



Consumers' Perception and Purchase Intention Towards Local Food: A Case Study in Sulaimani City

Rebaz OSMAN*, Rezhen HARUN

Department of Agribusiness and Rural Development, College of Agricultural Engineering Sciences, University of Sulaimani, Sulaymaniyah City, 46001, Kurdistan Region, Iraq

* Corresponding author: R. Osman e-mail: rebaz.osman@univsul.edu.iq

RESEARCH ARTICLE

Abstract

Local food production in a short distance for consumers depends on a social structure and supply chain system. In simple terms, the local food system is all about producing and selling food within a particular area. Decisions by individuals, households, and society regarding the utilization and disposal of food, as well as efforts to share food with others, are influenced by various factors such as gender, age, and social dynamics. Additionally, actions aimed at fostering transformations in food environments are also taken into account in order to achieve these goals, a questionnaire-based was carried out in the Sulaimani City in KRG-Iraq. Data was collected from consumers who were participated by an online-google form. A total number of 469 questionnaires were validated. A principal component analysis was run, followed by cluster analysis. The results lead to 3 cluster solution: "local food consumers", "local agricultural supporters", "health concerned", being statistically significant different in terms of socio-demographic characteristics. The results are useful for future development policies of the local products.

Keywords: consumers' attitude, consumer behaviour, food system

INTRODUCTION

Local food as a term is a geographical and a political concept which refers to the distance between food producers and consumers. Also, the alternative system of food 'a banner under which people attempt to counteract trends of economic concentration, social disempowerment, and environmental degradation in the food and agricultural landscape' (Hinrich, 2003). Local food refers to food, that is grown or produced within a relatively close proximity to where it is directly consumed, it also depends on a social structure and supply chain that from the large-scale supermarket system (Waltz, 2011). According to United State Department of Agriculture (USDA) define the local and regional foods is a "food system where food is produced and sold within a certain geographical area" (Kumar and Smith, 2017). Moreover, several terms are synonymous or used interchangeably with 'local food' such as 'traditional food', or 'original food'. What is more, local food is often equated to such terms as 'traditional food' or 'regional food'. The latter term, though, has specific labeling (Coelho et al. 2018). However, local food is not well-known in terms of region or nationality, but the definitions based on "market arrangements, including direct-to-consumer arrangements such as regional farmers (Martinez et al. 2010), (Kwil et al, 2020). While scholars define that no consistent definition of 'local' exists terms like 'local food', 'local food system' and '(re)localization' are used almost interchangeably to refer to the concept of increasing reliance on foods produced near their point of consumption

Received: 20 February 2024

Accepted: 12 March 2024

Published: 15 May 2024

DOI:

10.15835/buasvmcn-hort:2024.0005



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relative to the modern food system (Bellows and Hamm, 2001), (Edward et al. 2008). United States of America (USA) defined 'local' being a product produced within 100 miles or within their home state. A recent survey, the U.S. Congress in the 2008 Act (Farm Bill, 2008) in Food, Conservation, and Energy that the total distance a product can be transported and still be considered a "locally or regionally produced agricultural food product" is less than 400 miles from its origin, or that it has to remain within the State in which it is produced. Concurrently, the UK National Farmers Retail and Markets Association (FARMA) has transformed the 30-mile radius definition into a comprehensive set of certification criteria for farmers' markets, the central aim is to safeguard their integrity. While 30 miles is considered the ideal radius, this criterion may be altered to 50 miles for larger cities, coastal areas, or remote regions, with 100 miles as the maximum recommended distance (Graeme, 2012). These alleged advantages cover all three dimensions of sustainability and carbon print, including reducing the energy expended in food transportation foods and to be better tasting with nutrients (Kloppenburger et al. 1996), (Dye, 1999), (Pirog et al. 2001), (Halweil, 2002), (Peters et al. 2009). In contrast, organic food is no legal or universally accepted definition of local food (Martinez et al. 2010). In the government of Canada define and recognize the local food is "food produced in the province or territory in which it is sold, or food sold across provincial borders within 50 km of the originating province or territory" (Enthoven and Van den Broeck, 2021).

