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Analyzing Consumer Preferences: Insights from the Ghazipur Chicken Market in Delhi, India

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ABSTRACT: The Ghazipur Chicken Market is one of Asia's largest wholesale-cum-retail poultry markets, located in the National Capital Region (NCR) of eastern Delhi, India. Due to its regional significance, it attracts many customers across the metropolitan capital city. Keeping this in view, this study was conducted to examine the consumption behaviour towards chicken in the region and the factors affecting it. Data were collected from 100 consumers at the market from May to June 2022 using a purposive sampling technique. Regression analysis showed that larger households and higher-income earners spend more on chicken while highlighting the significant influence of age and religion on chicken consumption patterns. Practical concerns such as affordability and health benefits drive chicken selection, while market location and hygiene were identified as major constraints. In addition to analyzing market structure, conduct, performance, and integration, infrastructure improvements are essential. These include establishing dedicated slaughterhouses, implementing proper waste management systems, controlling water pollution, expanding market zones, increasing veterinary support, and setting up a dedicated canteen for workers and visitors. These measures aim to enhance the consumer experience, promote food safety, and improve market efficiency locally and globally.

Keywords: Chicken consumption, consumer behaviour, Ghazipur Chicken Market, food safety, market infrastructure.

INTRODUCTION

In 2020, global poultry meat production reached approximately 134 million tonnes, reflecting a 1.2% increase from the previous year, largely driven by a surge in demand in China. The global average annual intake of chicken has increased to 14 kg per person due to its affordability and variety (OECD, 2023). Because chicken is more affordable than other meats in developing nations due to lower incomes, there has been a noticeable shift in meat consumption towards poultry. By 2030, 41% (14.16 kg) of the world's meat protein intake (35.4 kg per capita) is expected to come from poultry meat, a 2% rise over the baseline period of 2019 (OECD, 2023).

In India, poultry meat production reached approximately 4.06 million tonnes, valued at 13.9 billion USD, accounting for 50% of the country's total meat production in 2019-2020 (DAHD, 2024). However, per capita chicken consumption in India is significantly lower compared to the global average, estimated at approximately 4 kg per year (Statista, 2024). Compared to the national average, the metropolitan city of New Delhi has a higher consumption rate, with estimates ranging from 5-7 kilograms per capita yearly (Poultry Trends 2024). This urban increase can be attributed to changing dietary habits and greater access to diverse food options (Suresh, 2016). Despite these insights, a notable research gap exists in understanding the specific consumption patterns within localized markets such as Ghazipur in NCR of Delhi. Detailed studies on such markets are sparse and can provide crucial insights into regional preferences, economic factors, and cultural influences on chicken consumption (ADS, 2023). Addressing these gaps can enhance our understanding of consumer behaviour in urban areas and offer targeted recommendations for policymakers and businesses in the poultry sector (Scudiero *et al*., 2023).

The Ghazipur Chicken Market in NCR Delhi is one of the largest wholesale-cum-retail markets in Asia (Fig. 1), playing a crucial role in supplying poultry to a significant portion of the city's population (ADS, 2023). It accounts for more than 50% of the region's chicken supply (Gangwar *et al*., 2010). This market is renowned for its scale and variety, catering to bulk buyers and individual consumers (Economic Survey 2022). Given its size and diversity, Ghazipur is an ideal location for studying chicken consumption patterns, as it attracts a wide cross-section of the population with varying purchasing behaviours and preferences (Gangwar *et al*., 2010; Economic Survey 2022).

The published and grey literature shows that very few studies, only one or two conducted in 2010, have focused solely on the market structure. However, chicken consumption patterns among people in the region have not been studied, highlighting the need for such research. I chose to survey this market to gain insights into consumer behaviour and preferences regarding chicken purchases because its large customer base offers a rich and diverse dataset. By analyzing consumer patterns here, I aimed to understand the key factors influencing their purchasing decisions, such as purchase frequency, preferred chicken cuts, and any constraints they face. Additionally, the market's importance in the poultry trade makes it a critical point of reference for studying broader consumption trends within the region.

