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Marketing of Exotic Chicken Products and Constraints under Small Scale Intensive Urban Poultry Production in Addis Ababa

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Abstract: The study was conducted with the objective of assessing the exotic chicken products marketing systems and constraints in Addis Ababa. A total of 156 poultry farmers, 30 local retail shops, 30 collectors and 30 supermarkets were included in the study. The main actors involved in purchase of exotic poultry products from small scale intensive poultry farms were urban private consumers, collectors, local retail shops, pastries, restaurants and snacks houses. Most (47.4%) of the small scale intensive poultry farmers of the study area sell the daily collected eggs to the local retail shops around their residence. Five exotic chicken eggs market channels were identified in the study area. On the other hand, three market channels were identified in case of spent layers selling. Most (59.6%) of the small scale intensive poultry farmers in the study area have access for purchasing poultry farm inputs in their surrounding while the rest (40.4%) have no access in the nearby area. Majority (85.9%) of the urban small scale intensive poultry farmers transported the daily collected eggs to the market center on foot using hand basket. Majority (42.3%) of the urban small scale intensive poultry farmers consume chicken eggs twice a week while the urban consumers in restaurants and snacks houses consume more than three times a week (40%). Both the small scale intensive poultry farmers and urban consumers consume chicken meat more than three times a year in particular during religious festivals and on special occasions. There was significant ($P<0.001$) difference between poultry farmers and urban consumers in the preference and consumption frequency of chicken eggs. The price of eggs and spent layers were significantly ($P<0.05$) different in different occasions at the farm gate, local retail shops and collectors. The seasonal prices of eggs in supermarkets were not variable ($P>0.05$) while dressed chicken meat prices were significantly variable ($P<0.05$). The prices of live local and exotic chicken have been increasing from time to time hile the price of dressed chicken meat fluctuates. Higher price was offered for local chicken eggs than exotic. But nowadays, the price offered for exotic chicken eggs become higher than the local chicken eggs. The main constraints encountered in selling of poultry products were poor market for spent layer (1st), lack of their own market center for selling (2nd), large scale poultry farms market interference (3rd) and price fluctuation (4th) according to their importance.

Key words: Egg · Exotic chicken · Marketing · Small scale system · Urban consumers

INTRODUCTION

Commercial layer farming is not only a source of employment, income and food but also critical to strong socio-cultural linkage. To meet up the increasing demand, apart from egg production, efficient egg marketing is necessary. It is difficult to run a profitable business without proper and organized marketing system. Therefore, marketing is a very important factor for egg as a commercial product. An efficient marketing system is needed for availability of product supply at a fair price and to encourage higher production [1]. Due to the high population growth in Africa and growing income, the demand for eggs and poultry meat has significantly increased in recent years across large parts of the continent [2]. The consumption of poultry and eggs will increase by 200% between 2010 and 2020 for at least some countries in sub-Saharan Africa [3].

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Ethiopia, one of the most populous countries in Africa, is a huge market for poultry, despite the high level chicken population. While chicken consumption remained low for so long at less than 1 kg per person per year [4] the market demand is increasing particularly in the Ethiopia capital Addis Ababa and many other major cities. Over the previous three decades or so, however, the subsector has been showing a shift to industrial production with an increase in small- and medium-scale producers that have been established to exploit mainly urban markets. An emerging middle-class urban sector with higher income and more buying power has boosted the demand for poultry products, and this has led directly to expansion of poultry production particularly within urban and peri-urban areas. Large-scale investment is following the boom of the small-scale urban and peri-urban poultry producer [5]. However, there is little or no research conducted on the commercial chicken products marketing system and constraints. Thus, there is a need to undertake a scientific study on the marketing system of poultry products and identifying the constraints. Having this in mind the objective of this study was to assess the exotic chicken products marketing and identifying the constraints under small scale intensive system of urban poultry production.

MATERIALS AND METHODS

Study Areas: The study was conducted in Addis Ababa, the capital city of Ethiopia. Addis Ababa is situated at a latitude of 90 3' North and 380 43' East and an altitude of 2408 meters above sea level. The average minimum and maximum annual temperatures are 9.4°C and 23.2°C, respectively and the mean annual rainfall is 1201 mm. The total area of the city is about 527 km2 and the total human population was estimated to be 3,273,000 [6].