Consumer behavior

Consumer behaviors are shaped by their attitudes, which in turn are influenced by various factors, spanning from personal beliefs to political frameworks (Feldman and Hamm, 2014). Self-congruity positively impacts consumers' attitudes toward purchasing local foods (Ho Shen, 2014). Consumers' decisions made by (individual, household, and societal levels to use and dispose of food and feed others, with the consideration of gender, age, and social factors; as well as actions to promote changes in their food environments (FAO, 2020). Consumers, who prefer organic food produced in their region of residence, tend to exhibit characteristics more aligned with reflexive localism compared to other consumers (Czudec, 2022). Food system outcomes, guided by the principle of the right to food and influenced by food policy and governance, are likely to endorse the six dimensions of food security, particularly in their recognition of how drivers of food system change affect these systems. It is influenced by personal preferences and shaped by the existing food environment (HLPE. 2020). Local food systems are identifying consumers' Willingness to Pay (WTP) where locally food produced their products, is one of the important components of developing, even traditional factors such as eating quality, food safety, and health benefits continue to be important. In contrast, perceptions of the impact of buying behavior on affecting those issues is a more complex aspect of consumer behavior (Onozaka et al. 2010; Burnett et al. 2011). Theory of consumer behaviour has contributed to the last years is Alphabet theory, which states that consumers' attitudes about (local) food determine their purchasing behaviour and proved that local foods better serve the society (Lemmans, 2019), (Adams and Saloes, 2010). This research, which examines the difficulties facing agriculture in general and local food, aims to indicate topics for further research and give light on potential challenges. Additionally, in the research area use consumer intent, behavior, attitudes, and perceptions of local food to design the management of the local food system. It aims to identify and define the term local food in the state by area, to see the perception and consumers' knowledge in the study area (Figure 1), Also, to answer our research questions, we first develop a set of hypotheses:

- **Hypothesis 1.** In the city of Sulaimani, various significant factors influence consumer behaviour when it comes to purchasing local foods, these factors are cultural and demographic characteristics.
- **Hypothesis 2.** The variables that have a substantial impact on a consumer's attitude towards buying local food products are: motivation, emotions, and feelings. In the city of Sulaimani, a high degree of environmental and health knowledge will lead to a favourable attitude towards local food.

