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Consumers Choice and Preference for Chicken Meat in Sulaymaniyah

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Abstract

Chicken meat consumption and demand have significantly increased in the Kurdistan Region of Iraq (KRI) after 2003, which has led to the growth of poultry production and risen import from abroad. Consumer preferences study can be a determinant factor for poultry production development strategies to fill local demand gaps and global market competition. This study aimed to identify the consumer preference of chicken meat regarding the type, size, parts, marketplace, and other vital aspects considered by consumers when buying chicken meat, and the internal and external factors that affect consumer preference in the chicken meat purchasing choice. A descriptive study was conducted in Sulaymaniyah city, and the data were collected through a structured questionnaire form. This study indicated that 47.7% of the respondents prefer local Kurdish chicken (Mrishki Kurdi). 50% of the consumers in the Sulaymaniyah city prefer to buy whole chicken weighed between (2-3 Kg), 35.4% at the nearest or trusted meat shop, 38.5% at the wet markets, and 69.3% alive chicken slaughtered at the wet market at the time of purchase. Additionally, the internal factors (sensory features and perceptual features) were more dominant (sum total = 4.084) than External factors (information, social environment, and physical environment) (sum total = 3.599). Conclusions derived from the results suggest that the current study can contribute to a better understanding of consumers and improve the agribusiness value chain in KRI. The results from this study are recommended to examine consumer behavior and preference for agri-foods to build an integrated sustainable food production system based on consumers' needs and demands in the KRI and compete with the imported products.

Keywords: Consumer preference, Chicken meat consumption, Food choice, Agribusiness, Sulaymaniyah city.

1. Introduction

The increase in demand for proteins from animal sources in consumer diets is related to urbanization growth, living standards, diet, livestock production growth, and consumer prices. The affordability contributed to making poultry meat of choice for consumers worldwide, especially in developing countries [1,2]. Chicken meat and chicken products are globally popular, which can be explained by the fact that quality chicken products are available at affordable prices, although their production costs may vary [3-5]. Poultry products and mainly chicken products are primarily consumed in Iraq and the Kurdistan Region of Iraq (KRI). The poultry meat consumption and demand have significantly increased in Iraq in the last two decades [6,7]. This increase in poultry meat demand has started after the economy booming in the region after 2003, which left a big gap between demand and local agricultural production and led to an increase in food imports from abroad [8]. According to Kurdistan Region Statistics Office (KRSO), Poultry production Projects and mainly broiler chicken production has grown significantly during the last two decades. 1544 projects were recorded with a capacity of producing 23,055,245 chicken/year in 2019 [9]. This increment is associated with the rise in demand for poultry products in the KRI and other parts of Iraq, besides the increase in chicken meat import from abroad, which may affect the continuity of the growth in the sector [10]. The rise in food imports has led to familiarizing the local consumers with the international standards of food product quality, safety, and food packaging. These changes must have affected the consumer behavior and preference in the KRI. Although chicken meat is highly consumed in the KRI, consumer purchase and consumption demands have not been quantified yet. There are a few studies conducted regarding consumer behavior and choice for agri-food consumption in the KRI [11,12]. Understanding consumer purchase and consumption demands offer necessary scopes for marketers to effectively target how they position their products and services in relevant market segments. That is critical for the enhanced functioning of commodity value chains by establishing and maintaining exchange relationships that satisfy consumer needs [13]. Consumer preferences study for chicken meat is a determinant factor for poultry production development strategies to fill local demand gaps and global market competition. This research will provide vital information regarding this issue by quantifying the preference of chicken meat by the residence of Sulaymaniyah city in the KRI. This study investigates the consumer preference and request for chicken meat regarding the variety, size, color, and taste of chicken meats; and some other vital aspects considered by consumers when buying chicken meat.



2. Materials and Methods

2.1. Study Area

This research study was conducted in the Sulaymaniyah city, Kurdistan Region of Iraq (Figure 1). The population of Sulaymaniyah governorate is estimated (2,039,685) people and Sulaymaniyah city urban population estimated (829,245) in 2015 according to Sulaymaniyah governorate official website [14], and according to other sources, it was estimated about 898.242 people in 2018 [15], which is expected that the population of KRI and mainly urban population has increased until the time of this study and in the near future [16,17]. Sulaymaniyah city is given a cultural capital city in the Kurdistan region of Iraq and has also been listed as a creative city of literature by UNESCO since 2019 [18].

