Motives for luxury seafood consumption in first-tier cities in China

Citation

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Highlights:

Consumer behavior toward luxury seafood in China.

A two-dimension construct for choice motives of luxury seafood.

Two consumer segments at different choice motive dimensions.

Important choice motivation dimensions on luxury seafood consumption.

Frequently consumed luxury seafood species.

1 **Motives for luxury seafood consumption in first-tier cities in China**

2 **Abstract**

3 This study explored Chinese consumers' choice motives, motive dimensions, segmentation,

4 and species preferences on luxury seafood consumption. A web-based survey was administered

5 to 967 luxury seafood eaters from three cities: Beijing, Shenzhen, and Shanghai. The data were

6 analysed by descriptive analysis, principal component analysis (PCA), cluster analysis, and

7 linear regression analysis. A two-dimensional construct was obtained for Chinese consumers'

8 choice motives for luxury seafood: food value and symbolic value. The most important specific

9 motives attached to these two dimensions included umami, delicious, fresh, like to eat, show

10 status, face consciousness, high quality life, and networking. Luxury seafood consumption by

11 Chinese consumers was more significantly influenced by the symbolic value motivation

12 dimension than the food value dimension. Two consumer segments were found: food value

13 seeker (42.4%) and dual value seeker (57.6%). Lobster and salmon were the most common

14 luxury seafood species consumed in China.

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1. Introduction

1.1 Research background, knowledge gaps, and objectives

China, the largest aquatic product market in the world, has become a major export destination for global luxury seafood products, e.g. lobster, sea cucumber, and shark fin (Fabinyi, 2011; Fabinyi, Pido, Harani, Caceres, Uyami-Bitara, De las Alas, & Ponce de Leon, 2012; Wang & Somogyi, 2018; Wang, Somogyi, & Ablett, 2018; Wang & Somogyi, 2019). This is due to its large population base, the rise of middle-class consumers, and a tradition of luxury seafood consumption with an emphasis on the social aspects such as showing status and networking with others (Fabinyi, 2011; Wang et al., 2018). Such demand has brought profit growth to global luxury seafood producers as well as threats to the sustainability of global luxury seafood resources, especially for wild-caught luxury seafood (Fabinyi, 2011; Fabinyi & Liu, 2014a; Purcell, 2014; Wang & Somogyi, 2019). As such, understanding the Chinese market, in particular its consumer behaviour for luxury seafood, is vital for global seafood producers, marketers, and policymakers in order to create marketing strategies and promotion policies that balance their growth in profits and the sustainable development of their luxury seafood resources.

There is no definition in the literature of the concept of luxury seafood. Scholars indicate that use of the term 'luxury' for goods or brands is ambiguous and often associated with high prices, a lifestyle of a privileged elite or being more comfortable, enjoyable and fulfilling, enhancing positive feelings, a vehicle for displaying wealth and self-expression, uniqueness, and excellent quality and prestige (Brun & Castelli, 2013). Luxury goods are consumed mainly depending on a distinctive mixture of symbolically social and individual values, rather than their intrinsic attributes (Brun & Castelli, 2013; Vickers & Renand, 2003; Williams, Atwal, & Bryson, 2018). In that perspective, luxury seafood should also have a similar definition and include seafood species with a high price and excellent quality, while

51   enhancing positive feelings, and embracing some symbolically social and individual values

52   perceived by consumers.

53   There is also no study to systematically summarise which specific species should

54   belong to luxury seafood. Some seafood species are selected as research objects for luxury

55   seafood studies using academic, business, or cultural perspectives by researchers themselves

56   including lobster, salmon, shark fin, sea cucumber, and live reef food fish (Fabinyi, 2011;

57   Fabinyi & Liu, 2014a, b, c; Fabinyi & Liu, 2016; Purcell, 2014; Wang et al., 2018). There is

58   still a lack of empirical understanding of the species classified as luxury seafood by consumers,

59   and their species preferences for luxury seafood consumption.

60   Seafood consumer behaviour has been widely studied by numerous scholars (e.g.

61   Myrland, Trondsen, Johnston, & Lund, 2000; Nguyen, Haider, Solgaard, Ravn-Jonsen, & Roth,

62   2015; Trondsen, Braaten, Lund, & Eggen, 2004). In particular, some studies have engaged in

63   exploring seafood consumer behaviour in China due to its differing consumption patterns and

64   habits from Western countries (Wang & Somogyi, 2018). Wang and Somogyi (2018)

65   systematically examined Chinese consumers' product perceptions, category preferences,

66   segmentation, and the influences on their quality perceptions, attitudes, and consumption

67   toward shellfish. Furthermore, Wang and Somogyi (2019) explored the effects that

68   psychological factors, category preferences, and segmentation have on Chinese consumers'

69   purchase intentions toward sustainable shellfish. Fabinyi, Liu, Song, and Li (2016) examined

70   Chinese consumers' category preferences, product form preferences, choice motives, and

71   environmental and sustainability awareness toward specific aquatic products including seafood

72   and fresh-water aquatic products. Xu, Zeng, Fong, Lone, and Liu (2012) explored Chinese

73   consumers' readiness to pay for green and eco-labelled seafood. Li and Wu (2015) and Lu, Xu,

74   and Yuan (2013) focused on the influences that product attributes and sociodemographic

75   characteristics have on Chinese consumers' shrimp consumption. These studies have typically

76 examined seafood as a general food type or a broad set of seafood species with both luxury and

77 normal seafood species.

78   There are a few studies related to luxury seafood consumption that all focus on or are

79 related to the Chinese market. Some of these studies examined the effects of China's

80 consumption and governance policies on value chain restructuring and the sustainable

81 development of global luxury seafood industries (Fabinyi et al., 2012; Fabinyi, 2016; Fabinyi

82 & Liu, 2014). Others have discussed historical, cultural, ethical, and social issues related to

83 luxury seafood consumption in China (Fabinyi, 2011; Fabinyi & Liu, 2014a; Fabinyi & Liu,

84 2014c; Fabinyi & Liu, 2016). In addition, Purcell (2014) and Purcell, Williamson, and

85 Ngaluafe (2018) examined relationships between the market price of seafood in China and

86 global fishery governance for a specific luxury seafood species – sea cucumber. However, most

87 of these luxury seafood-related studies were based on academic and industrial perspectives of

88 scholars themselves and stakeholders of the luxury seafood industry, for example, restaurant

89 managers and chefs, rather than a consumer perspective. Only two recent publications explored

90 consumer behaviours for two specific luxury seafood species – lobster and wild salmon. Wang

91 et al. (2018) examined consumers' perceptions, general image, and segmentation toward a

92 specific luxury seafood species – lobster. Zheng, Wang, and Lu, (2018) explored the impacts

93 of consumers' consumption habits, perceptions, and social demographic characteristics on their

94 purchase intentions toward sustainable wild salmon. To our knowledge, there are no consumer-

95 based studies that explore consumers' perceptions, attitudes, motivations, segmentation, and

96 consumption toward luxury seafood as a general food type.