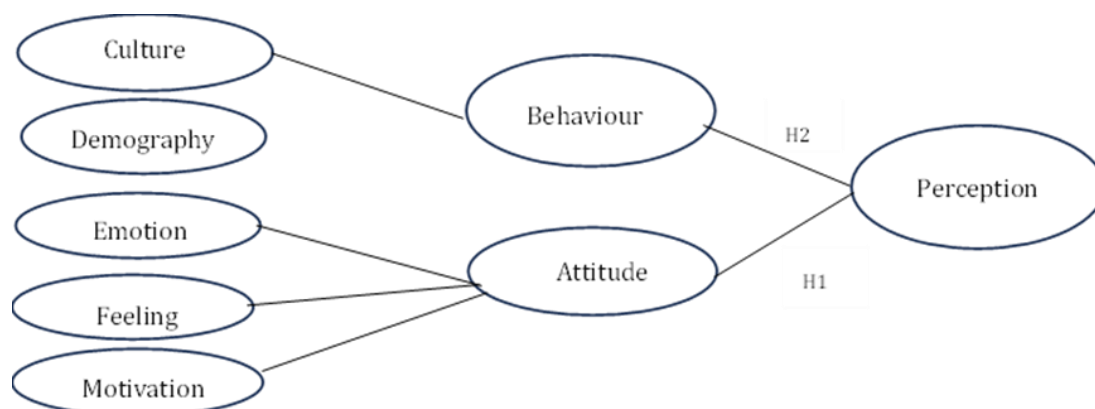


Figure 1. Conceptual model

MATERIALS AND METHODS

Research Area

Geographically, The Sulaimani Governorate is situated in the eastern region of Iraq's Kurdistan Region (Figure 2), close to the Iranian border in Northern Iraq. (Neima and Hassan, 2020; Harun et al. 2015a). The geographical coordinates of the predestined governorate are 35°33'40" N and 45°26'14" E. (Neima et al. 2021; Hama Radha et al. 2021; Harun et al. 2015b). Sulaimani City consists of the city center with Tanjaro and Bakrajo as sub-districts, also Tanjaro consisted of 29 villages and Bakrajo with 47 villages. According to the records of the Sulaimani Statistics Directorate information, there were 856,990 inhabitants living in 2016, of the Sulaimani city as well as surrounding areas, such as Bakrajo, Raparin, and Tasluja (Alkaradaghi et al. 2019; Qaradaghy, 2015). The metro area population of Sulaimani in 2023 was 801,000 that increased by 2.82% compared with 2022. The current metro area population of Sulaimani in 2024 is 823,000, a 2.75% increase from 2023 (Sulaimaniya Iraq Metro Area Population 1950-2024, 2024).

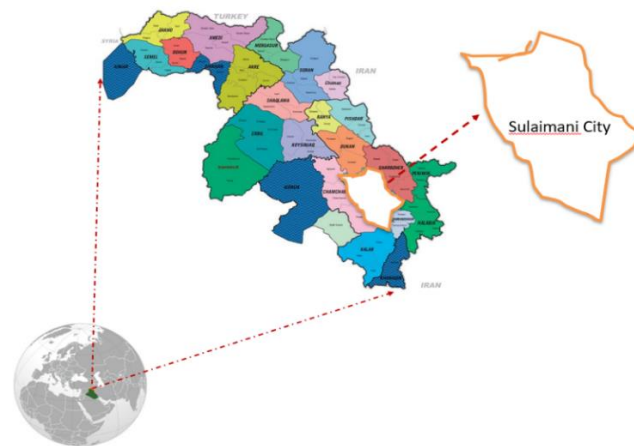


Figure 2. Location of the study area in Sulaimani city center, Kurdistan Region of Iraq.

Source: adapted from Harun (2014)

Data collection and analysis methods

In July–September 2023, a quantitative survey was conducted to fulfil the study objectives. The formula below was used to obtain the sample size. There was a 5% relative error and 95% confidence interval.

$$n = \frac{z^2 p(1-p)N}{e^2 N + z^2 p(1-p)} = \frac{(1,96)^2 * 0.05(1-0.05)823,000}{(0.05)^2 * 823,000 + (1,96)^2 * 0.05(1-0.05)} = 384 \text{ Respondents}$$

A total number of 563 on-line questionnaires were collected, in the end being validated 469 questionnaires, with a response rate of 83.30%. Respondents who were 18 years or older, were asked to consider local food as food grown, produced, processed, or sold within the same city or governorate. The research instrument consisted into three main parts: (i) the first part collected information about the socio-demographic characteristics, (ii) factors affecting food products purchasing, and (iii) the third part related to the attributes that influence consumer food choices and food consumption styles, food choices, styles, and purchase behavior toward local foods (definition and labeling information) adapted from Muresan et al. (2021). For the second part and third part the items were evaluated on a 5-point Likert scale type, where 1 means strongly disagree, and 5 means strongly agree.

Descriptive statistical analysis was used to analyze the socio-demographic characteristics of the consumers and to indicate the means and standard deviations of each of the variables used to identify the perception of respondents towards local food. Principal component analysis with Varimax rotation was used to reduce the dimensionality of the 19 items used to evaluate the perception of the respondents towards local products. In the end were retrained 16 items with factor loadings above 0.5 (Hair, 2012). To determine the reliability of the scale, the Cronbach's alpha reliability coefficient was employed for all the items, and for each factor. The reliability coefficient above 0.6 was acceptable for all factors in this study (Tabachinick and Fidell, 1989; Burgess and Steenkamp, 2006). Even more, a cluster analysis was carried out to identify and explore common characteristics among various groupings within the sample. Both hierarchical and non-hierarchical clustering algorithms were used to identify the groupings (Kaiser, 1974). One-way ANOVA, Tukey HSD multiple comparison test and Pearson's χ^2 were used to determine if there are differences between clusters regarding the factors affecting perception of local foods and socio-demographic profile.

