [2020-1090](https://doi.org/10.1108/BFJ-12-2020-1090)
- 579 Guiné, R. P. F., Florença, S. G., Barroca, M. J., & Anjos, O. (2021). The duality of innovation and food
580 development versus purely traditional foods. *Trends in Food Science & Technology, 109*, 16–24.
581 <https://doi.org/https://doi.org/10.1016/j.tifs.2021.01.010>
- 582 Hair, J. J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2009). *Multivariate Data Analysis* (7th Editio).
583 Prentice Hall, Upper Saddle River,.
- 584 Hansen, T., & Thomsen, T. U. (2018). The influence of consumers' interest in healthy eating, definitions of
585 healthy eating, and personal values on perceived dietary quality. *Food Policy, 80*, 55–67.
586 <https://doi.org/https://doi.org/10.1016/j.foodpol.2018.09.002>
- 587 Hsu, F. C., Robinson, R. N. S., & Scott, N. (2018). Traditional food consumption behaviour: the case of
588 Taiwan. *Tourism Recreation Research, 43*(4), 456–469.
589 <https://doi.org/10.1080/02508281.2018.1475879>
- 590 Imada, S., & Furumitsu, I. (2020). Traditional and Modern Eating in Japan. In H. L. Meiselman (Ed.),
591 *Handbook of Eating and Drinking: Interdisciplinary Perspectives* (pp. 1343–1366).
592 https://doi.org/10.1007/978-3-030-14504-0_131