97   As a result, this consumer study focuses on those previously unexplored areas to

98 investigate the choice motives and their dimensions and consumer segmentation for luxury

99 seafood consumption in China. It will also explore Chinese consumers' species preferences for

100 luxury seafood.

1.2 Hypothetical framework and theoretical background

102   A hypothetical framework is proposed for this study in Figure 1. This section will

103   discuss the theoretical background underpinning it.

104

105   >>>>>>>> Insert Figure 1

106

107   This study explores consumers' choice motives for luxury seafood in China, due to the

108   fact that consumer motives for food consumption provide vital information for food producers

109   and marketers to develop effective marketing strategies (Januszewska, Pieniak, & Verbeke,

110   2011; Wang, De Steur, Gellynck, & Verbeke, 2015). Scholars have conducted many studies

111   related to seafood choice motives; which mainly focused on the effects that consumers' health,

112   food safety, and ethical concerns have on their seafood consumption (e.g. Acebrón, Mangin,

113   & Dopico, 2001; Birch, Lawley, & Hamblin, 2012; Pieniak, Verbeke, & Scholderer, 2010;

114   Salladarré, Brécard, Lucas, & Ollivier, 2016; Verbeke, Vermeir, & Brunsø, 2007). However,

115   there is still a need to comprehensively understand consumers' choice motives toward seafood,

116   in particular for luxury seafood. A total of 16 motivation items are involved in this study as

117   latently significant motives that drive the choice of luxury seafood by Chinese consumers

118   including delicious, umami, nutritious, high-quality life, face consciousness, show status,

119   networking, appetite, quality assured, enjoyable, new food, upscale food, fresh, scarce food,

120   like to eat, and healthy. These 16 motivation items are developed from a qualitative study

121   conducted in April 2018 (see the appendix for more details).

122   Regarding luxury seafood, like other luxury goods, its consumption may depend more

123   on a distinctive mixture of social and individual values than what exists for normal goods

124   (seafood) (Vickers & Renand, 2003; Williams et al., 2018). The symbolic values embraced by

125   luxury goods have a significant effect on the product choice of consumers (Vickers & Renand,

126 2003). In that perspective, consumers may have a more complex motivation construct for their

127 choice of luxury seafood than that for normal seafood. As such, there is a need to understand

128 consumers' motivation dimensions for the choice of luxury seafood and their influences on

129 luxury seafood consumption. Chinese consumers' choice motives for luxury seafood are

130 assumed to have different dimensions as shown in the hypothetical model.

131   A number of studies have indicated the significant effects of consumers' motives on

132 their attitudes, purchase intentions, and consumption toward food and seafood products (e.g.

133 Acebrón et al., 2001; Birch et al., 2012; Januszewska et al., 2011; Pieniak et al., 2010;

134 Salladarré et al., 2016; Verbeke et al., 2007; Wang et al., 2015). In that perspective, those

135 motivation dimensions are assumed to have significant influences on Chinese consumers'

136 consumption of luxury seafood.

137   Regarding consumer segmentation, previous studies have indicated the different

138 perceptions, attitudes, and consumption behaviours toward aquatic food products among

139 different consumer segments (Jacobs, Sioen, Pieniak, De Henauw, Maulvault, Reuver, &

140 Verbeke, 2015; Pieniak, 2008; Verbeke et al., 2007; Wang & Somogyi, 2018; Wang et al.,

141 2018; Wang & Somogyi, 2019). Specifically for Chinese consumers, those consumer segments

142 with frequent consumption or positive attitudes toward shellfish often include a high

143 percentage of people who have a high level of income and occupation (Wang & Somogyi,

144 2018; Wang & Somogyi, 2019). Wang et al. (2018) also indicate that the Chinese consumer

145 segment with more positive beliefs and image of lobster include a high percentage of people

146 who are married, aged above 30 years, live in a first-tier city, and have a high level of income,

147 education, and occupation. As such, it is necessary to recognize similarities and differences of

148 the choice motives for luxury seafood among different consumer segments in China. In this

149 study, consumer segments are identified based on Chinese consumers' choice motivation

150 dimensions for luxury seafood.

151   Previous studies have indicated Chinese consumers' species preferences for seafood

152   (e.g. hair-tail, sea shrimp, salmon, and squid) and for shellfish (e.g. shrimp, fresh-water crab,

153   and scallop) (Fabinyi et al., 2016; Wang & Somogyi, 2018, 2019). Many studies indicate that

154   species preferences significantly influence consumers' consumption, attitudes, and

155   segmentation for aquatic products (Almeida, Altintzoglou, Cabral, & Vaz, 2015; Cardoso,

156   Lourenço, Costa, Gonçalves, & Nunes, 2013; Fabinyi et al., 2016; Nguyen et al., 2015; Wang

157   & Somogyi, 2018, 2019). However, there is still a lack of understanding of consumers' luxury

158   seafood species preferences, in particular for Chinese consumers. Therefore, this study

159   explores Chinese consumers' preferences for 15 specific luxury seafood species, namely:

160   salmon, lobster, abalone, scallop, oyster, sea shrimp/prawn, sea cucumber, king crab, sea crab

161   (except king crab), sea fish (except salmon and tuna), surf clam, shark fin, geoduck, sea urchin,

162   and tuna. These 15 luxury seafood species are selected based on the findings from the

163   qualitative consumer study (see the appendix for more details).

164   **2. Methods and materials**

165   *2.1 Participants and procedures*

166   The data were collected through a web-based quantitative consumer survey in May

167   2018. A questionnaire was developed in English and translated into Chinese. An online pilot

168   test (n = 52) was undertaken with registered panel members of a Chinese research agency in

169   order to improve the language expression and question design. The final version was

170   programmed into a web-based questionnaire and distributed among members of the same

171   consumer panel in three Chinese cities, Beijing, Shanghai, and Shenzhen. Only those

172   consumers who had eaten luxury seafood in the past were retained as valid participants and

173   were shown the full set of questions for this study. All valid participants received a financial

174   incentive from the Chinese research agency. The three cities are China's first-tier cities, which

175   typically have a stronger consumption power for luxury seafood than lower-tiered cities (Wang

176 & Somogyi, 2018; Wang et al., 2018; Wang, Somogyi, & Charlebois, 2019). A total of 967

177 valid responses were obtained, of which 31.9% were from Beijing, 34.9% from Shanghai, and

178 33.3% from Shenzhen. Table 1 indicates the sociodemographic features of the sample.