RESULTS AND DISCUSSIONS

Socio-demographic profile of the respondents

The analysis of the respondent's profile revealed that 55.4% were male, while 45.6% were female. In terms of age was noticed that the majority (60.9%) are less than 37 years old, while 56.7% have at least a bachelor's degree, with medium income. It can be concluded that the respondents were in general young, educated people and with families Table 1.

Table 1. Socio-demographic characteristics of the respondents

Characteristics	Variable	Number of Respondents (N=469)	Percent of Respondents
Gender	Male	260	55.4%
	Female	209	45.6%
Age (years)	18-27	148	31.5%
	28-37	138	29.4%
	38-47	69	14.6%
	48-57	73	15.5%
	58-67	33	7.0%
	68-77	8	1.7%
Education Level	Reading, Writing	51	10.9%
	Primary	43	9.2%
	Secondary	9	1.9%
	Preparatory Institute	35	7.5%
	Diploma	65	13.9%
	BSc., BA.	145	30.9%
	MSc., MA.	105	22.4%
PhD.	16	3.4%	
Marital Status	Single	165	35.2%
	Married	304	64.8%
Income	Very low	3	0.6%
	low	17	3.6%
	Medium	262	55.9%
	Good	166	35.4%
	Very good	21	4.5%

Consumers attitudes towards to food products

Principal factor analysis was used to evaluate the dimensionality of the 16 items. The Barlett test of Sphericity was significant (Chi-square = 2493.291, $p < 0.000$). The Kaiser–Meyer–Olkin (KMO) with an overall sample measure of 0.845, indicating the data were appropriate for the principal component analysis (Ding and He, 2004). Cronbach's alpha reliability coefficient was calculated to assess the internal consistency of every component. The overall reliability number of the 16 variables was 0.804. The principal component analysis led to a four factors solution, explaining 59.53% of the variance, with a value of Cronbach's alpha reliability of 0.8, Table 2.

The first component was named "local foods' perception" (3.90 ± 0.759) comprises of 5 items and explains 26.06% of the variance. It was noticed that the respondents agreed that local products are testier than other products (4.46 ± 0.734) and healthier (4.28 ± 0.893), with higher quality (3.75 ± 0.976) but they were more neutral regarding the use of herbicides and pesticides for growing local vegetables and fruits (3.33 ± 1.157). The second component "quality attributes" (4.42 ± 0.519) grouped 5 items and explained 15.66% of the variance. For the consumers is very important that the food products to be safe (4.75 ± 0.555), fresh (4.57 ± 0.634) and original (4.41 ± 0.789). These aspects indicate that the consumers are concerned about the quality and source of their food. Furthermore, the third factor "support for local producers" (4.40 ± 0.624) sustains the idea regarding the consumers' attitude for foods' quality. Consumers agree that buying local foods leads to development of the agricultural areas (4.43 ± 0.708) and the farms (4.60 ± 0.620), which in the end lead to the rise of the economic level of the local area. The fourth factor "extrinsic attributes" (3.50 ± 0.710) explains 6.63% of the total variance. It could be noticed that for the consumers the price of the products is an important factor in the decision-making process of buying food products (3.65 ± 1.054). Also, it is more important for the consumers that the product to be a convenient one (3.83 ± 0.997), rather than a traditional one (3.03 ± 1.129).

Table 2. Principal component analysis results

Factors	Items	Factor loading	Mean±SD
Local foods' perception 3.90±0.759 EV=4.65 Variance=26.06% α=0.676	Local foods healthier	0.811	4.28±0.893
	Local foods pollute less the environment	0.757	3.74±1.019
	Local foods grow naturally (with less used of herbicides and pesticides)	0.747	3.33±1.157
	Local foods have higher quality	0.742	3.75±0.976
	Local foods tastier than others	0.632	4.46±0.734
Quality attributes 4.42±0.519 EV=2.50 Variance=15.66% α=0.702	Freshness of the products	0.710	4.57±0.634
	Ingredient value	0.685	4.35±0.815
	Environmentally friendly	0.657	4.17±0.925
	Safe products	0.621	4.75±0.555
	Originality of the product	0.567	4.41±0.789
Support for local producers. 4.40±0.624 EV=1.307 Variance=8.16% α=0.766	Buying locally produced food supports farmers	0.778	4.60±0.620
	Agricultural areas are supported by consuming locally produced food	0.757	4.43±0.708
	Purchasing food that was grown locally cuts down on production-related distance, which affects quality	0.718	4.20±0.914
Extrinsic attributes 3.50±0.710 EV=1.06 Variance=6.63% α=0.602	Price of the food product	0.717	3.65±1.054
	Convenience	0.569	3.83±0.997
	Traditionally produced	0.534	3.03±1.129