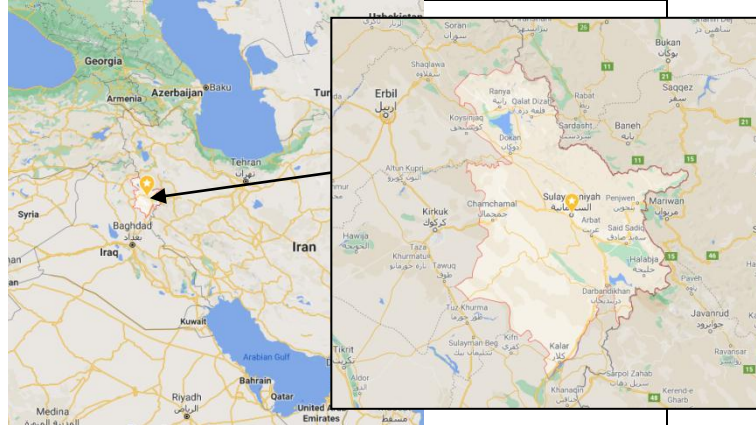


Figure 1. Map of Sulaymaniyah Governorate (Source: Google Map; Coordination 35.5558° N, 45.4351° E).

2.2. Sampling and Data Collection

A descriptive research design was applied in this study. Data collection took place between November 2020 to January 2021. A structured questionnaire was used to collect data either through distributing printed questionnaire form and google form online. Based on the population size of Sulaymaniyah city, a total of 400 individuals representing their families were randomly sampled and interviewed from different quarters of Sulaymaniyah city to understand their choice and preference for chicken meat as consumers. In the end, 15 forms were removed due to inappropriately answered, and 385 were found usable, which is at an acceptable range of minimum sample size 384 for the studied population of Sulaymaniyah City that estimated about 900,000 people.

Cochran's sample size formula [19], was used to determine the minimum sample size for this study (with Confidential level 95%, z score 1.96, population proportion, z score 1.96, 50%, and margin of error 0.05) [20].

In this study, the respondents were asked to fill out a questionnaire indicating their preference for chicken meat and the reasons behind its consumption. The questionnaire was mainly divided into two major parts: the first part was to investigate the socio-demographic and socio-economic characteristics of the respondents; the second part was to reveal the food - internal factors [Sensory features (flavor, taste, smell, and texture) and perceptual features (color, portion size, nutrition, and health value, and quality)]; and Food-External Factors [Information (nutritional labels, health claims, packaging, aesthetics, and ethics of production history, brand, advertisement); Social environment (intrapersonal factor and social norms from family, peers, and media including ethical concern, social context when food choice is made); and Physical environment (availability and accessibility of food products, retail food environments, time).] [21,22], using a 5-points Likert scale, where (1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, and 5= Strongly Agree).

The reliability of data regarding the studied internal and external factors was analyzed by using Cronbach's Alpha (0.821) which indicates an acceptable and good level of reliability (See table 1).

Table 1. Reliability of Data by using Cronbach's Alpha

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.825	0.840	19

2.3. Data Analysis

The collected data in this study were analyzed using a statistical package for social sciences (SPSS ver. 20.0). Descriptive analysis was used to test the significance of consumer preference in relation to socio-demographic and socio-economic characteristics. An ANOVA test of 5-point Likert scale indicator dependency was applied to test relationships between categorical variables.

3. Results

3.1. Socio-demographic profile of respondents

Table (2) shows the studied socio-demographic and socio-economic characteristics of the respondents. The respondents were 55.2% male and 44.8% female, aged between 18 to 65 and over; mostly, 51.3.8% between 26 to 35 years old. The respondents were mostly educated. Most of the respondents were holding a bachelor's degree (50.2%), working at public sectors 71.5%. that income between 500,001 to 1,000,000 Iraqi Dinar.

Table 2. Socio-demographic and socio-economic profile of respondents.

