



Profiling consumers based on information use and trust in a developing economy

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Abstract

In the wake of the intense debate about the effect of poultry imports on domestic poultry industries in sub-Saharan Africa, information campaigns have evolved to encourage the consumption of domestic poultry meat products. Nevertheless, consumers use numerous channels to find information, and thus, the extent to which resources should be allocated to these channels to reach segments of consumers is vital. The purpose of this paper is to identify consumer groups based on use and trust in information sources and then profile the segments using sociodemographic variables, purchase motives, and meat consumption. Face-to-face interviews were used to collect data amongst 500 urban consumers in Ghana, which were analysed with factor analysis and two-step cluster analysis. Results show that consumers frequently use personal sources of information about chicken. Cluster analysis revealed three consumer segments: cautious consumers (18.2%), enthusiastic consumers (53.0%), and optimistic consumers (28.8%). The segments differed significantly regarding the type of information searched for, sociodemographic characteristics, purchase motives, and chicken meat consumption patterns. The findings can aid actors and institutions seeking to increase the consumption of domestic poultry meat in developing targeted communication strategies that suit the characteristics, motivations, and information needs of different consumers.

KEYWORDS

cluster analysis, consumer segmentation, factor analysis, information sources, motives, poultry meat, trust

1 | INTRODUCTION

Several strategies are used to influence consumers' food consumption behaviour, including policies, prices, and information (Niva, Vainio, & Jallinoja, 2017; Vainio, 2019). Regarding these strategies, information provision is considered vital as knowledge is necessary, although not a sufficient condition for making food choices

(Peschel, Grebitus, Steiner, & Veeman, 2016; Vainio, 2019; Verbeke, 2008). According to Verbeke (2008), information assists consumers in deriving satisfaction from food products and knows the origin and environmental, ethical, and technological conditions under which these products are produced and processed. Nevertheless, evidence suggests that any effect of information will depend on consumers, their preferences, and factors such as the food product,

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the communicated information, and the potential health or safety risk (Grunert & Wills, 2007; Jungermann, Pfister, & Fischer, 1996). Besides, information can guarantee actual benefits for consumers only if they have sufficient motivation and ability to look for, process, and evaluate its relevance and quality (Hung, Grunert, Hoefkens, Hieke, & Verbeke, 2017; Vainio, 2019).

Moreover, information received by consumers must be reliable and trustworthy (Salaün & Flores, 2001). Accurate dissemination of information can strengthen consumer trust by reducing information asymmetry between producers/sellers and consumers as well as perceived concerns about the quality and safety of food products (Verbeke & Ward, 2006). Morrow, Hansen, and Pearson (2004, p 49) define trust as “the extent to which one believes that others will not act to exploit one's vulnerabilities”. From this, trust can be conceptualized as a multidimensional concept comprising of cognitive, affective, and behavioural manifestations that combine into a unitary social experience (Lewis & Weigert, 1985). According to Thiede (2005), trust plays a critical role in the utilization of provided information. Hence, the value of information becomes zero or even negative if the source of information is not trusted (Thiede, 2005).

Various studies examined consumer information search behaviour regarding food products (Kuttschreuter et al., 2014; Liu, Pieniak, & Verbeke, 2014; Pieniak, Vanhonacker, & Verbeke, 2013; Pieniak, Verbeke, Scholderer, Brunsø, & Olsen, 2007; Visschers, Hartmann, Leins-Hess, Dohle, & Siegrist, 2013; Żakowska-Biemans et al., 2017; Zander & Hamm, 2012). Previous studies focused largely on developed countries (i.e., European countries). However, relatively little is known about the type of information and sources that consumers use as well as their trust in these sources in a developing country context.

To the authors' knowledge, no study has examined consumers' information search behaviour in the context of food products in Africa, especially meat. This study, therefore, aims to shed light on these issues and contribute to this line of research in an African setting. Understanding consumers' use of information sources is crucial for developing effective communication and marketing strategies for food products in the face of increasing competition resulting from increased international trade and globalization.