Sampling Procedure and Sample Size: Sub-cities and small scale intensive urban poultry farmers were selected using a two-stage sampling technique. The first stage involved purposive selection of five Sub-cities out of the ten Sub-cities based on the practice and the availability of small scale intensive poultry farms in those areas. Thus, Gullele, Bole, Nifasilk-lafto, Akaki-kality and Yeka Sub-cities were selected for the study. In the second stage, small scale intensive urban poultry farmers were selected randomly from the list of urban poultry farmers from each selected Sub-city. Thus, samples of 156 small scale intensive urban poultry farmers were included for the study,These were 33, 27, 34, 37 and 25 selected randomly from Gullele, Bole, Nifasilk-lafto, Akaki-kality and Yeka Sub-cities, respectively. The sample size for each sub-city was based on proportional sampling. The sample size (N) was determined using the formula recommended by Arsham [7]. For poultry products marketing assessment, a purposive sampling technique was employed based on their participation in exotic poultry products marketing; therefore, purposively selected 30 local retail shops, 30 collectors and 30 supermarkets were interviewed.

Data Collection Method and Analysis: Primary data were collected through interviews with the aid of a structured questionnaire which was administered by the researcher and trained enumerators. The price of chicken and eggs were recorded at Christians and Muslim festivals, on the New Year celebration and on the year round basis at different market centers. All the collected data were coded and entered into a data base using statistical package for social sciences (SPSS). Descriptive statistics such as mean, standard error, percentiles, frequencies, ANOVA (Analysis of variance) and chi-square test of the SPSS statistical software were used to analyze the data [8].

RESULTS

Main Actors in Purchase of Exotic Poultry Products: Marketing of exotic chicken products in the study area was practiced at farm-gate, local retail shops, supermarkets and collectors shops (Table 1). The main actors involved in purchase of exotic poultry products from small scale intensive poultry farms were urban private consumers, collectors, local retail shops, pastries, restaurants and snacks houses. Supermarkets are also the main actors involved in exotic poultry products marketing but they purchased the eggs form large scale poultry farms and whole sellers. Most (47.4%) of the small scale intensive poultry farmers of the study area sell the daily collected eggs to the local retail shops around their residence while 16%, 12.8%, 10.9%, 7.7% and 5.1% sell to the restaurants, collectors, private consumers, snacks houses and pastries, respectively. The main reasons of choice to which they are selling was proximity to home/farm (55.8%), regular clients (25.6%) and better price (18.6%). None of the interviewed small scale intensive poultry farmers sell the eggs to supermarkets.

Table 1: Main actors involved in purchasing of exotic poultry products

Variable	Number of respondents	%
Actors involved in purchasing		
Local retail shops	74	47.4
Restaurants	25	16.0
Collectors	20	12.8
Private consumers	17	10.9
Snacks houses	12	7.7
Pastries	8	5.1
Reasons of choice		
Proximity to home/farm	87	55.8
Regular clients	40	25.6
Better price	29	18.6

Marketing Channels of Exotic Poultry Products: According to the present study, exotic chicken products were sold direct to the private consumers, local retail shops, restaurants, pastries, snacks houses and collectors. Five exotic chicken eggs market channels were identified in the study area. The channels were:

Channel one = Producer → Consumer
Channel two = Producer → Collector → local retail shops → Consumer
Channel three = Producer → Local retail shops → Consumer
Channel four = Producer → Collector → (restaurant, pastry & snack house) → Customer
Channel five = Producer → (Restaurant, Pastry & Snack house) → Customer

Marketing Channel three was found to be the most dominant egg market outlet in the small scale intensive urban poultry production in the study area. On the other hand, three market channels were identified in case of spent layers selling. The channels were:

Channel one = Producer → Consumer
Channel two = Producer → Collector → Consumer
Channel three = Producer → Restaurant → Customer

Among the three market channels of spent layer marketing, channel one was found to be the dominant market outlet in the study area during depopulation of the spent layers which usually held during religious festivals and Ethiopian New Year celebration time.

Market Access and Means of Transportation for Farm Inputs and Outputs: Most (59.6%) of the small scale intensive poultry farmers in the study area stated that they have access for purchasing poultry farm inputs in their surrounding while the rest (40.4%) have no access in the nearby area (Table 2). On the other hand, (65.4%) of the interviewed poultry farmers said that they have access for selling poultry products at the farm gate, to the local retail shops, restaurants, collectors and consumers while (34.6%) of them had no access for selling in the nearby area. All (100%) of the interviewed small scale intensive poultry farmers of the study area purchased the farm inputs from private companies reside in Addis Ababa and the surrounding towns. For transporting farm inputs like feeds and birds they mainly used public transport (90.4%) and on foot using hired labour (9.6%). Majority (85.9%) of the urban small scale intensive poultry farmers transported the daily collected eggs to the market center on foot using hand basket while the rest (14.1%) used public transport.

