

Supplementary data

Figure S1: The schematic drawing of the questionnaire used in the study.

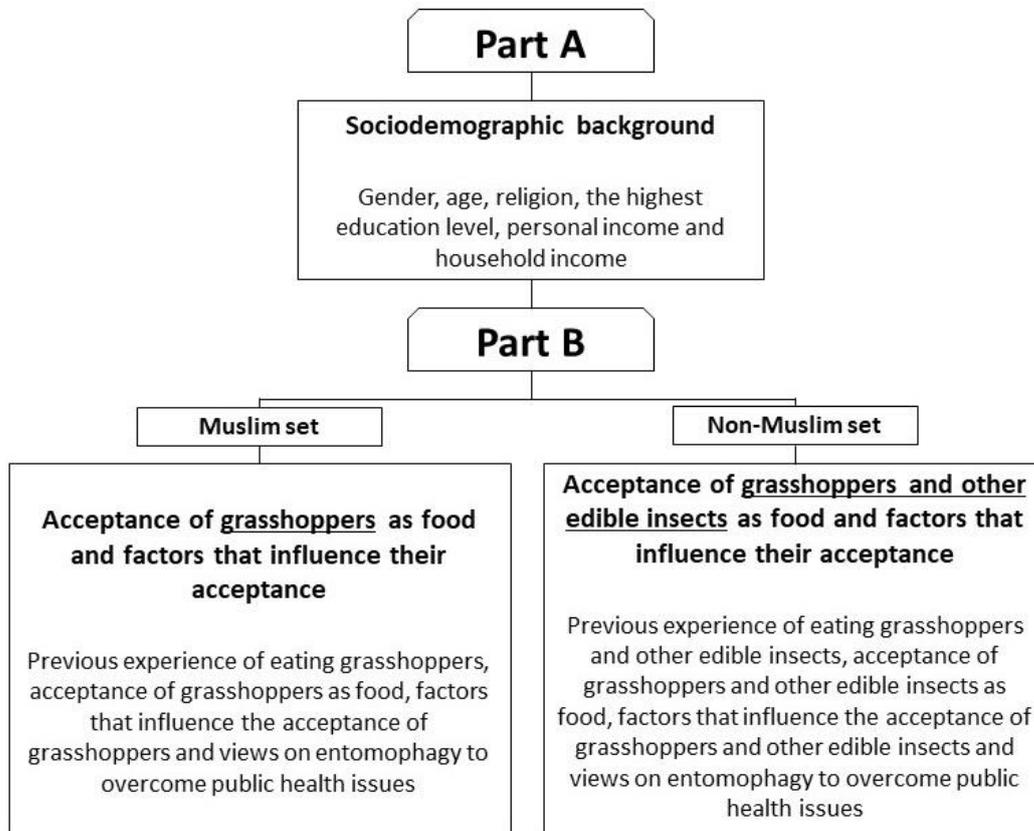


Figure S2: Type of channels that