- 593 Jordana, J. (2000). Traditional foods: challenges facing the European food industry. *Food Research*
594 *International*, 33(3), 147–152. [https://doi.org/https://doi.org/10.1016/S0963-9969\(00\)00028-4](https://doi.org/https://doi.org/10.1016/S0963-9969(00)00028-4)
- 595 Kurotani, K., Akter, S., Kashino, I., Goto, A., Mizoue, T., Noda, M., ... Tsugane, S. (2016). Quality of diet
596 and mortality among Japanese men and women: Japan Public Health Center based prospective study.
597 *BMJ*, 352, i1209. <https://doi.org/10.1136/bmj.i1209>
- 598 Lipan, L., Sánchez-Rodríguez, L., Cano-Lamadrid, M., Collado-González, J., Noguera-Artiaga, L., Sendra,
599 E., & Carbonell-Barrachina, A. A. (2017). 8. Modernisation of traditional food processes and products.
600 In *Consumer trends and new product opportunities in the food sector* (pp. 113-133 SE – 8).
601 https://doi.org/doi:10.3920/978-90-8686-852-0_8
- 602 Mancini, M. C., Arfini, F., Veneziani, M., & Thévenod-Mottet, E. (2017). Geographical Indications and
603 Transatlantic Trade Negotiations: Different US and EU Perspectives. *EuroChoices*, v. 16(2), 34-40–
604 2017 v.16 no.2. <https://doi.org/10.1111/1746-692X.12131>
- 605 McDermott, M. S., Oliver, M., Svenson, A., Simnadis, T., Beck, E. J., Coltman, T., ... Sharma, R. (2015).
606 The theory of planned behaviour and discrete food choices: a systematic review and meta-analysis.
607 *International Journal of Behavioral Nutrition and Physical Activity*, 12(1), 162.
608 <https://doi.org/10.1186/s12966-015-0324-z>
- 609 McEachan, R. R. C., Conner, M., Taylor, N. J., & Lawton, R. J. (2011). Prospective prediction of health-
610 related behaviours with the Theory of Planned Behaviour: a meta-analysis. *Health Psychology Review*,
611 5(2), 97–144. <https://doi.org/10.1080/17437199.2010.521684>
- 612 Memon, M. A., Mirza, M. Z., Lim, B., Umrani, W. A., Hassan, M. A., Cham, T. H., & Shahzad, K. (2019).
613 When in Rome, do as the Romans do. *British Food Journal*, 122(6), 1953–1967.
614 <https://doi.org/10.1108/BFJ-09-2018-0636>
- 615 Menozzi, D., Sogari, G., & Mora, C. (2015). Explaining vegetable consumption among young adults: An
616 application of the theory of planned behaviour. *Nutrients*, 7(9), 7633–7650.
617 <https://doi.org/10.3390/nu7095357>
- 618 Menozzi, D., Sogari, G., & Mora, C. (2017). Understanding and modelling vegetables consumption among
619 young adults. *LWT - Food Science and Technology*, 85, 1–7. <https://doi.org/10.1016/j.lwt.2017.02.002>
- 620 Monteiro, C. A., & Cannon, G. (2012). The Impact of Transnational “Big Food” Companies on the South: A
621 View from Brazil. *PLOS Medicine*, 9(7), e1001252. Retrieved from
622 <https://doi.org/10.1371/journal.pmed.1001252>
- 623 Nosi, C., D’Agostino, A., Pagliuca, M. M., & Pratesi, C. A. (2014). Saving for old age: Longevity annuity
624 buying intention of Italian young adults. *Journal of Behavioral and Experimental Economics*, 51, 85–
625 98. <https://doi.org/https://doi.org/10.1016/j.socec.2014.05.001>
- 626 Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory*. New York: McGraw-Hill.
- 627 Pieniak, Z., Verbeke, W., Vanhonacker, F., Guerrero, L., & Hersleth, M. (2009). Association between
628 traditional food consumption and motives for food choice in six European countries. *Appetite*, 53(1),
629 101–108. <https://doi.org/https://doi.org/10.1016/j.appet.2009.05.019>
- 630 Ribeiro, C. da S. G., & Corção, M. (2013). The Consumption of Meat In Brazil: Between Socio-Cultural and
631 Nutritional Values. *DEMETERA: Alimentação, Nutrição & Saúde*, 8(3).
- 632 Riebl, S. K., Estabrooks, P. A., Dunsmore, J. C., Savla, J., Frisard, M. I., Dietrich, A. M., ... Davy, B. M.
633 (2015). A systematic literature review and meta-analysis: The Theory of Planned Behavior’s
634 application to understand and predict nutrition-related behaviors in youth. *Eating Behaviors*, 18, 160–
635 178. <https://doi.org/10.1016/j.eatbeh.2015.05.016>
- 636 Scalco, A., Noventa, S., Sartori, R., & Ceschi, A. (2017). Predicting organic food consumption: A meta-
637 analytic structural equation model based on the theory of planned behavior. *Appetite*, 112, 235–248.
638 <https://doi.org/https://doi.org/10.1016/j.appet.2017.02.007>
- 639 Sproesser, G., Ruby, M. B., Arbit, N., Akotia, C. S., Alvarenga, M. dos S., Bhangar, R., ... Renner, B.
640 (2022). Similar or different? Comparing food cultures with regard to traditional and modern eating
641 across ten countries. *Food Research International*, 157, 111106.
642 <https://doi.org/https://doi.org/10.1016/j.foodres.2022.111106>
- 643 Trichopoulou, A., Soukara, S., & Vasilopoulou, E. (2007). Traditional foods: a science and society
644 perspective. *Trends in Food Science & Technology*, 18(8), 420–427.
645 <https://doi.org/https://doi.org/10.1016/j.tifs.2007.03.007>
- 646 Van Loo, E. J., Hoefkens, C., & Verbeke, W. (2017). Healthy, sustainable and plant-based eating: Perceived
647 (mis)match and involvement-based consumer segments as targets for future policy. *Food Policy*, 69,
648 46–57. <https://doi.org/10.1016/j.foodpol.2017.03.001>