Preference and Frequency of Consumption of Poultry Products: The urban small scale intensive poultry farmers and the urban consumers of the study area mainly preferred local poultry products for consumption (Table 3). Majority (42.3%) of the urban small scale intensive poultry farmers indicated that they consume chicken eggs twice a week while the urban consumers in restaurants and snacks houses consume more than three times a week (40%). Both the small scale intensive poultry farmers and urban consumers consume chicken meat more than three times a year in particular during religious festivals and on special occasions. The chi-square test indicated that, there was significant ($P<0.001$) difference between poultry farmers and urban consumers in the preference and consumption frequency of chicken eggs.

Seasonal Prices of Poultry Products and Price Trend: The average price of poultry products at different seasons and market centers is presented in Table 4. The price of eggs and spent layers were significantly ($P<0.05$) different in different occasions at the farm gate, local retail shops and collectors. The seasonal prices of eggs in supermarkets were not variable ($P>0.05$) while dressed chicken meat prices were significantly variable ($P<0.05$).

As illustrated in Figure 1, the prices of live local and exotic chicken have been increasing from time to time while the price of dressed chicken meat fluctuates. The local live chicken fetches a higher price than the exotic spent layer in all the 5 years considered.

As shown in Figure 2, higher price was offered for local chicken eggs than exotic. But nowadays, the price offered for exotic chicken eggs become higher than the local chicken eggs.

Table 2: Market access and means of transportation for poultry farm inputs and outputs

Variable	Number of respondents	%
Market access for inputs		
Yes	93	59.6
No	63	40.4
Market access for outputs		
Yes	102	65.4
No	54	34.6
Means of transportation for farm output		
Using vehicle	22	14.1
On foot	134	85.9
Means of transportation for farm inputs		
Using vehicle	141	90.4
On foot	15	9.6

Table 3: Preference and frequency of consumption of poultry products

	Poultry farmers (N=156)	Urban consumers (N=105)		
Variable	N (%)	N (%)	X^2-value	p-value
Chicken meat preference				
Exotic	27(17.3)	8(7.6)	5.077	0.079
Local	98(62.8)	74(70.5)		
Equally preferred	31(19.9)	23(21.9)		
Eggs preference				
Exotic	12(7.7)	6(5.7)	20.222***	0.000
Local	102(65.4)	93(88.6)		
Equally preferred	42(26.9)	6(5.7)		
Chicken meat consumption frequency				
Once a year	11(7.1)	5(4.8)	1.843	0.606
Twice a year	23(14.7)	20(19.0)		
Three times a year	46(29.5)	26(24.8)		
More than three times a year	76(48.7)	54(51.4)		
Egg consumption frequency				
Once a week	34(21.8)	13(12.4)	34.978***	0.000
Twice a week	66(42.3)	24(22.9)		
Three times a week	40(25.6)	26(24.8)		
More than three times a week	16(10.3)	42(40.0)		

***significant at less than 1% level of significance

Table 4: Price of poultry products at different occasions at different market centers

	Price in Birr of eggs, spent layer and dressed chicken meat					
Variable	Year round	Christian festival	Muslim festival	New year celebration	Overall mean	p-value
	(Mean+SE)					
Producer (N=156)						
Eggs	2.7+0.01^{a}	3.0+0.01^{b}	2.7+0.02^{a}	3.0+0.01^{b}	2.8+0.01	0.000
Spent layer	92.1+1.09^{a}	113.4+0.95^{c}	92.6+1.09^{a}	99.9+1.20^{b}	99.5+0.64	0.000
Collectors (N=30)						
Eggs	3.1+0.02^{a}	3.3+0.01^{b}	3.1+0.02^{a}	3.3+0.01^{b}	3.2+0.01	0.000
Spent layer	110.8+1.13^{a}	128.3+0.99^{b}	111.2+1.26^{a}	126.0+1.11^{b}	119.1+0.93	0.000
Supermarkets (N=30)						
Eggs	3.8+0.02	3.8+0.01	3.8+0.02	3.8+0.01	3.8+0.01	0.990
Dressed chicken meat/kg	108.16+0.17^{a}	108.60+0.13^{b}	108.40+0.14^{ab}	108.73+0.10^{b}	108.5+0.07	0.026
Local retail shops (N=30)						
Eggs	3.45+0.01^{a}	3.72+0.01^{d}	3.50+0.01^{b}	3.66+0.01^{c}	3.6+0.01	0.000

^{a,b,c,d}Least square means with different superscripts within a row are significantly different (P<0.05)