the respondents get to know about entomophagy

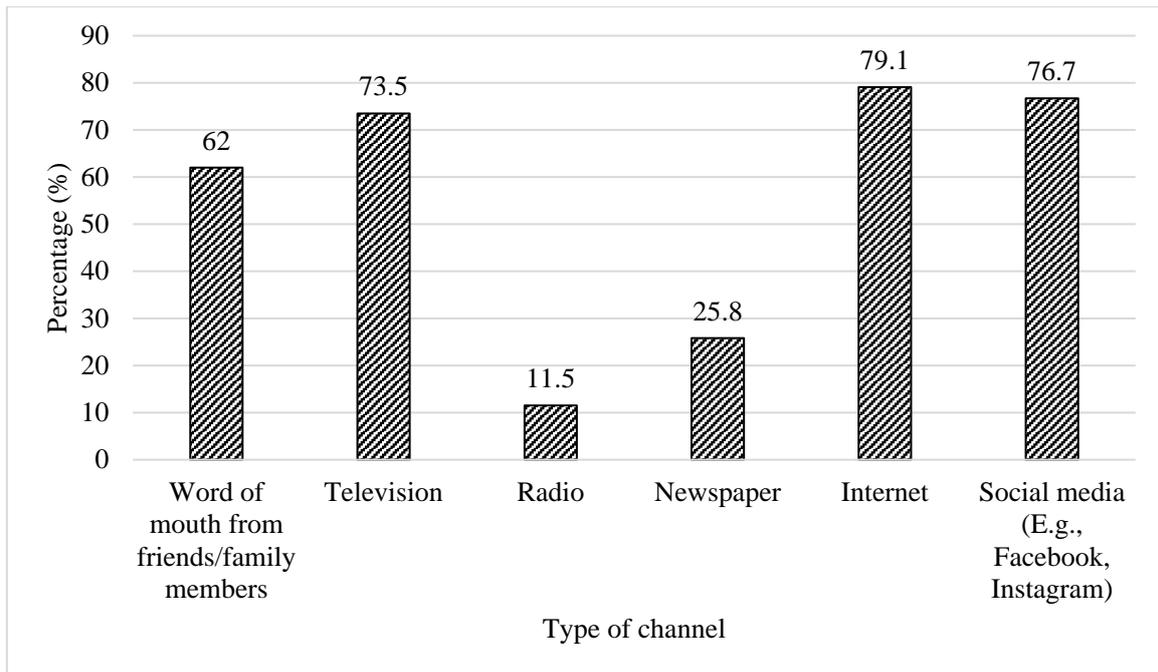
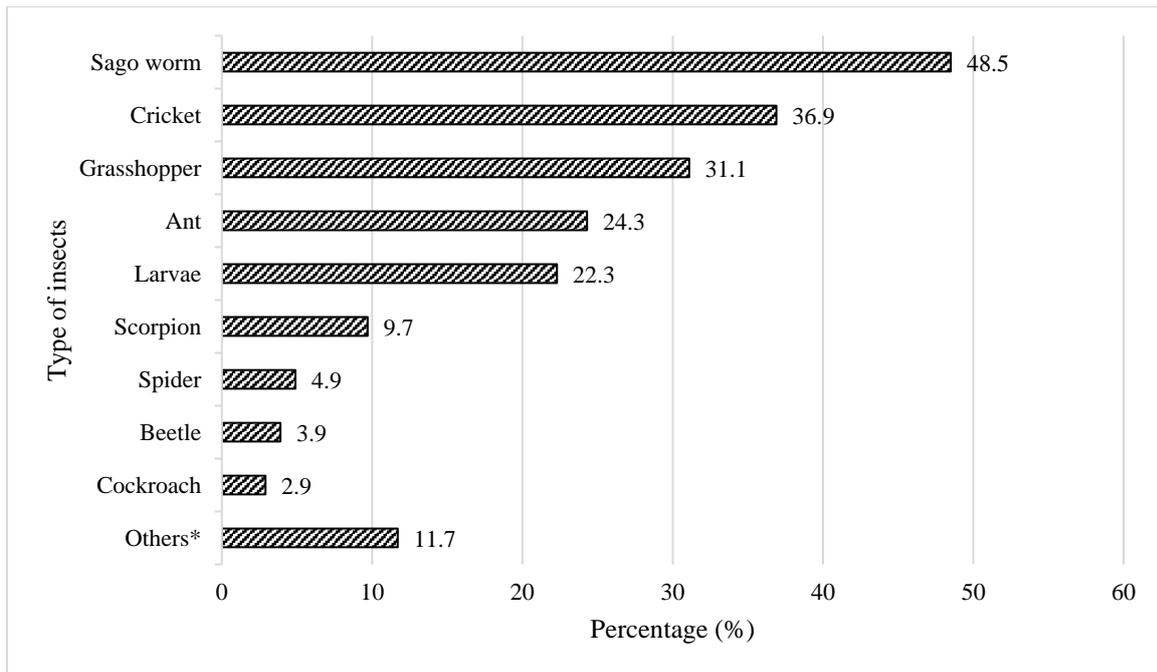
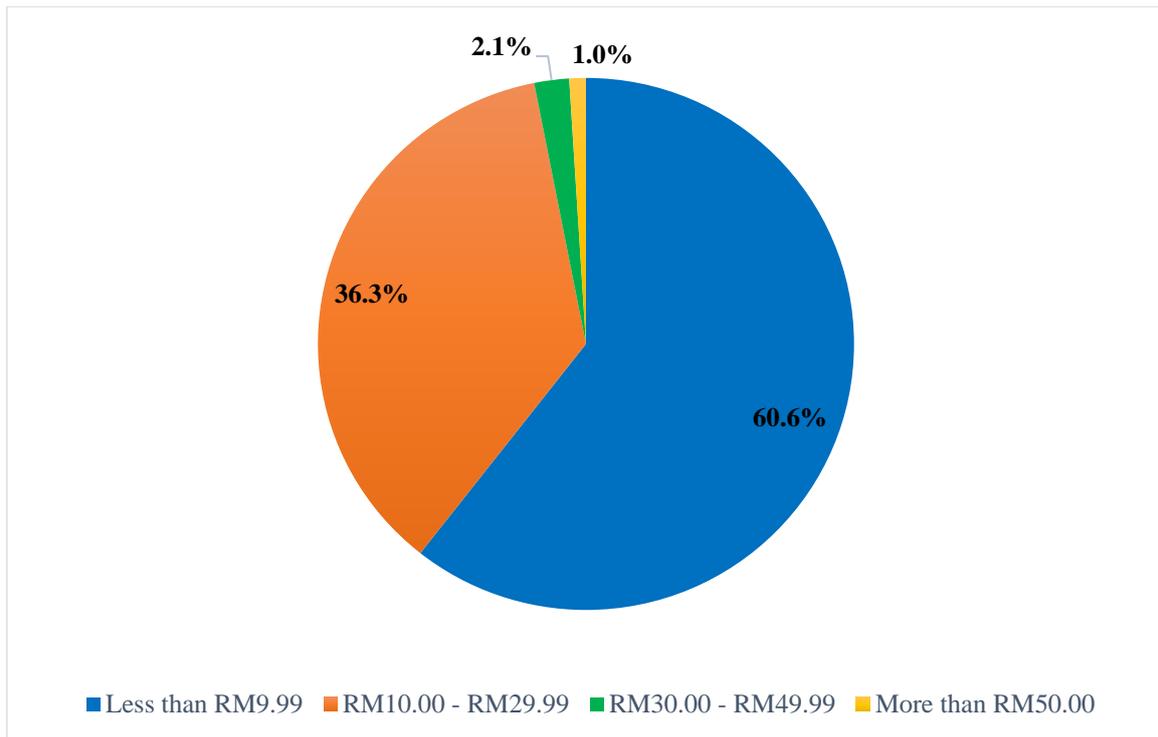