Against this background, we conducted a household survey of consumers in Ghana, focusing on poultry meat. Poultry meat is an ideal commodity for the purpose of this study because it has become a popular food for people in Ghana and can be adapted to a wide variety of dishes. As a result, its consumption has been increasing over the past decades. The rise in poultry consumption, however, has not reflected in a corresponding increase in the consumption of domestically produced poultry meat (see, e.g., Asante-Addo & Weible, 2019). Consequently, consumer-focused campaigns have recently emerged. One of such initiatives is the nationwide campaign dubbed 'Eat Ghana Chicken'. This initiative was launched in 2018 as a joint project between the Ghana Poultry Project (GPP) under the auspices of the Ministries of Trade and Industry, Health, Food and Agriculture, and the Ghana National Association of Poultry Farmers (Daily Graphic, 2018). The primary goal of the campaign is

to encourage Ghanaian consumers to purchase more domestically produced chicken. With stronger, reliable demand, it is expected that this will bolster farmer commitments and capacity to increase their supply and thus create a sustainable and commercially competitive poultry industry.

However, consumers may be selective or nonselective in their use of information sources and therefore need different communication approaches to be informed effectively (Kornelis, Jonge, Frewer, & Dagevos, 2007; Visschers et al., 2013). An approach where different communication and information provision strategies are targeted at different consumer segments has been found to impact food consumption behaviour (Verbeke, 2008). Besides, the provision of credible information to consumers imposes significant costs on producers and policymakers. Thus, finding innovative and effective ways to provide information to consumers and at the same time reducing search costs is critical to achieving this objective.

Therefore, this paper attempts to answer some key questions: (a) what are the different sources of information that consumers' use and to what extent do they trust these sources? (b) Can consumers be segmented based on their use and trust in food information? (c) Do the identified segments differ in terms of information cues searched for, sociodemographic characteristics, and consumption behaviour? These questions are relevant for producers, marketers in the poultry industry as well as policymakers for better targeting of information and communication and support development of strategies aimed at increasing domestic poultry meat consumption.

2 | CONSUMER INFORMATION SEARCH BEHAVIOUR

A standard economic justification for information provision relates to the presence of market failures linked to the supply of high-quality goods in markets (Akerlof, 1970; Teisl & Roe, 1998). For example, in buying food products, a buyer can have information about the prices of the products in the market. However, he/she may not have the same depth of information about the quality of the product as the seller leading to an information asymmetry between the two parties. If sellers are unable to credibly communicate the quality or attributes of their products to consumers, the predicament of Akerlof's (1970) lemons problem may prevail, leading to only low-quality products being sold.

From a marketing perspective, consumers go through different stages in purchasing and marketers are interested to learn how consumers behave at each stage, to influence their decisions at each stage (Kotler & Armstrong, 2011; Solomon, Bamossy, Askegaard, & Hogg, 2010). However, the decision-making process is a complex one and could be influenced by several factors such as environmental, psychological (personal), the properties of the product itself (Font-i-Furnols & Guerrero, 2014). Various models have been proposed for understanding consumer behaviour. One such model is the stimuli-response model, which indicates that marketing and environmental stimuli enter the consumer's consciousness and a set

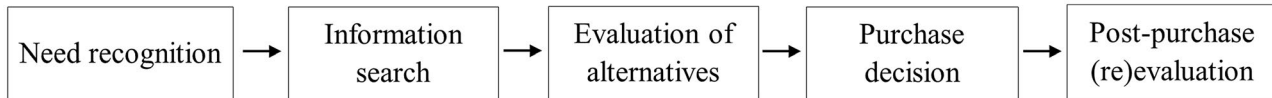


FIGURE 1 Overview of consumer's decision-making process. Source: Adapted from Kotler and Keller (2012)

of psychological processes interact with certain consumer characteristics in the decision-making process and lead to a certain purchase decision (Kotler & Keller, 2012). According to Kotler and Keller (2012), this model seeks to explain the process that unfolds within consumer consciousness from the arrival of the outside marketing stimuli to the point of making the ultimate purchase decisions.