179

180 >>>>>>>> Insert Table 1

181

182   *2.2 Measures*

183   Participants' choice motives for luxury seafood were measured by 16 items as shown

184 in Table 2. These measurement items were designed based on a literature review of former

185 studies related to food and seafood choice motives (e.g. Wang, De Steur et al., 2015; Verbeke

186 et al., 2007) and the findings from a qualitative consumer survey (see the appendix). They were

187 asked to evaluate the importance of the 16 items for their seafood choice by: 'It is important to

188 me that the luxury seafood I eat/eating luxury seafood [each of the 16 measurement items]'

189 with seven-point agreement scales from 7 = Totally agree to 1 = Totally disagree (Wang, De

190 Steur et al., 2015; Wang, Gellynck, & Verbeke, 2017). The sentence structure 'It is important

191 to me that the luxury seafood I eat' focuses on motivation measurement items including

192 delicious, umami, nutritious, quality assured, fresh, scarce food, and like to eat. While the

193 sentence structure 'It is important to me that eating luxury seafood' focuses on motivation

194 measurement items including high-quality life, face consciousness, show status, networking,

195 appetite, enjoyable, new food, upscale food, and healthy.

196

197 >>>>>>>> Insert Table 2

198

199   In order to examine species preferences in participants' luxury seafood consumption, a

200 multiple-choice question was developed. They were asked to indicate their three most

201 frequently consumed luxury seafood species during the past year from 15 specific luxury

202 seafood species: salmon, lobster, abalone, scallop, oyster, sea shrimp/prawn, sea cucumber,

203 king crab, sea crab (except king crab), sea fish (except salmon and tuna), surf clam, shark fin,

204 geoduck, sea urchin, and tuna. The 15 specific luxury seafood species were selected based on

205 the findings from the same qualitative consumer survey (see the appendix). Participants'

206 responses to the multiple-choice question were transformed and recoded into dummy variables

207 (Yes = 1; No = 0) for each of the 15 luxury seafood species which were involved in the data

208 analysis of this study.

209   Participants' consumption of luxury seafood as a general food type was measured by

210 an item: 'To what extent do you consider yourself a consumer of luxury seafood?' with a seven-

211 point scale from 'Very much' to 'Not at all'. This design was developed from a study by Wang

212 and Somogyi (2018), which examined consumers' consumption of shellfish.

213   ***2.3 Data analysis***

214   The statistical software tools SPSS 25 and Stata 15 were used for the data analyses.

215 Firstly, descriptive analyses (mean values or percentages) were undertaken for the choice

216 motive variables and consumption variables for luxury seafood as a general food type and the

217 dummy consumption variables of specific luxury seafood species. Secondly, principal

218 component analysis (PCA) with varimax rotation was conducted to examine the main

219 dimensions in the 16 choice motives of luxury seafood (Almli, Verbeke, Vanhonacker, Næs,

220 & Hersleth, 2011; Verbeke & Viaene, 1999). Two-dimensional variables were obtained based

221 on mean scores of the motive variables for each of the dimensions. Thirdly, linear regression

222 models were built to associate the consumption variable of luxury seafood as a general food

223 type with the two motivation dimension variables depending on the scale nature of the

224 dependent variable, the consumption of luxury seafood (Darnall, Ji, & Vázquez-Brust, 2018).

225 This dependent variable was treated as an ordinal approximation of a scale/continuous variable

226　due to an assumption of equal intervals between the seven-point agreement scales. Fourthly, a

227　two-step cluster analysis (with the distance measure of log likelihood and the clustering

228　criterion of Schwarzsches Bayes) was conducted to uncover consumer segments by using the

229　dimension variables as segmentation variables (Janssen, Busch, Rödiger, & Hamm, 2016).

230　Cross-tabulation with $\chi2$ tests and independent sample t-tests were used to identify the

231　significant differences across the consumer segments based on sociodemographic factors and

232　participants' luxury seafood (as a general food type) consumption (Verbeke & Viaene, 1999).

233　**3. Results**

234　***3.1 Choice motives and consumption of luxury seafood***

235　　　　As shown in Table 3, the mean values for all the 16 choice motive variables are located

236　on the positive anchors of answer categories (higher than 4) and ranged from 4.11 to 6. The

237　highest mean values were found for delicious and umami (higher than 5.9); while the lowest

238　mean values were identified for face consciousness and show status (lower than 4.5). In

239　addition, the mean value of the consumption variable of luxury seafood as a general food type

240　was 4.17.

241　　　　As shown in Figure 2, lobster and salmon dominated the species of consumption, of

242　which around 48% of participants indicated their frequent consumption of these two luxury

243　seafood species in the past year. None of the other luxury seafood species were selected as

244　frequently consumed species in the past year by over 30% of the total sample.

245

246　>>>>>>>> Insert Table 3

247　>>>>>>>> Insert Figure 2

248

249

250

3.2 Choice motive dimensions of luxury seafood

252   A high Kaiser–Meyer–Olkin (KMO) value of 0.918 and a highly significant result of

253   Bartlett's test of sphericity (Approx. $\chi 2 = 5933.640$, *p* = 0.000) indicated that the data for the

254   16 choice motive variables were suitable for PCA (Verbeke & Viaene, 1999). As shown in

255   Table 4, the PCA resulted in a factorial construct with two dimensions for the 16 choice motive

256   variables. The 16 choice motive variables had high loadings (higher or close to 0.5) on the two

257   motive dimensions and had no high cross-loadings with each other (e.g. without loading values

258   higher than 0.35 for both dimensions) (Jones, Mothersbaugh, & Beatty, 2002). Reliabilities of

259   the two dimensions were relatively high given that they all had a Cronbach's α score above

260   0.80 (Žeželj, Milošević, Stojanović, & Ognjanov, 2012). This two-factor solution for choice

261   motive dimensions of luxury seafood accounted for 51.6% of the variance in the data of this

262   study (Almli et al., 2011; Verbeke & Viaene, 1999).

263

264   >>>>>>>>> Insert Table 4

265

266   One of the dimensions was labelled as food value, due to the fact that the choice motives

267   loaded on this dimension were mainly derived from consumers' psychological satisfaction with

268   luxury seafood itself, e.g. can enhance their mood, bring them taste appeal, is healthy and

269   quality assured, satisfies their desire to try new food. Umami, delicious, fresh and like to eat

270   were the most important specific motives attached to the food value dimension due to their

271   high scores of standardized factor loadings (above 0.7).