Variables	Category	Frequency	Percent
Gender	Male	213	55.2
	Female	172	44.8
	Total	385	100
Age (Year)	18-25	54	14.1
	26-35	197	51.3
	36-45	92	23.8
	46-55	24	6.1
	56-65	15	4.0
	Over 65	3	0.7
	Total	385	100
Marital status	Married	259	67.1
	Single	118	30.7
	Others	8	2.2
	Total	385	100
Educational Background	Illiterate	1	0.4
	Read and Write only	4	1.1
	Primary School	13	3.2
	Secondary school	14	3.6
	High school	33	8.7
	Diploma	40	10.5
	Bachelor Degree	193	50.2
	Postgraduate Degree	86	22.4
Total	385	100	
Occupation	Student	8	2.0
	Public Sector	275	71.5
	Private Sector	28	7.2
	Self-employed	46	11.9
	Retired	4	1.1
	Unemployed	24	6.1
Total	385	100	
Monthly Income (IQD)*	less than 250,000	25	6.5
	251,000-500,000	46	11.9
	501,000-1,000,000	168	43.7
	1,001,000-1,500,000	90	23.5
	1,501,000-2,000,000	28	7.2
	2,001,000-2,500,000	13	3.2
	2,501,000-3,000,000	10	2.5
	More than 3,000,000	6	1.4
Total	385	100	

*IQD = Iraqi Dinar

3.2. Chicken meat choice and preference

Figure (2) illustrates that half of the respondents (50%) preferred the large size (2-3 Kg) and 30.7% medium-sized between (1-2kg) for a whole chicken carcass, while the lowest percentage (2.7%) of respondents preferred small size (less than 1Kg). Additionally, 16.7% of the respondent preferred whole chicken weighed over 3 Kg.

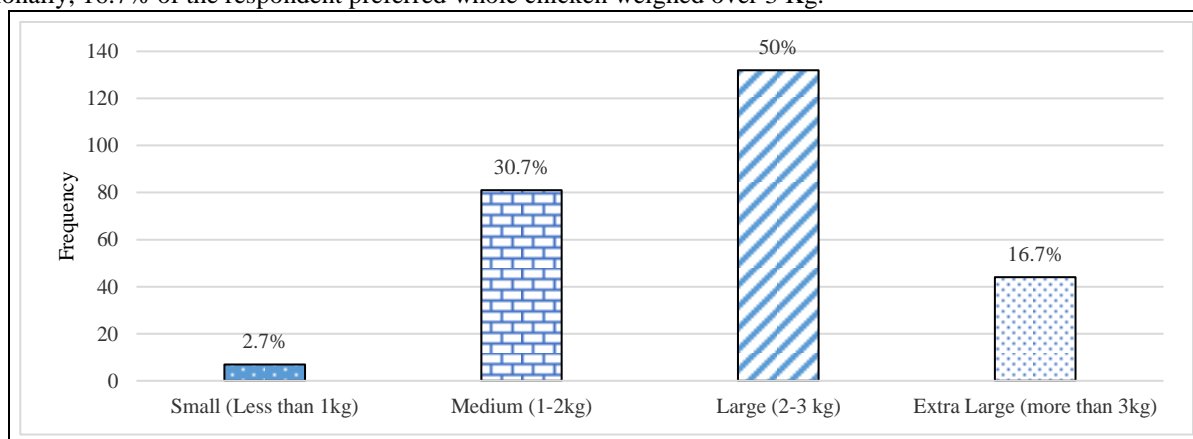


Figure 2. Preferred whole chicken carcass weight among the respondents.

Data shown in table (3) are based on multiple answer questions. It was found that Local Kurdish chicken (Mrishki Kurdi) is the most preferred type (47.7%) for its succulent meat. Then white broiler came at the second rank (36.3%) while red broiler chicken (13.5%) and other types (2.5%) came preferred by least respondents.

Regarding the place to buy chicken meat, most respondents prefer to purchase chicken at Wet markets, a shop where alive chicken is sold and slaughtered, either at a trusted wet market (38.7%) or the nearest wet markets (35.2%). The respondents less preferred other places such as supermarkets, vendors, directly from producers. Overall, the percent of respondents in Sulaymaniyah city that prefer to buy chicken meat freshly slaughtered on-site at the wet markets was (69.2%) while only (9.9%) buy frozen whole chicken.

Among the preferred chicken part to eat, chicken breast (31.0%) was the most preferred, followed by thigh (21.2%) than other parts, while chicken feet were less preferred (8.7%) and were mostly left at the wet market shops.

Table 3. Multiple choice answers on chicken meat choice and preference.