Figure S3: Type of insects consumed by non-Muslim respondents



*Mealworm, Silkworm, Bee and Black Soldier Fly

Figure S4: Reasonable price for 100g of grasshopper/insects



*RM, Malaysian Ringgit; 1USD = RM 4.481 as of 29 August 2022

Table S1: Acceptance of grasshoppers/other insects as food based on sociodemographic and socioeconomic characteristics

Sociodemographic Characterises	Will you accept eating grasshoppers/insects as food? n (%)								
	All (n=292)			Klang Valley (n=144)			Kuching (n=148)		
	Yes	No	<i>p</i> value	Yes	No	<i>p</i> value	Yes	No	<i>p</i> value
Sex									
Male	42 (45.2)	51 (54.8)	<i>p</i> <0.001	26 (53.1)	23 (46.9)	<i>p</i> <0.001	16 (36.4)	28 (63.6)	0.126
Female	46 (23.1)	153 (76.9)		21 (22.1)	74 (77.9)		25 (24.0)	79 (76.0)	
Age group									
18 – 29 years old	61 (26.6)	168 (73.4)	0.042	27 (27.3)	72 (72.7)	0.140	34 (26.2)	96 (73.8)	0.244
30 – 39 years old	18 (48.6)	19 (51.4)		15 (46.9)	17 (53.1)		3 (60.0)	2 (40.0)	
40 – 49 years old	7(38.9)	11(61.1)		4 (36.4)	7 (63.6)		3 (42.9)	4 (57.1)	
50 years old and above	2 (40.0)	6 (75.0)		1 (50.0)	1 (50.0)		1 (16.7)	5 (83.3)	
Religion									
Muslim	18 (27.3)	48 (72.7)	0.564	18 (32.1)	38 (67.9)	0.919	0 (0.0)	10 (100.0)	0.062
Non-Muslim	70 (31.0)	156 (69.0)		29 (33.0)	59 (67.0)		41 (29.7)	97 (70.3)	