Note: EV=eigenvalue, α= Cronbach's alpha reliability coefficient, SD=standard deviation

Consumers' cluster analysis

Subsequently cluster analysis was run based on the four factors from the principal component analysis led to three clusters of consumers, Table 3. Cluster 1 labeled "local food consumers" groups 107 consumers, representing 22.8% of the total respondents, Table 4. This cluster is mainly represented by male (83.2%), over 48 years old, and less educated. Even though they are more knowledgeable regarding the environment, the majority male group is thought by scholars to be less interested in preserving it (Diamantopoulos et al. 2003; Davidson and Freudenburg 1996). Cluster 2 "local agricultural supporters" groups 102 consumers (21.7%) and is mainly represented by educated (over 67% have at least bachelor's degree) young (78.4% are less than 38 years old) male respondents (55.9%). The third cluster "health concerned" consumers is the largest group with 260 respondents, representing 54.5% of total respondents. This group is mainly represented by educated young (almost 74% are having less than 38 years old) female (56.2%). The differences between socio-demographic profile of the members of the three clusters are statistically significant different ($p < 0.05$).

Table 3. Final cluster centers

	Cluster		
	1	2	3
Factor 1	0.49298	-0.80179	0.11167
Factor 2	-0.33373	-1.12139	0.57727
Factor 3	-0.93736	0.49318	0.19228
Factor 4	-0.99895	0.13545	0.35797

Table 4. Clusters' socio-demographic characteristics

Characteristics	Variable	Cluster 1 (N=107, 22.8%)	Cluster 2 (N=102, 21.7%)	Cluster 3 (N=260, 54.5%)	Chi-square	P value
Gender	Male	89 (83.2%)	57 (55.9%)	114 (43.8%)	$\chi^2=47.478$, df. = 1	<i>p</i> <0.05
	Female	18 (16.8%)	45 (44.1%)	146 (56.2%)		
Age (years)	18-27	8 (7.5%)	44 (43.1%)	96 (36.9%)	$\chi^2=228.295$ df. = 10	<i>p</i> <0.05
	28-37	6 (5.6%)	36 (35.3%)	96 (36.9%)		
	38-47	11 (10.3%)	7 (6.9%)	51 (19.6%)		
	48-57	51 (47.7%)	8 (7.8%)	14 (5.4%)		
	58-67	26 (24.3%)	4 (3.9%)	3 (1.2%)		
	68-77	5 (4.6%)	3 (3.0%)	0		
Education Level	Reading, Writing	43 (40.2%)	7 (6.9%)	1 (0.4%)	$\chi^2=306.457$ df. = 14	<i>p</i> <0.05
	Primary	40 (37.4%)	2 (2.0%)	1 (0.4%)		
	Secondary	4 (3.7%)	2 (2.0%)	3 (1.2%)		
	Preparatory	1 (0.9%)	12 (11.8%)	22 (8.5%)		
	Institute Diploma	5 (4.7%)	10 (9.8%)	50 (19.2%)		
	BSc., BA.	6 (5.6%)	42 (41.2%)	97 (37.3%)		
	MSc., MA.	6 (5.6%)	24 (23.5%)	75 (28.8%)		
	PhD.	2 (1.9%)	3 (2.9%)	11 (4.2%)		
Marital Status	Single	8 (7.5%)	43 (42.2%)	114 (43.8%)	$\chi^2=46.751$ df. = 2	<i>p</i> <0.05
	Married	99 (92.5%)	59 (57.8%)	146 (56.2%)		
Income	Very low	0	2 (2.0%)	1 (0.4%)	$\chi^2=30.410$ df. = 8	<i>p</i> <0.05
	low	8 (7.5%)	3 (2.9%)	6 (2.3%)		
	Medium	76 (71.0%)	50 (49.0%)	136 (52.3%)		
	Good	22 (20.6%)	44 (43.1%)	100 (38.5%)		
	Very good	1 (0.9%)	3 (2.9%)	17 (6.5%)		