- 649 Vanhonacker, F., Kühne, B., Gellynck, X., Guerrero, L., Hersleth, M., & Verbeke, W. (2013). Innovations in
650 traditional foods: Impact on perceived traditional character and consumer acceptance. *Food Research*
651 *International*, 54(2), 1828–1835. <https://doi.org/https://doi.org/10.1016/j.foodres.2013.10.027>
- 652 Wang, O., & Scrimgeour, F. (2021). Willingness to adopt a more plant-based diet in China and New
653 Zealand: Applying the theories of planned behaviour, meat attachment and food choice motives. *Food*
654 *Quality and Preference*, 93, 104294. <https://doi.org/https://doi.org/10.1016/j.foodqual.2021.104294>
- 655 WHO. (2020). Healthy diet. Retrieved September 7, 2020, from FACT SHEET N°394 website:
656 <https://www.who.int/news-room/fact-sheets/detail/healthy-diet>
- 657 Willett, W., Rockström, J., Loken, B., Springmann, M., Lang, T., Vermeulen, S., ... Murray, C. J. L. (2019).
658 Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food
659 systems. *The Lancet*, 393(10170), 447–492. [https://doi.org/10.1016/S0140-6736\(18\)31788-4](https://doi.org/10.1016/S0140-6736(18)31788-4)
- 660 Wilson, A. E., O’Connor, D. B., Lawton, R., Hill, P. L., & Roberts, B. W. (2016). Conscientiousness and
661 fruit and vegetable consumption: exploring behavioural intention as a mediator. *Psychology, Health &*
662 *Medicine*, 21(4), 469–475. <https://doi.org/10.1080/13548506.2015.1093644>
- 663 Wongprawmas, R., Sogari, G., Menozzi, D., & Mora, C. (2022). Strategies to Promote Healthy Eating
664 Among University Students: A Qualitative Study Using the Nominal Group Technique. *Frontiers in*
665 *Nutrition*, 9. <https://doi.org/10.3389/fnut.2022.821016>
- 666 Wongprawmas, R., Sogari, G., Menozzi, D., Pellegrini, N., Lefebvre, M., Gómez, M. I., & Mora, C. (2021).
667 Determinants of US University Students’ Willingness to Include Whole Grain Pasta in Their Diet.
668 *International Journal of Environmental Research and Public Health*, 18(6).
669 <https://doi.org/10.3390/ijerph18063173>
- 670 Woods, T., & Thilmany, D. (2018). Engaging Consumers in the Dynamic Local Foods Marketplace.
671 *Choices*, Quarter 3. Retrieved from [http://www.choicesmagazine.org/choices-magazine/theme-](http://www.choicesmagazine.org/choices-magazine/theme-articles/engaging-consumers-in-the-dynamic-local-foods-marketplace/engaging-consumers-in-the-dynamic-local-foods-marketplace%0A)
672 [articles/engaging-consumers-in-the-dynamic-local-foods-marketplace/engaging-consumers-in-the-](http://www.choicesmagazine.org/choices-magazine/theme-articles/engaging-consumers-in-the-dynamic-local-foods-marketplace/engaging-consumers-in-the-dynamic-local-foods-marketplace%0A)
673 [dynamic-local-foods-marketplace%0A](http://www.choicesmagazine.org/choices-magazine/theme-articles/engaging-consumers-in-the-dynamic-local-foods-marketplace/engaging-consumers-in-the-dynamic-local-foods-marketplace%0A)
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679 **Appendix**

680 Table A1. Socio-demographic (%) of the sample

	Brazil (n=746)	China (n=363)	Germany (n=473)	Israel (n=214)	Italy (n=1,648)	Japan (n=473)	South Korea (n=447)	Poland (n=310)	Spain (n=213)	USA (n=1,041)	Total (n=5,928)
Age											
18-24y	20.6%	73.6%	41.6%	63.6%	26.3%	77.0%	41.4%	29.4%	42.3%	9.7%	34.0%
25-34y	35.8%	25.3%	49.9%	36.0%	32.1%	21.1%	43.6%	26.1%	19.7%	15.6%	30.0%
35-44y	24.3%	1.1%	7.0%	0.5%	12.9%	1.9%	5.1%	21.9%	3.8%	20.0%	12.6%
45-54y	11.3%	0.0%	1.1%	0.0%	15.4%	0.0%	4.3%	14.2%	32.9%	19.3%	11.4%
55-65y	4.8%	0.0%	0.2%	0.0%	10.1%	0.0%	2.9%	7.7%	1.4%	15.9%	6.9%
Over 65y	3.2%	0.0%	0.2%	0.0%	3.3%	0.0%	2.7%	0.6%	0.0%	19.6%	5.0%
Gender											
Male	31.2%	42.1%	46.9%	22.4%	38.3%	59.6%	51.7%	30.4%	25.8%	47.1%	41.1%
Female	68.8%	57.9%	53.1%	77.6%	61.7%	40.4%	48.3%	69.6%	74.2%	52.9%	58.9%
Education											
Primary Education	0.1%	0.0%	0.2%	0.0%	1.6%	0.6%	0.0%	1.3%	0.0%	0.8%	0.7%
Middle School	12.2%	2.8%	1.3%	0.5%	5.5%	0.6%	0.0%	1.9%	0.0%	0.6%	3.6%
Secondary Education	53.9%	15.4%	23.0%	51.4%	41.3%	34.0%	55.3%	23.2%	38.0%	29.1%	37.5%
Higher Education	33.8%	81.8%	75.5%	48.1%	51.6%	64.7%	44.7%	73.5%	62.0%	69.5%	58.2%
Income											
Low	12.6%	9.1%	11.2%	24.2%	9.6%	14.6%	0.0%	5.5%	8.0%	9.1%	9.9%