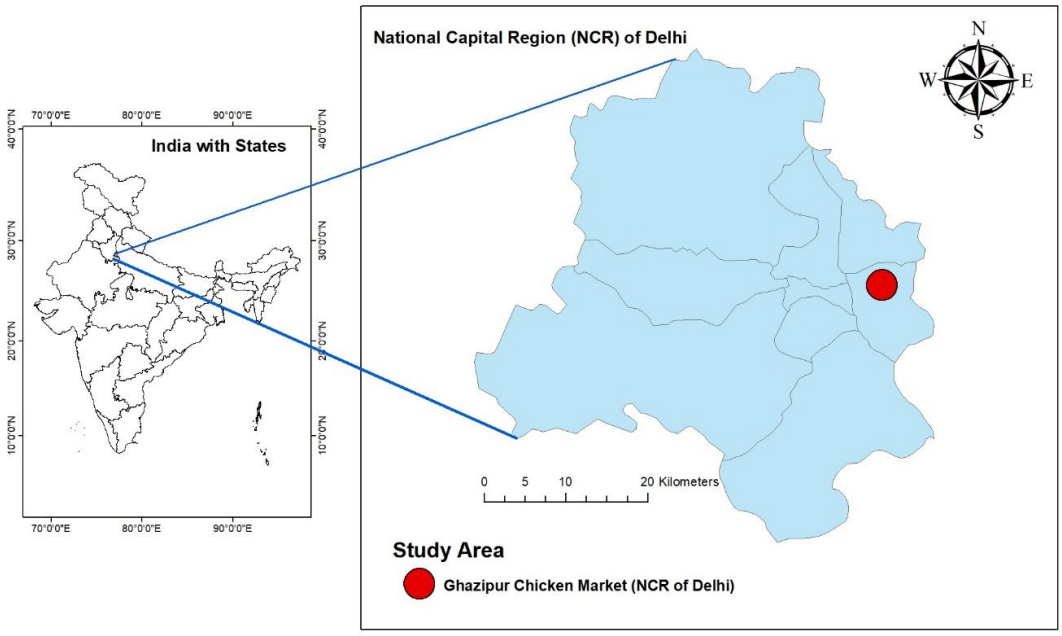

Fig. 1. Location of Ghazipur Chicken Market in the NCR of eastern Delhi.

MATERIALS AND METHODS

A total of 100 consumers were interviewed at the market using purposive sampling technique. The data collection took place between May and June 2019. Only those respondents who were purchasing chicken from various shops in the market were included. Participation was voluntary, and only those consumers who agreed to participate were interviewed. At the market, chicken retailers handle the slaughtering, feather removal, gutting, and cutting the chicken into desired pieces. Consumers then select and purchase the chicken cuts they prefer from these retailers, who operate just outside the wholesale chicken market. The data were analyzed using statistical tools in SPSS software version 22. The methods used for analysis are described below.

1. Garrett's ranking method was applied to rank the key factors influencing consumers' choice of chicken at the Ghazipur chicken market. Consumers were asked to rank the attributes of selection in an ordered manner from 1 to 6, where 1 indicates the most preferred or important attribute and 6 denotes the least preferred or least important attribute. The method was also used to rank consumer preferences for non-vegetarian food items and the constraints consumers faced while purchasing chicken. The method was used because it converts the responses given by the consumers into numerical scores and arranges the targeted attributes based on their importance as perceived by the respondents. The formula used for the Garrett ranking method is given below

$$\text{Per cent position} = \frac{(R_{ij} - 0.5)}{N_{ij}} \times 100$$

Where,

$\mathbf{R_{ij}}$ = Response given for the $\mathbf{i^{th}}$ variable by $\mathbf{j^{th}}$ consumer

$\mathbf{N_{ij}}$ = Number of variables assigned a particular rank by $\mathbf{j^{th}}$ consumer

The ranks assigned to each factor were transformed into scores utilizing the tables developed by Garrett and Woodworth (1969). For every factor, the individual scores given by consumers were aggregated and then averaged by dividing the total by the number of respondents. The mean scores for all attributes and constraint factors were then ranked in descending order based on their averages.