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Sociodemographic Characterises	Will you accept eating grasshoppers/insects as food? n (%)								
	All (n=292)			Klang Valley (n=144)			Kuching (n=148)		
	Yes	No	<i>p</i> value	Yes	No	<i>p</i> value	Yes	No	<i>p</i> value
Highest education level									
Primary	0(0.0)	1(100.0)	0.562	0(0.0)	0(0.0)	0.568	0(0.0)	1(100.0)	0.695
Secondary	41(27.7)	107(72.3)		18(30.0)	42(70.0)		23(26.1)	65(73.9)	
Tertiary	47(32.9)	96(67.1)		29(34.5)	55(65.5)		18(30.5)	41(69.5)	
Occupation									
Government/Semi- government servant	11 (45.8)	13 (54.2)	0.014	8 (53.3)	7 (46.7)	0.046	3 (33.3)	6 (66.7)	0.221
Private worker	29 (41.4)	41 (58.6)		20 (44.4)	25 (55.6)		9 (36.0)	16 (64.0)	
Self-employed	3 (25.0)	9 (75.0)		1 (16.7)	5 (83.3)		2 (33.3)	4 (66.7)	
Unpaid worker/ Unemployed/Retired	3 (12.0)	22 (88.0)		3 (20.0)	12 (80.0)		0 (0.0)	10 (100.0)	
Students	42 (26.1)	119 (73.9)		15 (23.8)	48 (76.2)		27 (27.6)	71 (72.4)	

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Sociodemographic Characterises	Will you accept eating grasshoppers/insects as food? n (%)								
	All (n=292)			Klang Valley (n=144)			Kuching (n=148)		
	Yes	No	<i>p</i> value	Yes	No	<i>p</i> value	Yes	No	<i>p</i> value
Personal income¹									
RM 1799 and below*	41 (24.4)	127 (75.6)		15 (22.1)	53 (77.9)		26 (26.0)	74 (74.0)	
RM 1800 – RM 2600	7 (33.3)	14 (66.7)	0.010	4 (50.0)	4 (50.0)	0.052	3 (23.1)	10 (76.9)	0.060
RM 2601 – RM 5499	23 (47.9)	25 (52.1)		15 (42.9)	20 (57.1)		8 (61.5)	5 (38.5)	
RM 5500 and above	11 (42.3)	15 (57.7)		9 (42.9)	12 (67.4)		2 (40.0)	3 (60.0)	
Household income**2									
Less than RM 4860 (B40 group)	18 (19.1)	76 (80.9)		6 (20.0)	24 (80.0)		12 (18.8)	52 (81.3)	
RM 4860 – RM 10959 (M40 group)	36 (32.4)	75 (67.6)	0.057	20 (31.7)	43 (68.3)	0.240	16 (33.3)	32 (66.7)	0.245
More than RM 10960 (T20 group)	14 (35.0)	26 (72.2)		12 (40.0)	18 (60.0)		2 (24.6)	8 (75.4)	

¹Percentage of personal income were based on 263 respondents: Klang Valley 132 respondents; Kuching 131 respondents

²Percentage of household income were based on 245 respondents: Klang Valley: 123 respondents; Kuching: 122 respondents

*RM, Malaysian Ringgit; 1USD = RM 4.481 as of 29 August 2022

**Source: Household Income and Basic Amenities Survey Report 2019, Department of Statistics Malaysia

Significant difference was determined using Chi-square or Fisher Exact test

Table S2: Willingness to eat grasshoppers/other insects as food in daily life based on sociodemographic and socioeconomic characteristics

Sociodemographic Characterises	Are you willing to eat grasshoppers/insects as food in your daily life?								
	n (%)								
	All (n=292)			Klang Valley (n=144)			Kuching (n=148)		
	Yes	No	<i>p</i> value	Yes	No	<i>p</i> value	Ya	Tidak	<i>p</i> value
Sex									
Male	26 (28.0)	67 (72.0)	0.003	15 (30.6)	34 (69.4)	0.009	11 (25.0)	33 (75.0)	0.122
Female	27 (13.6)	172 (86.4)		12 (12.6)	83 (87.4)		15 (14.4)	89 (85.6)	
Age group									
18 – 29 years old	37 (16.2)	192 (83.8)		17 (17.2)	82 (82.8)		20 (15.4)	110 (84.6)	
30 – 39 years old	10 (27.0)	27 (73.0)		8 (25.0)	24 (75.0)		2 (40.0)	3 (60.0)	
40 – 49 years old	5 (27.8)	13 (72.2)	0.226	2 (18.2)	9 (81.8)	0.736	3 (42.9)	4 (57.1)	0.090
50 years old and above	1 (18.2)	7 (87.5)		0 (0.0)	2 (100.0)		1 (16.7)	5 (83.3)	
Religion									
Muslim	9 (13.6)	57 (86.4)	0.279	9 (16.1)	47 (83.9)	0.511	0 (0.0)	10 (100.0)	0.210
Non-Muslim	44 (19.5)	182 (80.5)		18 (20.5)	70 (79.5)		26 (18.8)	112 (81.2)	