Categories	Variables	Responses		Percent of Cases
		Frequency	Percent	
Preferred Type of Chicken	Local chicken (Mrishki Kurdi) ¹	226	47.7%	58.7%
	White broiler	172	36.3%	44.7%
	Red Chicken broiler	64	13.5%	16.7%
	Others	12	2.5%	3.0%
	Total	474	100.0%	123.1% *
Preferred Purchasing Location	A Nearest wet market ²	163	35.2%	42.3%
	A Trusted chicken shop (Wet market)	179	38.7%	46.5%
	The Nearest market	35	7.6%	9.1%
	Bazar	16	3.5%	4.2%
	Supermarkets and Hypermarkets	40	8.6%	10.4%
	Mobile Vendors (in front of house)	3	0.6%	0.8%
	Street Vendors	12	2.6%	3.1%
	Directly from Poultry farm house	4	0.9%	1.0%
	Cheapest price offer places	6	1.3%	1.6%
Directly from Villages	3	0.6%	0.8%	
Others	2	0.4%	0.5%	
Total	431	100.0%	120.3% *	

* The total percentages of cases of more than 100% are Multiple Responses.

¹Local chicken is called Kurdish chicken or (Mrishki Kurdi) in the Kurdish Language, which is adapted to the harsh environmental condition of the Kurdistan Region of Iraq and reared in a free-range system by rural households or urban farms.

² A wet market is a shop where alive chicken is sold and slaughtered on-site.

The results in Table (4) show that internal factors are more dominant (sum total= 4.084) than external factors (sum total mean= 3.599). Among the internal factor variables, sensory features were more predominant (total mean= 4.219) compared to perceptual features (total mean =3.949). Information (total mean=3.802 was an overriding variable among the external factors. Overall, peers and media, including ethical concern (mean= 4.434 ± 0.915) was the predominant category followed by; smell and freshness (mean= 4.332 ± 0.943), Food Retail Environment (mean= 4.332 ± 0.943), and Aesthetics and ethics of Production history (mean= 4.223 ± 0.981). In comparison, the lowest recorded mean among the categories was availability (mean= 2.954 ± 1.104) and accessibility (mean=2.955 ± 1.103).

Table 4. The main factors of chicken meat choice and preference.
(5-Point Likert Scale:1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, and 5= Strongly Agree)

Factors	Variables	Categories	Mean	SD	Total	Sum Total
Internal factors	Sensory features	Taste, and Flavor	4.147	0.995	4.219	4.084
		Smell and Freshness	4.332	0.943		
		Texture and delicacy	4.177	0.863		
	Perceptual features	Color	4.057	1.004	3.949	
		Portion size	4.064	0.913		
		Nutrition and health value with less fat	3.528	1.168		
		Quality	4.146	0.995		
		Nutritional labels	3.766	1.353		
	Information	Health claims	3.166	1.185	3.802	
		Packaging (mostly for the frozen)	3.767	1.353		
Aesthetics and ethics of Production history		4.223	0.981			
Brand, advertisement		4.091	1.037			
External factors	Social environment	Intrapersonal factors and social norms from family peers, and media, including ethical concern, and Halalness	3.411	1.152	3.652	3.599
		Halalness	4.434	0.915		
		Social context when food choice is made	3.109	1.294		
	Physical Environment	Availability	2.954	1.104	3.343	
		Accessibility	2.955	1.103		
		Food Retail Environment	4.332	0.943		
		Time	3.132	1.341		

Results in Table (5) illustrated that only sex variables had an influence on the studied factors that affect consumers' preference for purchasing chicken meat, while the rest of the other studied socio-economic and demographic characteristics did not influence chicken meat preference among the respondents.

Table 5. The influence of socio-economic and demographic characteristics on the factors of chicken meat choice preference (5-Point Likert Scale:1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, and 5= Strongly Agree).

Factors	Variables	F - Value	P-Value
Internal Factor	Sex	5.552	0.019*
	Age Group	0.532	0.752 ^{n.s}
	Education	0.895	0.522 ^{n.s}
	Income	1.168	0.322 ^{n.s}
	Occupation	1.119	0.351 ^{n.s}
	Family Size	1.926	0.107 ^{n.s}
External Factor	Sex	3.061	0.081 ^{n.s}
	Age Group	0.422	0.833 ^{n.s}
	Education	0.265	0.976 ^{n.s}
	Income	1.683	0.114 ^{n.s}
	Occupation	0.316	0.903 ^{n.s}
	Family Size	1.756	0.138 ^{n.s}

* Significance Level (p-value ≤ 0.05)

As it is shown in Table (6), the internal factors among female groups were significantly higher (mean= 4.1390±0.54654) in comparison to the male group (mean= 3.9421 ± 0.74470), while no significant differences were recorded for external factors among sex groups.