Based on the consumer behaviour model, the purchase decision can be broadly classified into five stages: (i) problem or need recognition (ii) information search (iii) evaluation and comparison of alternatives (iv) purchase (choice) decision and (v) post-purchase behaviour as depicted in Figure 1 (Kotler & Keller, 2012). This model shows that the buying process begins long before the actual purchase and has consequences after the purchase. However, consumers do not always seem to engage in some logical or sequential activities when making purchasing decisions as suggested by this model (Solomon et al., 2010). Kotler and Keller (2012) suggest that some consumers may simply skip or reverse some of these stages. This is especially the case in low-involvement purchases such as food, which are characterized by limited problem-solving or seen as routinized or habitual decisions (see, e.g., Grunert, 2005; Solomon et al., 2010).

The mechanism by which purchase occurs according to the five-stage model is as follows. First, the consumer becomes aware of a problem or need to be solved. This need can be triggered by internal and external stimuli (Kotler & Armstrong, 2011). Second, after a problem or a need is recognized, a period of information search follows, which is the focus of this study. At this stage, the consumer learns about the products that can satisfy the need or solve the problem. The search for information can be either internal or external (Engel, Blackwell, & Miniard, 1993; Solomon et al., 2010). Internal search is when a consumer use information already stored in his/her memory and is determined by past experience with the product (Engel et al., 1993). For example, if a consumer buys or consumes a certain type of chicken meat product and found it a pleasurable experience, the memory will assist in future decision making. However, if this information is not enough for a purchasing decision the consumer seeks additional information in an external search, which involves seeking information from the environment (Engel et al., 1993; Loudon & Della Bitta, 1993).

Consumers often search for a limited range of information (Solomon et al., 2010). Regarding these searches, Kotler and Keller (2012) distinguished between two levels of involvement. First, consumers who search for information with relatively weak intensity known as heightened attention. Consumers at this level, simply become more receptive to information about a product. Second, consumers who actively search for information, for instance by looking for reading materials, contacting friends, going to websites, and visiting stores to learn more about the product. This group of consumers

typically belong to the high-involvement learning state (Kotler & Keller, 2012).

3 | MATERIALS AND METHODS

3.1 | Sampling

To collect data, we used a structured questionnaire design based on consumer focus groups. The focus groups were used to obtain insights into consumer preferences and particularly the channels used to get information about poultry products. Only consumers aged 18 years and above, responsible for buying food or deciding what food to buy, and consuming chicken products were included in the survey. The survey was carried out in the two largest cities of Ghana: Accra and Kumasi. These cities were selected because most of the increase in poultry consumption is expected to occur in urban areas. Additionally, they represent two of the ten administrative regions (i.e., Greater Accra and Ashanti) where commercial poultry operations are mostly found.

We employed a multistage sampling approach. First, we divided each city into 10 administrative units (i.e., sub-metros/districts). Second, to ensure greater representation within the study areas we randomly selected five sub-metros/districts from each city. Within each sub-metro/district, a random sample of communities was drawn. Two communities per sub-metro/district were selected. Finally, from each of the selected communities, households from which respondents were drawn were selected using systematic random sampling. To select a household, we followed a randomly generated route (random walk procedure), and respondents from every third household along the route were interviewed. Where a respondent in a target household did not eat chicken, was not available or not interested in participating, the next household was chosen. The structured survey was administered between March and April 2018. Altogether, 500 respondents were interviewed using Computer-Assisted Personal Interviewing. The questionnaire solicited information on respondents' actual chicken buying and consumption habits, sets of statements that capture respondents' attitudes and perceptions regarding food and in particular, domestic versus imported chicken meat, use and trust in information about chicken products, and respondents' sociodemographic characteristics.

3.2 | Questionnaire design and data analysis

To assess the use of information sources, respondents were asked to evaluate how often they use different sources of information

(family and friends, sellers, government, health professionals, television, radio, newspaper, magazines, and internet) regarding the purchase and consumption of chicken meat on a 5-point Likert scale with 5 being 'very often' and 1 'never'. Likewise, respondents were asked to indicate their trust in each of the identified information sources. The respondents had to rate the extent to which they trust information about chicken meat from these sources on 5-point Likert scales ranging from 'completely distrust' (1) to 'completely trust' (5).