Furthermore, the perception of the three clusters regarding the principal analysis factors was analyzed. The results indicated that there are statistically significant differences between the means of the factors and the three analyzed clusters, except the first factor was not statistically significant difference between the first and third cluster (*p*>0.05), Table 5.

Table 5. Comparative analysis among clusters

Factor	Cluster 1	Cluster 2	Cluster 3
Factor 1	4.09±0.644 ^a	3.32±0.691 ^b	4.06±0.689 ^a
Factor 2	4.16±0.362 ^b	3.89±0.503 ^c	4.79±0.230 ^a
Factor 3	3.83±0.615 ^c	4.42±0.620 ^b	4.65±0.462 ^a
Factor 4	2.77±0.551 ^c	3.48±0.572 ^b	3.84±0.568 ^a

Note: Different letters denote significant differences (Tukey HSD multiple comparison test)

The study's findings, which utilised Sulaimani City as a case study to determine inhabitants' perceptions of local food consumers and purchases, showed that people had a favourable opinion regarding sustainable local food consumption. However, like in earlier research (Batziakas et al. 2019), a discrepancy between perceptions and actual behaviours was observed (Kantono et al. 2021). While acknowledging the value of locally produced agriculture, respondents indicated enthusiasm for local producers despite expressing concern about their ability to intervene to encourage the purchase and consumption of healthful food in their district (Brown et al. 2019).

Nevertheless, the study illustrates those individuals' purchasing habits were significantly different when it came to supporting local farmers and purchasing food products that are produced locally, despite the fact that their perception of sustainable local food choices was positive (Oroian et al. 2017). When considering a purchasing decision, customers are unlikely to be able to figure out whether the local food that is conveniently available to them is less harmful to the environment than non-local options (Edwards-Jones, 2010; Hampel and Hamm, 2016).

Whenever taken into account, these results improve the understanding of the local food features that should be emphasised in communications in order to promote the consumption of local food (Carfora and Catellani, 2023).

CONCLUSIONS

Currently, local foods are preferred among consumers, and are highly viewed as a genuine alternative for imported

food. Consumers are aware of the purchase and the consumption of local food products. The findings of the present study indicate that consumers of local food products are highly educated individuals, holding certificates from institutes and universities, aged between 18 and 57 years old. These consumers exhibit awareness regarding the impact of their culture, demographics, motivations, and emotions on their health. Several factors seem to contribute to the development of this awareness, among them are the naturalness and freshness of the local foods. The increased consumer interest in local food products was attributed to the growing demand for traditional processing, free of chemicals (herbicide and pesticide), high content and natural ingredients. These indicate that consumers are more aware of their healthy food condition. This is an indicator to start the path for making new policy for local food products to develop new market strategies to increase production from farmers and provide local food to consumers. Moreover, the findings of the current study reveal that respondents perceive traditional agricultural and processing methods as being responsible for the production of local foods. The study's results are noteworthy in part because it provides explicit, valuable information about Sulaimani City's local food product consumers. This information can be used by decision-makers to inform their development strategies and create short value chains that will support local products and small farms. The factors responsible for determining local food purchasing were found to be statistically significant across all three groups, indicating consistency in the importance of these factors among the analyzed clusters. At the same time, those producers and sellers are dealing with local products, it is important to know the perception of their consumers and their preferences to enlarge and maintenance their projects, thus it will lead to an increase of the economic efficiency to the producers.

Author Contributions: R.O. gathered information and wrote the manuscript paper. R.H. supervise the research process, analyzed the data and revised the manuscript.

Funding Source: Funding for this study was not obtained.

Conflicts of Interest

There are no conflicts of interest that the study's researchers have acknowledged.

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