2. Regression analysis was performed to determine the factors affecting consumers' monthly chicken expenditure. The regression equation is given below:

$$Y_i = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \ldots \beta_n X_{in} + \varepsilon_i$$

Where,

Y= Dependent variable or monthly chicken expenditure.

$\mathbf{X_{i1}, X_{i2}\ldots. X_{in}}$ = Independent variables, like age, religion, education, family type, household size, and monthly income

$\boldsymbol{\beta_0}$ = constant

$\boldsymbol{\beta_I}$'s (I = 1,2,3… n) = coefficients for each independent variable

$\boldsymbol{\varepsilon}$ = error term

β_I = represents the average variation in Y for each unit change in Xi, assuming all other X variables remain constant

RESULTS AND DISCUSSION

Socio-economic profile of the consumers. The social profile of chicken consumers at Ghazipur, Delhi, reveals that all 100 respondents were male and belonged to nuclear families (Table 1). There were no female or joint family respondents in the sample. Regarding age, 40 consumers (40%) were aged 18 to 24, and 40 (40%) were between 25 to 34. Meanwhile, 10 consumers (10%) each fall in the 34 to 44 and 45 to 54 age groups, indicating that younger individuals (18 to 34) make up 80% of the sample. Regarding religious affiliation, 56% were Muslims, and 44% were Hindus. The educational backgrounds varied, with 40% of respondents having attained a secondary level of education, 38% having higher secondary education, and 14% being graduates. Four respondents 8% had only primary education, while none were illiterate. This profile suggests a predominantly young, educated, and male consumer base in the sample.

The economic profile of the sample consumers highlights a varied income and expenditure pattern. Out of the 100 consumers, 6% have a monthly income between ₹25,000 and ₹30,000, 6% fall in the ₹30,000 to ₹35,000 range, 6% earn between ₹35,000 and ₹40,000, 46% earn between ₹40,000 and ₹45,000, and 42% have incomes exceeding ₹45,000. In terms of average monthly chicken expenditure, 16% consumers spend less than ₹500 per month, 58% spend between ₹500 and ₹1000, 18% spend between ₹1000 and ₹1500, and 8% spend between ₹1500 and ₹2000. None spend more than ₹2000. More specifically, a majority of consumers had an average monthly chicken expenditure of ₹1000, which is similar to the chicken consumption pattern in Srinagar city, Kashmir, India (₹1050) (Tramboo & Khan 2024). The wholesale and retail nature of the market attracts consumers from various income levels, especially low-income groups, who are drawn to the lower prices of chicken compared to other markets in Delhi.

Table 1: Socio-economic profile of the sample consumers at Ghazipur chicken market.

Parameter	Category	Number or % of consumers
Family type	Nuclear Joint	100 0
Gender	Male Female	100 0
Age	18 to 24 25 to 34 34 to 44 45 to 54	40 40 10 10
Religion	Muslim Hindu	56 44
Education	No schooling Primary Secondary Higher secondary Graduate	0 8 40 38 14
Average monthly income (₹)	25,000 to 30,000 30,000 to 35,000 35,000 to 40,000 40,000 to 45000 > 45000	6 6 6 46 36
Average monthly chicken expenditure (₹)	<500 500 to 1000 1000 to 1500 1500 to 2000	16 58 18 8