The analysis of consumer information search behaviour follows a two step-method in sequence. First, factor analysis using principal components with Varimax rotation was performed to discover the basic structure underlying the channels for information seeking about chicken and consumers' trust in these sources. The Kaiser-Meyer-Olkin (KMO) values (0.70 and 0.71) and Bartlett's tests of sphericity were highly significant, indicating that the data matrix was

suitable for factor analysis. Regarding the sources of information, three factors emerged: (1) use of official and commercial sources, (2) use of personal sources, and (3) use of electronic media sources. The factors explained about 65% of the variance in the original data (Table 1). The Cronbach's alpha, which is a measure of reliability or internal consistency for each dimension ranged from 0.71 to 0.85 and thus were satisfactory (Hair, Black, Babin, Anderson, & Tatham, 2006).

Factor loadings and reliability estimates for the trust in information sources are presented in Table 2. The factor analysis yielded four distinct factors that explained 77% of the variance in the initial data. The Cronbach's alpha, for each dimension was satisfactory, except factor four, which had a value below the satisfactory scale (0.48) and thus was not included in interpretation and subsequent analysis. The factors can be described as (1) trust in commercial sources (2) trust in electronic media sources (3) trust in personal sources.

TABLE 1 Principal component analysis of use of information sources about chicken meat

Variable	Mean values	Factor 1: Official & commercial sources	Factor 2: Personal sources	Factor 3: Electronic media sources
Television	3.25			0.838
Radio	3.39			0.888
Newspapers	1.73	0.768		
Health professional (e.g., medical doctor, nurse, nutritionist, etc.)	2.73	0.612		
Family, friends, and colleagues	4.57		0.912	
Sellers/Vendors	3.61		0.917	
Government sources	2.37	0.590		
Internet/Social media	2.51	0.677		
Magazines, pamphlets, and flyers	1.44	0.682		
Variance explained (%)		0.25	0.21	0.19
Cronbach's α internal reliability		0.71	0.85	0.75

Note: KMO measure of sampling adequacy = 0.70. Bartlett's test of sphericity $\chi^2 = 0.000$.

TABLE 2 Principal component analysis of trust in information sources about chicken meat

Variable	Mean values	Factor 1: Trust in commercial sources	Factor 2: Trust in electronic media sources	Factor 3: Trust in personal sources	Factor 4: -
Television	3.63		0.893		
Radio	3.62		0.907		
Newspapers	3.17	0.736			
Health professional (e.g., medical doctor, nurse, nutritionist, etc.)	4.14				0.839
Family, friends, and colleagues	3.89			0.829	
Sellers/Vendors	3.34			0.856	
Government sources	3.73				0.736
Internet/Social media	2.76	0.827			
Magazines, pamphlets, and flyers	3.08	0.860			
Variance explained (%)		0.23	0.22	0.17	0.15
Cronbach's α internal reliability		0.82	0.87	0.65	0.48

Note: KMO measure of sampling adequacy = 0.71. Bartlett's test of sphericity $\chi^2 = 0.000$.

Second, a two-step clustering (Wedel & Kamakura, 2000) based on the use of and trust in various information sources was applied to identify consumer segments. Ward's hierarchical clustering method (using squared Euclidian distance) was used to identify distinctive homogenous segments using factor scores resulting from the exploratory factor analyses. Based on the proportionate increase in heterogeneity and inspection of the dendrogram, three clusters were determined as the optimum number. After identifying the optimal number of clusters, the clustering was fine-tuned using the non-hierarchical K-means clustering technique (Hair et al., 2006). The K-means clustering is a relocation method that is widely used in segmentation studies. The profiles of the resulting segment were determined using cross-tabulation with chi-square tests and one-way analysis of variance (ANOVA) with post hoc Tukey comparison of mean scores. The segments were compared based on the use of information cues when purchasing chicken meat, sociodemographic characteristics, purchase motives (captured as a multiple response variable), and meat consumption. Meat consumption was a self-reported item and measured with a question 'How often do you eat the following meat types in your household?' The answers ranged from 0 (never) to 6 (four times or more a week).