272   While another dimension was labelled as symbolic value, as the choice motives loaded

273   on the dimension were related to consumers' psychological satisfaction with the symbolic

274   values of luxury seafood, e.g. can satisfy their needs for 'luxury' and 'scarce' food

275   consumption, high-quality life, networking and face consciousness, and show their social

276 status. Symbolic values are added values in consumers' minds originating from their early

277 experiences of certain special food products (Wang, Gellynck, & Verbeke, 2016). Show status,

278 face consciousness, high quality life, and networking were the most important specific motives

279 attached to the symbolic value dimension due to their high scores of standardized factor

280 loadings (above 0.7).

281   Two-dimensional variables were obtained based on mean scores of the loaded motive

282 variables for each of the two dimensions. That were used as segmentation variables for a cluster

283 analysis described in section 3.4.

284   *3.3 Significant motivation dimensions on luxury seafood consumption*

285   Table 5 indicates the results of the linear regression model for the total sample, with the

286 dependent variable as luxury seafood (as a general food type) consumption and the independent

287 variables being the two motivation dimension variables.

288   The two motivation dimensions both had a significant and positive influence on

289 consumers' luxury seafood consumption. The symbolic value dimension had a higher value of

290 coefficient estimate (0.351) than that for the food value dimension (0.213). In other words,

291 symbolic values as a whole had a more significant influence on luxury seafood consumption

292 than that of food values in the total sample.

293

294 >>>>>>>>> Insert Table 5

295

296   *3.4 Consumer segments for luxury seafood choice*

297   The two-step cluster analysis resulted in a two-segment solution based on participants'

298 choice motive dimensions toward luxury seafood (Table 6). Segment one accounted for 42.4%

299 of the total sample. Participants in this segment on average scored the food value dimension on

300 the positive answer anchor, with a value above five, while they scored the symbolic value

301 dimension on the negative answer anchor, with a value below four. In other words, participants

302 in this segment considered food value as a significant factor for their luxury seafood choice,

303 while they did not agree that symbolic value is an important factor driving their luxury seafood

304 choice. Therefore, this segment was labelled as food value seekers.

305   Segment two accounted for 57.6% of the total sample. Participants in this segment

306 scored both motive dimensions on the positive answer anchors, with values above five. As

307 such, this segment was labelled as dual value seekers.

308

309 >>>>>>>> Insert Table 6

310

311   As shown in Table 7, cross-tabulation with $\chi 2$ tests and independent sample t-tests

312 revealed significant differences between those two consumer segments in luxury seafood

313 consumption and sociodemographic distributions including city, income, age category, marital

314 status, education, and occupation. The dual value seeker segment had a mean score for luxury

315 seafood consumption above the average level (e.g. above 4 for the variable of luxury seafood

316 consumption), and a higher percentage of participants who lived in Beijing, were aged between

317 31 and 40 years, had a high or medium income, a high level of education (e.g. bachelor degree

318 or above), and occupation (e.g. managing employees), and were married, than that for the food

319 value seeker segment. By contrast, the food value seeker segment had a mean score for luxury

320 seafood consumption below the average level (e.g. below 4 for the variable of luxury seafood

321 consumption), and a higher percentage of participants who lived in Shenzhen, were aged below

322 31 and above 40 years, had a low income, a low level of education (e.g. college degree and

323 below), and occupation (e.g. students and other occupations such as retired people and house

324 wife/husband), and were unmarried (e.g. single or with a partner), than that for the dual value

325 seeker segment.

326

327 >>>>>>>> Insert Table 7

328

329 **4. Discussion**

330 *4.1 Motives and motivation dimensions for choice of luxury seafood in China*

331 This study indicates consumers' choice motive dimensions for luxury seafood. A two-

332 dimensional construct was obtained for Chinese consumers' choice motives for luxury seafood:

333 food value and symbolic value. As a dimension, the symbolic value has a more significant

334 effect on the consumption of luxury seafood than the food value. This is in line with the

335 previous views about luxury goods' consumption that is more based on symbolically social and

336 individual values than intrinsic attributes (Brun & Castelli, 2013; Vickers & Renand, 2003;

337 Williams, Atwal, & Bryson, 2018).

338 The food value dimension included choice motives related to consumers' psychological

339 satisfaction from luxury seafood itself: umami, delicious, fresh, like to eat, enjoyable,

340 nutritious, quality assured, healthy appetite, and new food. These choice motives correspond

341 with the important factors influencing consumers' beliefs, attitudes, behaviours, and behaviour

342 intentions toward seafood or luxury seafood found by previous consumer-based studies such

343 as: health concern, mood enhancement, quality concern, sensory appeal, and food curiosity

344 (Altintzoglou, Einarsdottir, Valsdottir, Schelvis, Skåra, & Luten, 2010; Myrland et al., 2000;

345 Nguyen et al., 2015; Trondsen et al., 2004; Wang & Somogyi, 2018; Wang et al., 2018; Wang

346 et al., 2019). These motives are also related to some attributes associated with luxury goods'

347 consumption such as an excellent quality, more comfortable, enjoyable and fulfilling, and

348 enhancing positive feelings (Brun & Castelli, 2013). Furthermore, Umami, delicious, fresh and

349 like to eat are the most important specific motives attached to the food value dimension for the

350 luxury seafood choice. Umami is a typical taste of seafood confirmed by researchers and is

351 especially familiar with East-Asian consumers who have a long history of cooking with umami-

352 tasting recipes and ingredients (Komata, 1990; Kurihara, 2009; Nakayama & Kimura, 1998;

353 Wang et al., 2018). Like to eat is related to mood enhancement which is an important motive

354 for consumers' daily food choices and has been shown to have significant effects on Chinese

355 consumer behaviours toward high-end food products (e.g. European food), shellfish, and a

356 specific luxury seafood species – lobster (Steptoe, Pollard, & Wardle, 1995; Wang et al., 2018;

357 Wang & Somogyi, 2018; Wang, De Steur et al., 2015). Freshness and taste appeal are important

358 motives for seafood consumer choice confirmed by numerous previous studies (e.g. Birch et

359 al., 2012; Hu, Yuan, Yu, Qu, Chen, Wang, & Kimura, 2014; Johnston & Roheim, 2006; Wang

360 et al., 2018; Wang & Somogyi, 2018).

361   The symbolic value dimension contains choice motives related to the added values of

362 luxury seafood in consumers' minds: show status, face consciousness, high-quality life,

363 networking, upscale food, and scarce food. These motives are related to some other attributes

364 associated with luxury goods' consumption such as high priced, and a vehicle for displaying

365 wealth, self-expression, and uniqueness (Brun & Castelli, 2013). Furthermore, show status,

366 face consciousness, high quality life, and networking are the most important specific motives

367 attached to the symbolic value dimension for the luxury seafood choice. These findings are in

368 line with the distinctive consumption cultures and consumer psychology for luxury seafood in

369 China, mentioned by previous studies, such as showing individuals' social status and high

370 quality of life to others, enhancing face consciousness, and networking with others (Fabinyi,

371 2011; Fabinyi & Liu, 2014a, 2014c; 2016; Wang & Somogyi, 2018; Wang et al., 2018).