Consumer preferences and behavior regarding chicken consumption. Table 2 shows that a majority of consumers prefer eating chicken at home 64% compared to dining out (14%), with a notable portion also eating chicken both at home and out 20%. Most consumers, 97%, find the cost of chicken appropriate, and all are satisfied with the slaughtering reasons. However, a large proportion, 80%, do not use labelled products. Chicken wings are the most popular portion 37%, followed by thighs 30%, while breast meat is less favoured 7%. In contrast, consumers in Chhattisgarh, India, prefer whole chicken over specific cuts (Sahu *et al.*, 2023). The majority of consumers prefer eating chicken once a week (50%), followed by those who consume it twice a week (33%). In Srinagar city, Kashmir, most consumers prefer weekly consumption (67%), followed by daily consumers (17%) (Tramboo & Khan 2024). Compared to the chicken consumption pattern in Telangana, 33% of consumers prefer eating it once a week, followed by 32% consuming it fortnightly and 33% monthly (Srinivas *et al.*, 2018). Consumption quantities are evenly divided between 1.5 and 2 kilograms 40% each, with a smaller group consuming over 3 kilograms weekly 7%. Satisfaction with market services is split evenly between positive and neutral responses 47% each, with a small percentage expressing dissatisfaction 7%.

Table 2: Consumer responses for chicken consumption and market services.

Parameter	Category	Number or % of respondents
Where do you usually eat chicken?	Family	64
	Restaurant	14
	Both	20
Is the cost of chicken suitable for you?	Yes	97
	No	0
	Neutral	3
Whether slaughtering process is satisfactory, considering religious practices? (e.g. halal for Muslims)	Yes	100
	No	0
Do you prefer to buy labelled chicken products?	Yes	20
	No	80
	Neutral	0
Which portion you like to eat most?	Thigh	30
	Breast	7
	Lollypop / Drumstick	27
	Wings	36
How often do you consume chicken?	Daily	13
	Once weekly	50
	> Twice weekly	33
	Once quarterly	4
How much chicken do you and your family typically purchase at a time?	1	13
	1.5	40
	2	40
	2 to 2.5	0
	2.5 to 3	0
	> 3	7
Are you satisfied with the market services provided?	Yes	47
	No	7
	Neutral	47

When asked to rank their preferences for non-vegetarian food items, chicken emerged as the most preferred option, with a Garret score of 63.3, followed by mutton (44.3) and fish (41.7). Similar evidence was observed in Kerala, where consumers prefer chicken over all other non-vegetarian food items (Valsalan *et al*., 2023). In contrast, consumers in the Salem district of Tamil Nadu prefer mutton over chicken, with none opting for fish (Nalini *et al.,* 2022).

Unlike the lack of freshness (57) and the non-availability of fresh fish (56) faced by fish consumers in Kashmir (Gul, 2024), the most significant constraint for chicken consumers at the Ghazipur chicken market was its location (57.8) (Table 3), indicating issues related to accessibility and convenience.

Table 3: Consumer preferences for chicken selection attributes.

Attributes of selection	Garret score	Rank
Economic	72.96	I
Health	65.96	II
Taste	52.9	III
Habit	41.9	IV
Elegance	38.8	V
Easy cooking	28.63	VI

This was followed by concerns over market hygiene (41.3), highlighting issues of cleanliness and sanitary conditions. The respondents prioritized economic factors the most when selecting chicken (72.96), followed by health considerations (65.96) and taste (52.9). Other factors like habit (41.9) and elegance (38.8) were less critical, with easy cooking receiving the lowest score (28.63). It shows that practical concerns, like affordability and health benefits, play the most significant roles in chicken selection.

Regression analysis of factors influencing chicken expenditure among consumers. The regression analysis indicated that age negatively and significantly impacts monthly chicken expenditure ($\beta = -0.219$, $p = 0.05$*). This suggests that for each additional year of age, there is a corresponding 21.9% reduction in monthly spending on chicken. This relationship underscores how consumer spending habits may change with age, potentially reflecting differing dietary preferences or financial priorities among older individuals compared to younger ones (Table 4). Religion has a positive and significant effect ($\beta = 0.239$, $p = 0.048$*), indicating that consumers from certain religious backgrounds (Muslims) spend 23.9% more on chicken than Hindus, likely reflecting cultural or dietary preferences. Scudiero *et al*. (2023), after conducting a spatiotemporal analysis of household consumption across India using NSSO (National Sample Survey Organisation) data from 1993 to 2012, also found that the minority population in the country consumes more chicken compared to Hindus. The most significant factor was household size, with a strong positive impact ($\beta = 0.933$, $p < 0.001$*), showing that larger households spend 93.3% more on chicken, as expected due to higher consumption needs. This evidence is supported by Scudiero *et al*. (2023) after analyzing two decades of