Low-Medium	35.3%	11.0%	15.6%	13.3%	19.4%	8.5%	22.1%	15.3%	8.5%	9.3%	17.3%
Medium	26.7%	54.5%	35.9%	22.7%	42.4%	24.8%	48.1%	45.5%	50.0%	21.8%	35.8%
Medium-high	14.9%	10.2%	25.8%	29.4%	12.5%	11.7%	26.4%	15.6%	15.1%	20.8%	17.0%
High	9.4%	5.0%	5.3%	4.3%	2.4%	5.1%	3.4%	5.2%	1.9%	24.7%	8.1%
I do not want to respond	1.2%	10.2%	6.1%	6.2%	13.8%	35.2%	0.0%	13.0%	16.5%	14.2%	11.9%

681 Note: 6 missing values for Gender and 14 missing values for income

682 **Table A2. Items**

Construct Items	Mean (s.d.)	Alpha
Attitude—ATT	3.938 (0.780)	0.756
<i>Adopting a healthy diet in the coming three months will be</i>		
ATT1. Harmful–Beneficial	4.262 (0.969)	
ATT2. Foolish–Wise	4.229 (0.986)	
ATT3. Unnecessary–Essential	3.886 (1.053)	
ATT4. Difficult–Easy	3.377 (1.090)	
Subjective Norm—SN	2.848 (1.178)	0.912
SN1. Most people who are important to me think that I should adopt a healthy diet in the coming three months.	2.922 (1.287)	
SN2. Most people who influence my decisions think that I should adopt a healthy diet in the coming three months.	2.826 (1.269)	
SN3. It is expected that I should adopt a healthy diet in the coming three months.	2.796 (1.277)	
Behavioral Beliefs—BB	3.744 (0.878)	0.836
BB1. If in the coming three months I will adopt a healthy diet, I will live my old age in better conditions.	3.644 (1.087)	
BB2. If in the coming three months I will adopt a healthy diet, I will have made a long-term investment for myself.	3.848 (1.017)	
BB3. If in the coming three months I will adopt a healthy diet, I will have more self-esteem.	3.633 (1.121)	
BB4. If in the coming three months I will adopt a healthy diet, I will have more self-satisfaction.	3.853 (1.064)	
Normative Beliefs—NB	2.866 (1.148)	0.846
NB1. My parents think I should adopt a healthy diet in the coming three months.	2.865 (1.324)	
NB2. My friends think I should adopt a healthy diet in the coming three months.	2.676 (1.267)	
NB3. Nutritionists think I should adopt a healthy diet in the coming three months.	3.058 (1.349)	
Control Beliefs—CB	3.144 (0.946)	0.751
CB1. The little advertising from food industry and/or supermarkets does not favor the adoption of a healthy diet in the coming three months.	3.158 (1.139)	
CB2. The high costs stop me to adopt a healthy diet in the coming three months.	3.184 (1.168)	
CB3. The little time stops me to adopt a healthy diet in the coming three months.	3.089 (1.167)	
Attitude towards traditional eating—ATT-TE	3.436 (0.905)	0.789
ATT-TE1. My diet consists mostly of traditional food of my Country/Region of origin.	3.570 (1.120)	
ATT-TE2. I like cooking traditional food of my Country/Region of origin.	3.549 (1.127)	
ATT-TE3. I always prefer the traditional food of my Country/Region of origin compared to others.	3.436 (1.119)	
ATT-TE4. When I travel I miss eating the traditional food of my Country/Region of origin.	3.188 (1.254)	
Behavioral Intention—BI	3.417 (1.010)	0.875
BI1. I intend to adopt a healthy diet in the coming three months.	3.518 (1.100)	
BI2. I will try in anyway to adopt a healthy diet in the coming three months.	3.528 (1.099)	
BI3. For sure, I will adopt a healthy diet in the coming three months.	3.206 (1.188)	