372   *4.2 Consumer segmentation for choice of luxury seafood in China*

373   This is the first study to provide Chinese consumer segments for luxury seafood as a

374 general food type. The findings indicate two consumer segments: dual value seeker and food

375 value seeker. Consumers in the dual value seeker segment attach more importance to the food

376 and symbolic value dimensions of luxury seafood choices and have a higher consumption

377 frequency for luxury seafood than their counterparts in the food value seeker segment who only

378 attach importance to the food value dimension of luxury seafood choices. Consumers in the

379 dual value seeker segment are also more likely to have a high or medium level of income, a

380 high level of education and occupation, and be married than those consumers in the food value

381 seeker segment. This is in line with the findings of Wang et al. (2018) that frequent luxury

382 seafood consumers in China are often characterised by a high or medium income, a high

383 educational level, and a high occupational level. It also fits with the findings from previous

384 studies indicating that frequent seafood consumers often have a high level of education and

385 income (Cardoso et al., 2013; Myrland et al., 2000; Pieniak et al., 2010; Salladarré et al., 2016;

386 Trondsen et al., 2004; Verbeke et al., 2007; Wang et al., 2018). Furthermore, the dual value

387 seeker segment contains a higher percentage of consumers who live in Beijing and a lower

388 percentage of consumers who live in Shenzhen than the food value seeker segment. This

389 confirms the previous findings that consumers who live in higher-tiered cities are more likely

390 to become frequent (luxury) seafood eaters than those who live in lower-tiered cities due to a

391 more advanced level of economy and other social interactions that result in a stronger

392 purchasing power for (luxury) seafood (Fabinyi et al., 2016; Wang & Somogyi, 2018; Wang

393 et al., 2018; Wang et al., 2019). Beijing is China's capital city and has the highest level of

394 economic development and personal income in China (China Daily, 2017; Wang & Somogyi,

395 2018). In addition, the dual value seeker segment contains a higher percentage of consumers

396 aged between 31 and 40 years than the food value seeker segment. This indicates that

397 consumers within this age range are more likely to become frequent luxury seafood eaters in

398 China. This is partly in line with the findings of Wang et al. (2018) that Chinese consumers

399 aged above 30 years have more positive perceptions toward a specific luxury seafood species

400 – lobster. The findings also correspond with previous findings that seafood consumption is

401 positively linked to age (Cardoso et al., 2013; Myrland et al., 2000; Pieniak et al., 2010;

402 Salladarré et al., 2016; Trondsen et al., 2004; Verbeke et al., 2007; Wang et al., 2018).

403 *4.3 Species preferences of luxury seafood consumption in China*

404 This is the first study to provide empirical findings about consumers' species

405 preferences of luxury seafood in China; answering the questions regarding which species

406 belong to luxury seafood in Chinese consumers' minds and are most frequently consumed by

407 them. The most frequently consumed luxury seafood species include salmon, lobster, abalone,

408 scallop, oyster, sea shrimp/prawn, sea cucumber, and king crab (e.g. those specific species

409 indicated for consumption by 20% or close to 20% of participants during the past year, see

410 Figure 2). This corresponds with the findings from a value chain study by Wang et al. (2019)

411 that lobster, shrimp/prawn, scallop, oyster, and king crab are common species in China's high-

412 end market – the imported shellfish industry. It also corresponds with the views from luxury

413 seafood-related studies that lobster, abalone, sea cucumber, and salmon are highly demanded

414 luxury or upscale seafood species in China (Fabinyi, 2016; Fabinyi & Liu, 2014a, 2014c;

415 Purcell et al., 2018; Wang et al., 2018).

416 *4.4 Limitations and recommendations*

417 The current study has some important limitations. Firstly, given the nature of our

418 survey, i.e. a web-based questionnaire targeted at luxury seafood consumers in first-tier

419 Chinese cities, our sample did not fully represent the demographic characteristics of China. It

420 is recommended that future relevant studies use a more representative sample for China or

421 involve consumer samples from other-tiered Chinese cities.

422 Secondly, we only used a binary question (Yes/No) to recognise if a participant had

423 eaten luxury seafood in the past, without any specific luxury seafood species shown to them.

424 As a result, those participants who considered any specific seafood species as a luxury seafood

425 and had eaten it with any frequency (i.e. once a day, twice a year…), were involved in the later

426 quantitative survey. Future relevant studies should involve more detailed screening criteria to

427 identify valid participants, i.e. consumption frequency, taking a restricted diet, having a seafood

428 allergy, and frequently consumed luxury seafood species.

429   Thirdly, only participants who had consumed luxury seafood were retained as valid

430 participants in our study. This may result in a sampling bias, as consumers who had no shopping

431 experience with luxury seafood were excluded from our study. The questionnaire was sent to a

432 total of 1117 members of the consumer sample panel, 967 of which were valid and involved in

433 our study. As such, 86% of the 1117 participants had eaten luxury seafood previously. This

434 percentage would be higher if considering those invalid participants who were excluded from

435 the survey due to careless answers i.e. too short answering time (e.g. less than 3 minutes) and

436 straight-line answers (e.g. all the answers were "7").

437   Fourthly, a measurement category 'sea fish (except salmon and tuna)' was involved to

438 explore participants' species preferences of luxury seafood. This may result in a measurement

439 bias, as a broad sea fish species can be included in this seafood category. It is recommended to

440 indicate specific luxury sea fish species in future relevant studies such as live reef food fish

441 and garrupa, in order to avoid the bias.

442   Fifthly, the subjective nature of the measure for luxury seafood consumption might be

443 problematic. Particularly, respondents might subjectively define the 'average' point for luxury

444 seafood consumption in different ways. Therefore, it is recommended that future relevant

445 studies include objective measures of luxury seafood consumption, e.g. weekly or monthly

446 consumption frequencies.

447   Finally, it should be mentioned that a low level of education (e.g. high school,

448 polytechnic school or below) might be correlated with the occupation category-students who

449 do not obtain their degree in our sample.