NSSO data from India. Monthly average income also positively influences household chicken expenditure (β = 0.253, p = 0.041*), suggesting that an increase in income is associated with a 25.3% rise in spending on chicken, indicating that wealthier households tend to spend more. On the other hand, variables like education (β = -0.213, p = 0.105), and family type (β = 0.036, p = 0.715) were not statistically significant, meaning they do not have a notable impact on monthly chicken expenditure. This evidence is supported by the study of Scudiero *et al*. (2023), who observed that education up to the secondary level does not affect chicken consumption in India.

The regression model demonstrated strong explanatory power, as indicated by the F-value of 16.605 with a significance level of p < 0.001. Additionally, the independent variable in the model approximately explains 81.1% (Adjusted R-squared = 0.811) of the variance in the dependent variable. And the regression equation for the current model is expressed as follows:

Y = -149.322 + (-95.42) (Age) + 166.06 (Religion) + 192.62 (Household size) + 0.12 (Monthly income)

Where,

Y represents the average monthly expenditure on chicken (₹).

Religion is a categorical variable, coded as 1 for the religion with higher expenditure (Muslim consumers) and 0 otherwise (Hindu).

Table 4: Regression analysis of the amount spent on chicken by consumers.

	Unstandardized coefficients		Standardized coefficients	t-value	p-value
	B	**Std. Error**	**Beta**		
Intercept	-149.32	303		-.049	.961
Age	-95.42	45.97	-.219	-2.07	**.050***
Religion	166.06	78.44	.239	2.104	**.048***
Education	-23.77	13.05	-.213	-1.69	.105
Family type	68.68	18.62	.036	.370	.715
Household size	192.62	29.2	.93	6.62	**.000***
Monthly income	.120	.065	.253	1.85	**.041***
Adjusted R-squared value = 0.811					
F-Statistic	16.065 (p < 0.001)				

* = significant at 5% level

CONCLUSIONS

The study conducted at the Ghazipur Chicken Market in NCR of Delhi provides valuable insights into its diverse consumer base's chicken consumption patterns and preferences. The analysis revealed that household size and income are the most significant factors influencing monthly chicken expenditure, with larger households and higher-income earners spending more. While religion plays a role in consumption, other factors, such as education and family type, were not statistically significant. The study also highlighted practical concerns such as affordability, health benefits, and economic factors as key drivers in chicken selection, with market location and hygiene identified as major constraints.

Several suggestions are recommended to improve the overall market experience and address the challenges identified. First, the market infrastructure should be upgraded by establishing separate shops and slaughterhouses at a suitable location, ensuring all transactions occur efficiently. A proper dumping site should be created to manage waste scientifically and maintain disease-free conditions. Additionally, drainage water should be regularly monitored to prevent pollution of nearby water bodies. Expanding the market into four distinct zones could improve crowd management and ease of access. Furthermore, one or two additional veterinary doctors should be stationed at the market for regular health check-ups of poultry, ensuring the quality and safety of the products. Lastly, building a separate canteen would promote better hygiene and offer consumers a cleaner environment while shopping. These measures would significantly enhance the consumer experience, promote food safety, and improve overall market efficiency.

FUTURE SCOPE

There is also a significant need for further research to analyze the structure, conduct, and performance of the Ghazipur chicken market and its integration with other linked chicken markets. This will help provide a systematic approach to understanding and improving market dynamics. Studying market integration will offer insights into how well different market segments, from which chicken is supplied, respond to changes in price, efficiency, and trade policies. Such an analysis can enhance economic stability and competitiveness, both nationally and internationally.

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Conflict of Interest. None.

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