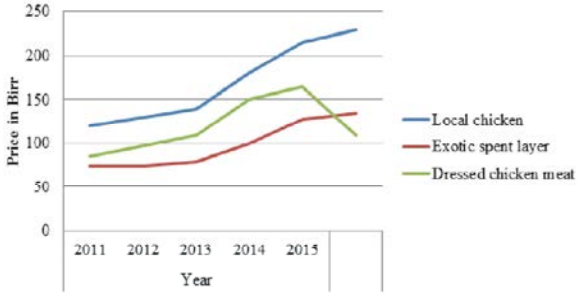

Fig. 1: Price trend of live and dressed chicken meat in the last five years

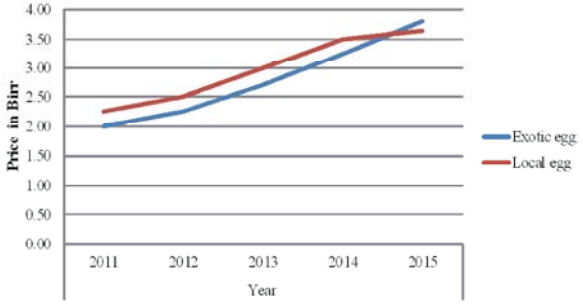

Fig. 2: Price trend of exotic and local chicken eggs in the last five years

Table 5: Poultry marketing constraints in small scale intensive urban poultry farming

Constraints	1st	2nd	3rd	Index	Rank
During purchasing					
High price of feed	90	53	13	0.416	1
Unavailability of pullets in time	49	69	29	0.335	2
High price of pullets	17	27	85	0.203	3
Transportation cost	0	7	29	0.046	4
During selling					
Poor market for spent layer	105	34	4	0.413	1
Lack of their own market center	37	97	7	0.333	2
Large scale farms market interference	2	9	105	0.138	3
Price fluctuation	12	16	40	0.115	4

Marketing Constraints: The study revealed that small scale intensive poultry farmers in the study area encountered different market constraints during purchasing of farm inputs and selling of poultry products (Table 5). The main constraints encountered during purchasing of poultry farm inputs were high price of feed (1st), unavailability of pullets in time (2nd), high price of pullets (3rd) and transportation cost (4th). On the other hand, the main constraints encountered in selling of poultry products were poor market for spent layer (1st), lack of their own market center for selling (2nd), large scale poultry farms market interference (3rd) and price fluctuation (4th) according to their importance.

DISCUSSION

In agreement to the current study, Meseret *et al.* [9] and Fisseha and Tadelle [10] reported that egg marketing takes placed in various places including: urban markets, local markets, at larger district markets and farm gates. The main actors involved in exotic poultry products marketing in the study area were urban private consumers, producers, collectors, local retail shops, pastries, restaurants, snacks houses and supermarkets, which corroborated the reported village chicken and egg marketing system in Bure town [10]. This suggests that there is similarity of actors involved in exotic chicken products marketing in both big cities and towns of different localities.

The small scale intensive urban poultry farmers in the study area are not VAT (Value added tax) registered and they mainly sell the eggs to the local retail shops with a lower price. This might be due to the fact that the local retail shops do not request a receipt from the poultry farmers for the purchasing of eggs. On the other hand, most of the big hotels and restaurants, pastries and

supermarkets were vat registered due to the new tax system and need a receipt for each purchase of poultry products. Thus, they mainly purchase the poultry products from vat registered producers and whole sellers so as to make their financial system legalized. However, this tax system has led most of the small scale intensive urban poultry farmer's from getting the maximum profit margin from the sale of eggs due to selling of eggs with lower price mainly for the local retail shops.

The dominant market channel for exotic chicken eggs in the study area was selling of the eggs by producers directly to the local retail shops that will finally be reaching to consumers, which differed a bit that reported by Meseret *et al.* [9] for village chicken marketing system where the farmers directly sell their chicken to consumers and/or to small retail (Traders) who take them to large urban centers. In case of spent layers marketing, the producers mainly sell directly to consumers in particular during religious festivals and special occasions. Similarly, Kenea *et al.* [11] in East Showa zone reported that the two largest chicken marketing channels in poultry production are farmers directly sell to consumers and farmers sell to small retail traders who take the chicken to large urban centers.