450

5. Conclusions

451   To our knowledge, until now, all the luxury seafood-related marketing and consumer
453 studies are related to or focus on China due to the fact that it is the world's largest seafood
454 market. This study is also China-based and is the first study to contribute knowledge about
455 choice motives, motive dimensions, consumer segmentation, and species preferences on luxury
456 seafood consumption. The findings from the Chinese sample address the lack of understanding
457 of luxury seafood consumer behaviour in China and make a cross-border contribution to the
458 general theory of consumers' choice motives, segmentation, and species preferences toward
459 luxury seafood. Further, the empirical and first-hand findings of this study can assist global
460 luxury seafood producers and exporters to develop effective marketing strategies for their
461 products to exploit the huge Chinese market and other potential luxury seafood markets, e.g.
462 recognising the right consumer segments and developing promotions to meet significant choice
463 motives.

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608 **Appendix**

609   In order to gain a preliminary insight into Chinese consumers' choice motives and

610 species perceptions for luxury seafood, a qualitative consumer survey (n = 205) was conducted

611 in April 2018. A web-based questionnaire was randomly distributed among the registered panel

612 members of the same Chinese research agency as that for this quantitative consumer study. An

613 open-ended question was used to gain a qualitative perspective of Chinese consumers' choice

614 motives for luxury seafood: 'In your opinion, why do people purchase or consume luxury

615 seafood?' Content analysis was applied to break participants' answer texts into text fragments

616 which were later grouped into word codes (Ritchie, Lewis, Nicholls, & Ormston, 2013; Wang

617 et al., 2019). Among the 365 elicited text fragments, 32 text fragments (8.8%) were

618 semantically different. The text fragments were grouped into 23 word codes. Figure I indicates

619 the word frequencies of these word codes. The 16 choice motives in the quantitative study were

620 selected due to the fact that they were the most frequent word codes in this qualitative study

621 (e.g. appeared in at least five participants' answer texts; while the other seven word codes only

622 appeared in one or two participants' answer texts). The 16 word codes included 357 text

623 fragments (97.8% of the total amount of elicited text fragments).

624

625 >>>>>>>> Insert Figure I

626

627   Participants of the qualitative survey were asked to indicate three specific luxury

628 seafood species that they often consume or see at their local restaurants, supermarkets, or wet

629 markets. Among the 615 elicited species text fragments (species names), 41 (6.7%) were

630 semantically different. Some of the species text fragments were combined as they represented

631 similar seafood species, and our study used seafood as a research object rather than fresh-water

632 aquatic products. These species text fragments include sea crab (crab and sea crab), sea fish

633 (sea fish, deep sea fish, and fish), and sea shrimp/prawn (prawn, shrimp, and sea shrimp).

634 Finally, a total of 15 specific luxury seafood species were selected as the answer categories for

635 the quantitative survey as they were the most frequent species mentioned by the participants in

636 this qualitative survey (mentioned at least by five participants). Figure II indicates the word

637 frequencies of these 15 species which included 555 species text fragments (90.2% of the total

638 amount of elicited species text fragments).

639

640 >>>>>>>> Insert Figure II

Table 7 Socio-demographics and luxury seafood consumptions of the two consumer segments

	Segment 1	Segment 2
	Food value seeker	Dual value seeker
	(n=410)	(n=557)
City*		
Beijing	27.6%	35.0%
Shanghai	35.1%	34.6%
Shenzhen	37.3%	30.3%
Gender		
Male	52.0%	47.0%
Female	48.0%	53.0%
Income***		
0-5000 RMB	23.2%	12.9%
5001-10000 RMB	48.8%	54.6%
≥10001RMB	28.0%	32.5%
Marital status***		
Married	63.2%	76.8%
No, but has a partner	16.6%	8.6%
Single	20.2%	14.5%
Educational level**		
High school, polytechnic school or below	8.8%	5.2%
College degree	18.3%	12.4%
Bachelor degree	61.7%	69.5%
Master degree or above	11.2%	12.9%
Occupation***		
Managing employee	38.0%	48.7%
Salaried employee	39.3%	39.0%
Student	9.5%	5.4%
Other occupations	13.2%	7.0%
Age	33.79	34.59
Age category**		
18-30	42.2%	36.8%
31-40	24.1%	35.2%
≥ 41	33.7%	28.0%
Household size		
1-2	7.8%	8.4%
3	51.7%	57.1%
4	19.8%	18.3%
≥5	20.7%	16.2%
Age	33.79	34.59
Luxury seafood consumption***	3.70	4.52