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685 **Table A3.** Assessment of internal consistency reliability and convergent validity, for the total sample

Latent construct	Items	Loadings	AVE
Behavioral Intention	BI1 - I intend to adopt a healthy diet in the coming three months	0.90	0.707
	BI2 - I will try in anyway to adopt a healthy diet in the coming three months	0.81	
	BI3 - For sure, I will adopt a healthy diet in the coming three months	0.81	
Behavioral Beliefs	BB1- If in the coming three months I will adopt a healthy diet, I will live my old age in better conditions	0.64	0.518
	BB2 - If in the coming three months I will adopt a healthy diet, I will have made a long-term investment for myself	0.70	
	BB3 - If in the coming three months I will adopt a healthy diet, I will have more self esteem	0.75	
	BB4 - If in the coming three months I will adopt a healthy diet, I will have more self-satisfaction	0.78	
Normative Beliefs	NB1 - My parents think I should adopt a healthy diet in the coming three months	0.81	0.652
	NB2 - My friends think I should adopt a healthy diet in the coming three months	0.85	
	NB3 - Nutritionists think I should adopt a healthy diet in the coming three months	0.76	
Attitude	ATT1 - Harmful-Beneficial	0.70	0.457
	ATT2 – Foolish-Wise	0.76	
	ATT3 – Unnecessary-Essential	0.79	
	ATT4 – Difficult-Easy	0.37	
Subjective Norm	SN1 - Most people who are important to me think that I should adopt a healthy diet in the coming three months	0.90	0.782
	SN2 - Most people who influence my decisions think that I should adopt a healthy diet in the coming three months	0.92	
	SN3 - It is expected that I should adopt a healthy diet in the coming three months	0.83	
Control Beliefs	CB1- The little advertising from food industry and/or supermarkets does not favor the adoption of a healthy diet in the coming three months	0.61	0.498
	CB2 - The high costs stop me to adopt a healthy diet in the coming three months	0.79	

CB3 - The little time stops me to adopt a healthy diet in the coming three months 0.74 686
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Attitude towards traditional eating	ATT-TE1- My diet consists mostly of traditional food of my Country/Region of origin	0.74	0.46	688
	ATT-TE2 - I like cooking traditional food of my Country/Region of origin	0.80		689
	ATT-TE3 - I always prefer the traditional food of my Country/Region of origin compared to others	0.73		690
	ATT-TE4 - When I travel I miss eating the traditional food of my Country/Region of origin	0.46		691
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Table A4. Correlations (coefficients) between latent constructs.

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
[1] Behavioral Intention (BI)	1.000						
[2] Attitude Towards Traditional Eating (ATT-TE)	0.093	1.000					
[3] Behavioral Beliefs (BB)	0.381	0.117	1.000				
[4] Normative Beliefs (NB)	0.208	0.036	0.131	1.000			
[5] Attitude (ATT)	0.362	0.162	0.422	0.066	1.000		
[6] Subjective Norm (SN)	0.275	0.041	0.110	0.699	0.100	1.000	
[7] Control Beliefs (CB)	0.026	0.078	0.080	0.208	0.027	0.199	1.000

n = 5928. Correlation coefficients greater than 0.026 in absolute value are statistically significant at the 95% level.

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