Majority of the small scale intensive poultry farmers and urban consumers of the study area mainly preferred local chicken products for consumption due to its flavor and taste, which was in agreement with Durmus *et al.* [12] where local chicken were mostly preferred by consumers due to its natural, flavour and manual slaughter. According to Tikasz *et al.* [13] consumers prefer the farm chicken due to the healthiness and high quality of this product which is in agreement with the present study. Sonalya and Swan[14] also reported that in both urban and particularly rural markets, local chicken meat is preferred due to its flavor than exotic broiler chicken meat and the tougher muscle texture which is more suited to dishes with longer cooking time, such as soup. Very few urban consumers in the study area preferred exotic chicken for consumption due to the high price of local chicken in particular during religious and New Year festivals. Chicken meat consumption by the small scale intensive poultry famers and urban consumers was mainly more than three times a year by considering religious festivals and special occasions in the form of "Doro wat". According to Durmu° [12] nearly half of the people in Turkey consume poultry meat at least once a week which was much frequently than the frequency of chicken meat consumption in the study area. This difference in frequency of chicken meat consumption might be due to the differences in economic status of consumers, the chicken price, presence of other substitutes like beef and mutton and the influence of fasting period in the study area. The chicken eggs were mainly consumed twice per week by the small scale intensive poultry farmers while the urban consumers consumed more than three times per week. This difference might be due to the fact that the urban consumers mainly consume in the snacks houses and restaurants that prepared mostly egg dishes at break fasts time and this led them to consume egg dishes most of the time.

Most of the time small scale intensive poultry farmers in the study area do not consider the time of spent layer disposal to coincide with festival period at the time of purchasing the pullets due to the unavailability of pullets on time of request from the source. Thus, they are obliged to sell the spent layer with lower price at the time of spent layer disposal. The price of spent layer was relatively lower than local chicken due to the consumer's preference for local chicken breeds for sacrifice. Similarly, Kenea *et al.* [11] reported that during holidays, consumers prefer to buy local breeds having particular colours for sacrifices and cultural reasons due to the fact that modern farmers produce exotic breeds having either red or white colour and do not supply preferred coloured chickens. However, those urban consumers that preferred exotic chicken products over the local one might be due to the higher price of local chicken products which is unaffordable during festival periods.

The higher selling price for exotic chicken products at supermarkets might be due to VAT registration which allows someone to engage into commercial activities involving the production and distribution of goods and the provision of services with 'added value. Whereas, the local shopkeepers and majority of the collectors are not VAT registered and as a result they sell with a lower price than supermarkets. The present study revealed that the price of exotic chicken eggs was influenced by festival periods at the farm gate, local shopkeepers and collector's shops whereas the prices in supermarkets didn't significantly vary. The statistical significant difference observed on the price of dressed chicken meat at different festivity in the present study were in agreement with the report of Fisseha and Tadelle[10] and Kenea *et al.* [11] who observed the influence of religious festivity on the price of chicken products.

The price offered for local chicken products was higher than the price offered for exotic chicken products for the last several years in the study area. Currently, the price offered for exotic chicken eggs become higher than

the local chicken eggs owing to the high demand by restaurants and pastries for its larger size and less chance of spoilage. However, the price consumers' willing to pay for the spent layer was still lower than the local chicken. A premium price for local chicken might be due to the fact that the meat is tastier, strong flavored, tougher and retains its texture when preparing traditional dishes like "Doro wat" one of Ethiopia's most famous dishes mainly served during holidays and on special occasion. The price of exotic dressed chicken meat is also increasing from time to time due to the increase in demand for dressed chicken meat by the restaurants and urban consumers.

Currently, the involvement of government enterprises in the provision of poultry farm inputs become reduced due to the privatization policy that the government has been implementing in changing governmental enterprises into private enterprises. However, the private enterprises are not providing the poultry farm inputs at its required amount, quality and on time of request in particular in the provision of day old chicks and pullets. Moreover, the unavailability of formulated poultry feed supply in the nearby area which incurred high transportation cost.

In agreement with the current study, Maqbool *et al.* [15] reported that the main problems encountered in marketing of commercial poultry products in Pakistan were the price of feed and medicine, transportation, and lacking of health facilities. Poor sells for the spent layer due to low interest of consumers in consuming exotic chicken, lack of their own market center so as to get the maximum profit margin by selling to the final consumer, the interference of large scale poultry farms in reducing the selling price during festival periods and price fluctuation due to the influence of fasting period were the constraints encountered during selling of poultry products.

CONCLUSION

Selling of eggs to the local retail shops was one of the dominant market channels in small scale intensive urban poultry farming. Pastries and restaurants mainly preferred exotic chicken eggs. There is a high price for chicken products during festival period due to the tradition of using Doro wat during festivities and the affordability of the chickens by majority households. The high price of feeds and poor sales for spent layers is the main market constraint faced in small scale intensive urban poultry production in the study area. Poultry products collectors played a great role in the supply of exotic eggs for pastries and snacks houses while the supermarkets are the main suppliers of exotic chicken eggs and dressed chicken meat for the restaurants.

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