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Are you willing to eat grasshoppers/insects as food in your daily life?									
n (%)									
Sociodemographic Characterises	All (n=292)			Klang Valley (n=144)			Kuching (n=148)		
	Yes	No	p value	Yes	No	p value	Yes	No	p value
Highest education level									
Primary	0(0.0)	1(100.0)	0.322	0(0.0)	0(0.0)	0.914	0(0.0)	1(100.0)	0.117
Secondary	22(14.9)	126(85.1)		11(18.3)	49(81.7)		11(12.5)	77(87.5)	
Tertiary	31(21.7)	112(78.3)		16(19.0)	68(81.0)		15(25.4)	44(74.6)	
Occupation									
Government/Semi-government servant	6 (25.0)	18 (75.0)	0.001	4 (26.7)	11 (73.3)	0.059	2 (22.2)	7 (77.8)	0.006
Private worker	22 (31.4)	48 (68.6)		13 (28.9)	32 (71.1)		9 (36.0)	16 (64.0)	
Self-employed	3 (25.0)	9 (75.0)		0 (0.0)	6 (100.0)		3 (50.0)	3 (50.0)	
Unpaid worker/ Unemployed/Retired	0 (0.0)	25 (100.0)		0 (0.0)	15 (100.0)		0 (0.0)	10 (100.0)	
Students	22 (13.7)	139 (86.3)		10 (15.9)	53 (84.1)		12 (12.2)	86 (87.8)	

To be continue...

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Sociodemographic Characterises	Are you willing to eat grasshoppers/insects as food in your daily life?								
	n (%)								
	All (n=292)			Klang Valley (n=144)			Kuching (n=148)		
	Yes	No	<i>p</i> value	Yes	No	<i>p</i> value	Yes	No	<i>p</i> value
Personal income¹									
RM 1799 and below*	23 (13.7)	145 (86.3)		9 (13.2)	59 (86.8)		14 (14.0)	86 (86.0)	
RM 1800 – RM 2600	4 (19.0)	17 (81.0)	0.028	1 (12.5)	7 (87.5)	0.357	3 (23.1)	10 (76.9)	0.016
RM 2601 – RM 5499	15 (31.3)	33 (68.8)		9 (25.7)	26 (74.3)		6 (46.2)	7 (53.8)	
RM 5500 and above	7 (26.9)	19 (73.1)		5 (23.9)	16 (76.2)		2 (40.0)	3 (60.0)	
Household income**²									
Less than RM 4860 (B40 group)	7 (7.4)	87 (92.6)		3 (10.0)	27 (90.0)		4 (6.3)	60 (93.8)	
RM 4860 – RM 10959 (M40 group)	20 (18.0)	91 (82.0)	0.008	10 (15.9)	53 (84.1)	0.215	10 (20.8)	38 (79.2)	0.016
More than RM 10960 (T20 group)	11 (27.5)	29 (72.5)		8 (26.7)	22 (73.3)		3 (30.0)	7 (70.0)	

¹Percentage of personal income were based on 263 respondents: Klang Valley 132 respondents; Kuching 131 respondents

²Percentage of household income were based on 245 respondents: Klang Valley: 123 respondents; Kuching: 122 respondents

*RM, Malaysian Ringgit; 1USD = RM 4.481 as of 29 August 2022

**Source: Household Income and Basic Amenities Survey Report 2019, Department of Statistics Malaysia

Significant difference was determined using Chi-square or Fisher Exact test

Table S3: Visual acceptability of respondents based on study location

Forms of grasshoppers/ insects ²	Mean Rank (n=292)			<i>p</i> value ¹
	All (n=292)	Klang Valley (n=144)	Kuching (n=148)	
Roasted grasshoppers/insects	2.64 ^a	2.59 ^a	2.68 ^a	0.380
Chocolate-coated grasshoppers/insects	2.18 ^b	2.18 ^b	2.18 ^b	0.460
Cooked meal containing grasshoppers/insects	2.40 ^c	2.43 ^c	2.39 ^c	0.254
Biscuit made with grasshopper/insects' flour	2.77 ^a	2.80 ^a	2.74 ^a	0.183
<i>p</i> value	<i>p</i> <0.001 ^{***}	<i>p</i> <0.001 ^{***}	<i>p</i> <0.001 ^{***}	

^{a,b,c}Different letters in a column indicate significant differences ($p < 0.05$) using Friedman test and Post Hoc Wilcoxon signed rank test

¹No significant different using Mann-Whitney U test

²Mean rank was reported