Table 6. The influence of sex on the factors of chicken meat choice preference.

Factors	Variables	Mean	Std. Deviation	F-Value	P-Value
Internal Factor	Male	3.9421	0.74470	5.552	0.019*
	Female	4.1390	0.54654		
External Factor	Male	3.3432	0.62148	3.061	0.081 ^{n.s}
	Female	3.4715	0.52699		

* Significance Level (p-value ≤ 0.05)

4. Discussion

Based on the results of this study, it was observed that half of the studied population prefer the large whole chicken size weighed between (2 to 3 Kg) (see Figure 2), which can be primarily found among broiler chickens rather than Local Kurdish Chicken (*Mirishki Kurdi*). The broiler chicken produced in KRI generally weighed between 2-3 kg, which is much with 50% of the preference. In contrast, small-sized chicken can only be found among Local Kurdish Chicken (*Mirishki Kurdi*) or imported chicken meats. It can be said that the preference for medium-sized chicken production is ignored in the poultry production system in KRI, which needs to be considered.

Even though the respondents showed their higher preference for Local Kurdish Chicken (*Mirishki Kurdi*), people frequently buy the white broiler due to availability and accessibility compared to local Kurdish chicken (*Mirishki Kurdi*), which is more expensive (see Table 2). So, the data show the preference in consumption, not buying. These data can encourage poultry producers to expand free-range Local Kurdish chicken (*Mirishki Kurdi*) farms parallelly with broilers chicken farm as competitive produce. The preference of quality and taste of Kurdish Chicken (*Mirishki Kurdi*) products by local people for its being organic and free-ranged has been mentioned in other studies [23]. Additionally, the preference of purchasing from the wet markets can be related to consumer's concerns on chicken meat freshness, the healthiness of the alive chicken, and slaughtered in an Islamic way (Halal). The data from this study shows that consumer preference in Sulaymaniyah city may differ from the data shown in other studies. For example, data are shown in a study [24], conducted in Iraq on "What is the preferred display presentation of your purchased chicken meat?" illustrate that (58.8%) of their respondents preferred frozen chicken meat rather than wet markets. Among the preferred chicken part to eat (See table 3), the chicken breast was the most preferred, followed by thigh than other parts, while chicken feet were less preferred and were mostly left at the wet market shops regardless of the richness of chicken feet in protein, collagen, and calcium [25,26]. A similar result was found in a study in Mosul province regarding whole chicken and chicken parts preference [27].

The results showed that the internal factors are more dominant than the external factors, and mainly, sensory features that can be sensed after preparation or post-purchase stage were more predominant than perceptual features that can be felt at the market or pre-purchase stage. Post-purchase behavior is when the customers assess their satisfaction with a purchase and the final step in the consumer decision process. That will significantly influence their decision to purchase this product again or consider other products. The share of those feelings about the purchase might also affect the purchase decision of others as the social environment is another influential variable with the focus on the category of (Peers, and media, including ethical concern and Halalness) among the external factors.

Tables (5 and 6) illustrated that only sex variables influenced the studied factors that affect consumers' preference for purchasing chicken meat. In contrast, the other looked socio-economic and demographic characteristics did not influence chicken meat preference among the respondents. That means all the studied factors influenced the studied population regardless of their socio-economic and socio-demographic characteristics except gender group, which might be because women cook at home rather than men.

Conclusion

Chicken meat consumption and demand are essential in the KRI food system. Low consumer prices and ease of preparation have made chicken meat of choice for consumers. It is observed from this study that consumer preference is relatively different from the produced or imported chicken meat type and quality in the KRI, and the poultry production system and strategies developed in KRI need to be improved based on scientifically updated data. Empirical data need to be considered regarding consumer consumption needs and demand regarding preferred size, parts, the place to purchase, and other key drivers. Further study is recommended to examine consumer behavior and preference for agri-foods to build an integrated sustainable food production system based on consumers' needs and demands in the KRI and compete with the imported products.

1. Conflict of Interest: The authors of this research paper declare that they do not have any conflict of interest.
2. Declaration of Funding: This research did not receive any specific funding.

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