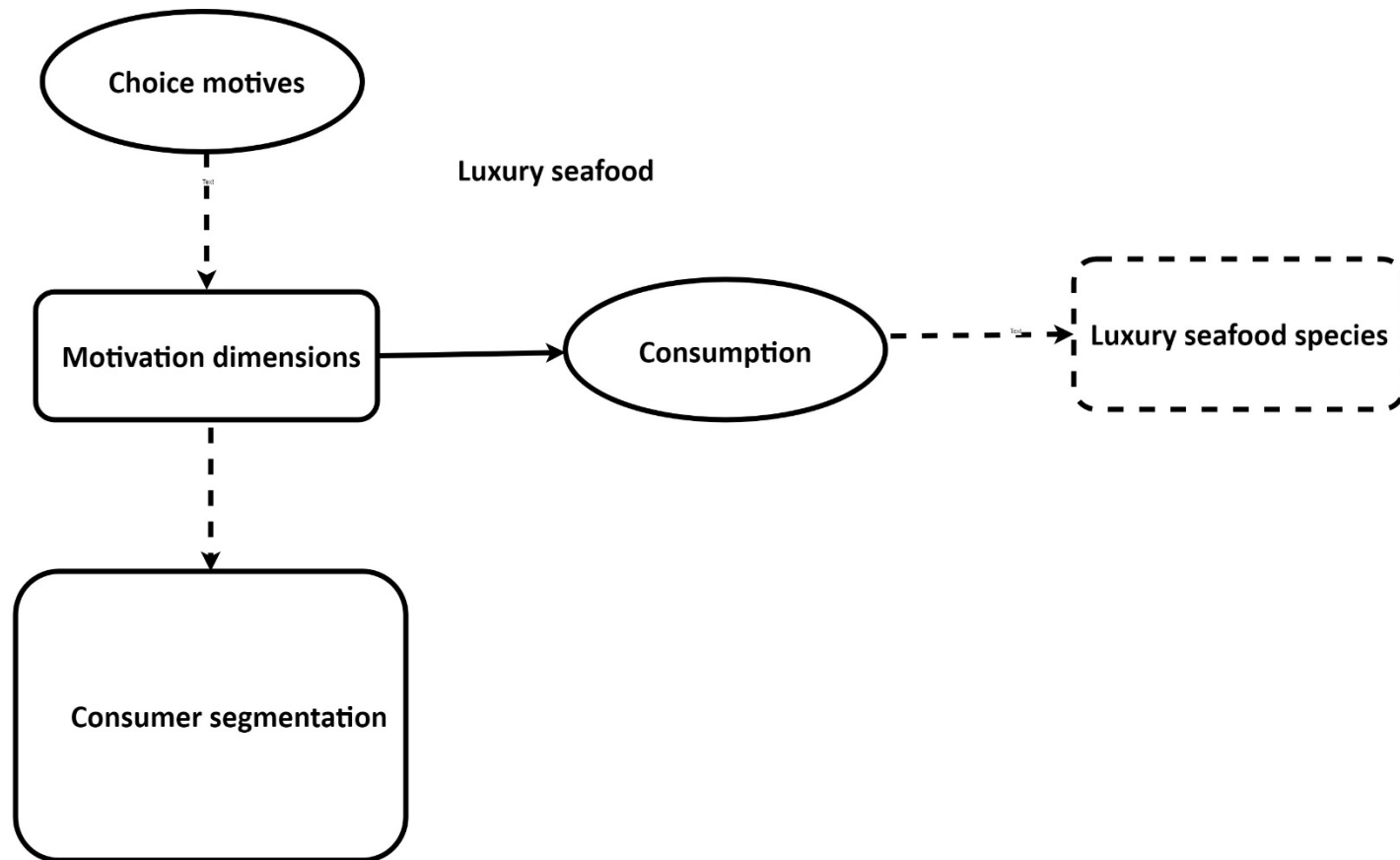*Note:* ***= $p<0.001$; **= $p<0.01$; *= $p<0.05$.
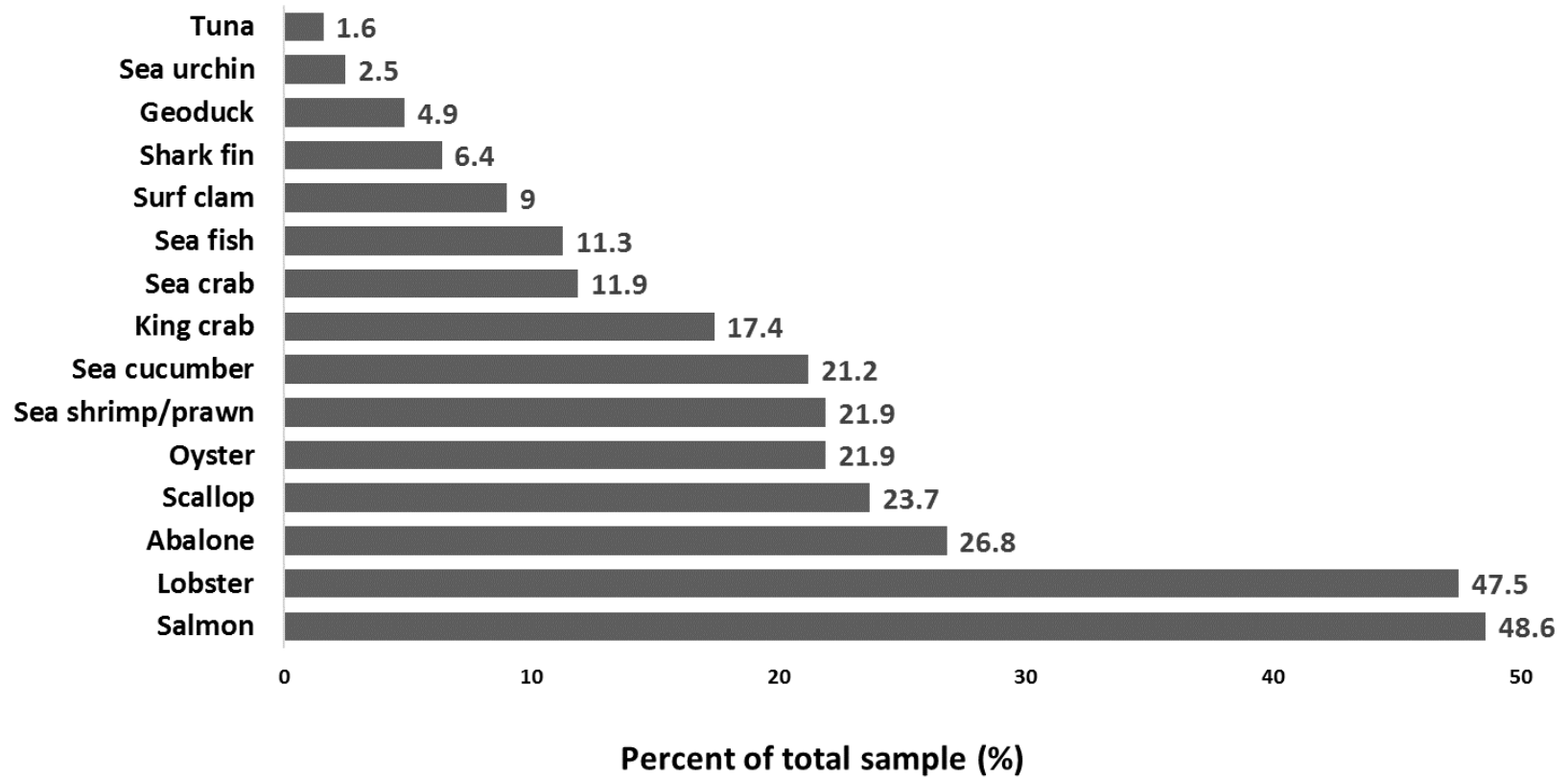
Figure 1 Hypothetical framework of the study

Figure 2 Percent of participants who admit their consumption for the given 15 luxury seafood species in the past one year
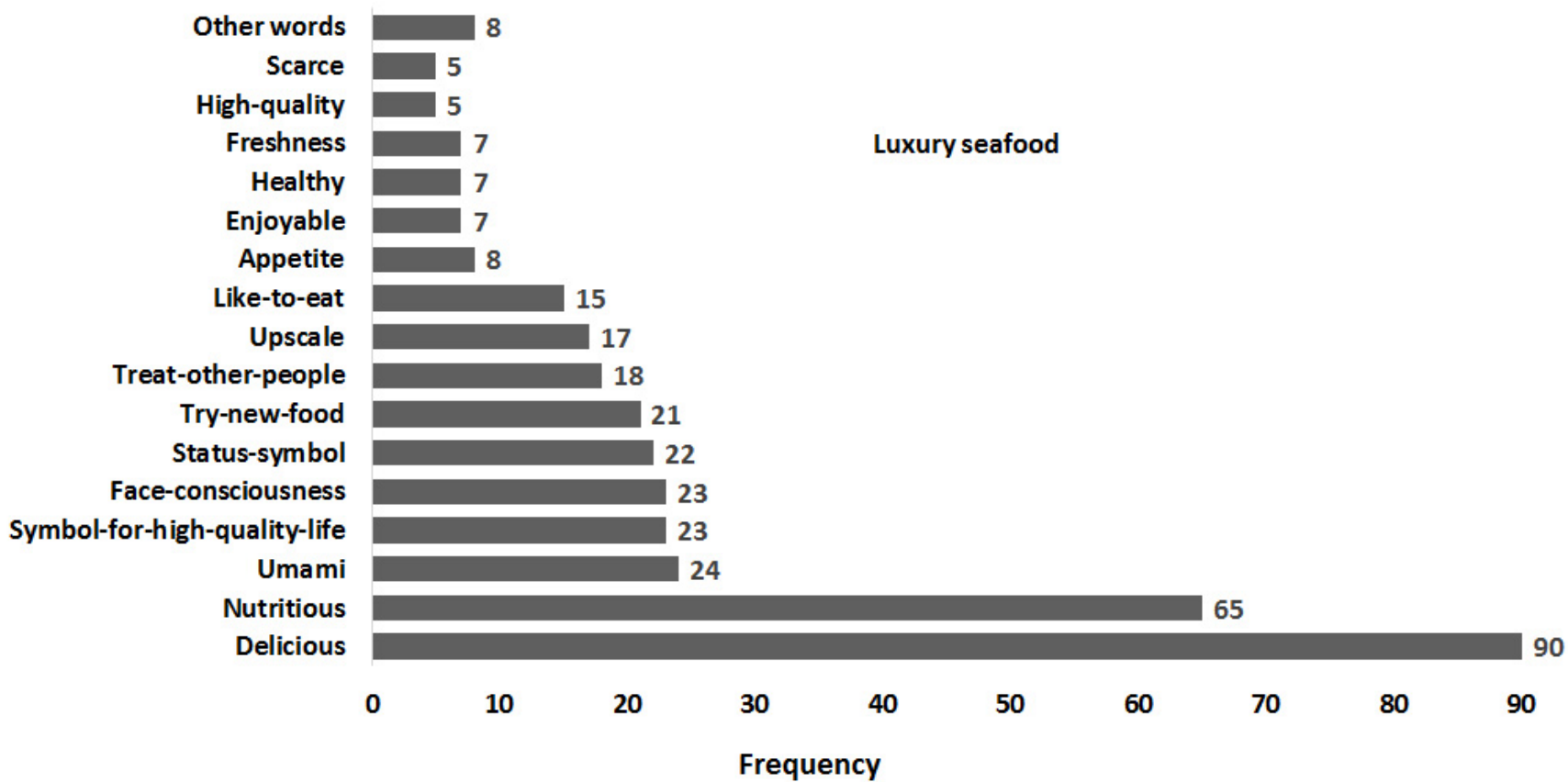
Figure I Frequency of elicited word-codes for the choice motives of luxury seafood in the qualitative consumer study
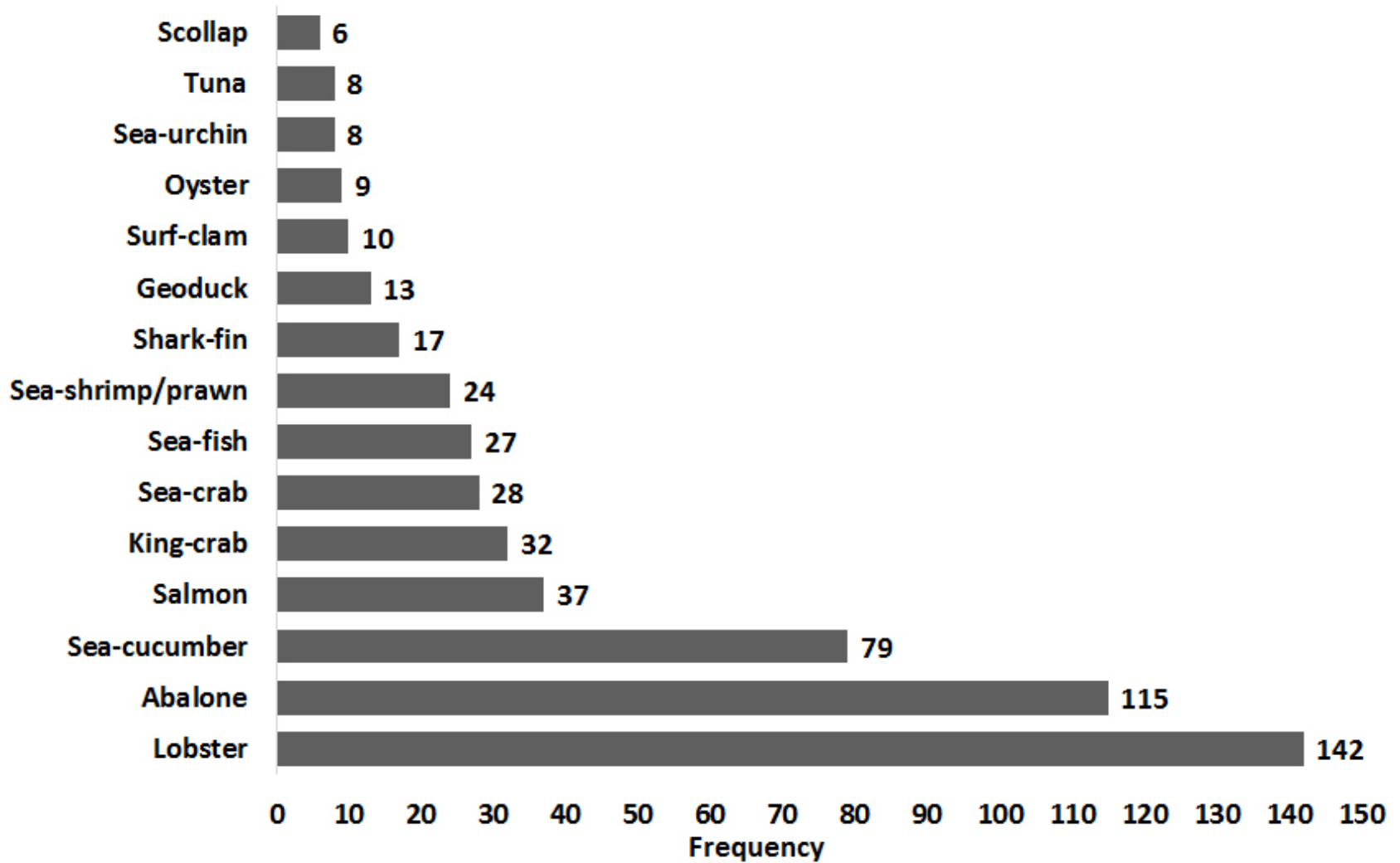
Figure II Most frequently elicited luxury seafood species (n> 5 for 205 participants) in the qualitative consumer study