4 | RESULTS

4.1 | Description of segments

In general, respondents' self-reported use of information and trust appeared moderate. The most frequently used sources of information were personal (average rating 4.09), followed by electronic media (3.32). Likewise, electronic media (3.62) and personal (3.61) sources about chicken meat were most trusted. Information from official and commercial sources such as health professionals, government, newspapers, internet, and magazines including pamphlets and flyers, were the least used with scores below the average of the

scale (2.16). Based on the cluster analysis, three distinct consumer groups were identified. The respective sizes and mean scores of the segments are reported in Table 3.

Segment 1 is the smallest group and accounts for approximately 18.2% of the sample. This segment is characterized by relatively low use of available information sources and low trust levels in the various sources. This means that consumers in this segment are rather passive in their search for information about chicken meat and rather distrustful. For this reason, we labelled this segment as 'cautious' consumers.

Consumers in Segment 2 were characterized by high use and trust in information sources. Consumers in this segment scored the highest on the use of all information sources about chicken and also on trust except for electronic media. Therefore, we referred to this segment as 'enthusiastic' consumers. Although the factor 'use of official and commercial sources' has the lowest absolute value (2.61) compared with other factors within this segment, this segment has the highest use of official and commercial sources by far. This segment was the largest segment accounting for more than half (53.0%) of the sample.

Segment 3 contained consumers with moderate use but high trust (except for commercial sources) in the presented information channels. Individuals in this segment rely on personal and electronic media sources but have the lowest use in terms of official and commercial sources of information. Their use of electronic media sources is comparable to those in Segment 2. In addition, they have the highest trust for these sources but not significantly different from those in Segment 2. This segment contained 28.8% of the respondents and is referred to as 'optimistic' consumers.

4.2 | Types of information searched by consumers

Considering the interest in potential information cues, health, safety, and quality information were the most important cues consumers usually searched for regarding chicken, while the method of

TABLE 3 Mean scores of the segments on the classification variables

	Total sample	Clusters			F-Value	p-Value	η^2
		1	2	3			
Sample size (%)	100	18.2	53.0	28.8			
Use of official & commercial sources	2.16	1.78 ^c	2.61 ^b	1.55 ^a	240.98	<.001	0.492
Use of personal sources	4.09	3.70 ^b	4.32 ^c	3.93 ^a	28.09	<.001	0.102
Use of electronic media sources	3.32	2.15 ^b	3.58 ^a	3.58 ^a	209.57	<.001	0.458
Trust in commercial sources	3.00	2.26 ^c	3.54 ^b	2.49 ^a	215.67	<.001	0.465
Trust in electronic media sources	3.62	2.49 ^b	3.84 ^a	3.94 ^a	146.79	<.001	0.371
Trust in personal sources	3.61	3.11 ^c	3.81 ^b	3.58 ^a	29.96	<.001	0.108

Notes: Different lower case superscripts indicate significantly different means between the segments using independent sample one-way analysis of variance followed by Tukey's HSD test.

Eta² is the proportion of total variance that is explained by an independent variable (Field, 2009).

TABLE 4 Profile of the segments on the type of information searched for on chicken

	Total sample	Cautious	Enthusiastic	Optimistic	F-Value	p-Value	η^2
Price	2.88	3.07	2.87	2.79	1.30	.274	0.005
Safety issues	3.47	2.30 ^c	3.88 ^b	3.44 ^a	90.20	<.001	0.266
Quality	3.34	2.32 ^c	3.89 ^b	2.97 ^a	91.35	<.001	0.269
Nutritional information	3.31	2.24 ^c	3.86 ^b	2.97 ^a	88.76	<.001	0.263
Health benefits	3.57	2.30 ^c	4.06 ^b	3.47 ^a	103.52	<.001	0.294
Country of origin (i.e., imported)	2.22	1.95 ^a	2.45 ^b	1.96 ^a	11.40	<.001	0.044
Place of purchase	2.64	2.54 ^a	2.85 ^b	2.33 ^a	9.61	<.001	0.037
Method of preparation/Cooking recommendations	2.36	2.23 ^c	2.74 ^b	1.76 ^a	35.79	<.001	0.126

Notes: Different lower case superscripts indicate significantly different means between the segments using independent sample one-way analysis of variance followed by Tukey's HSD test.

preparation and the country of origin (for imported chicken products) were the least (see Table 4).

Not surprisingly, Segment 2 scored the highest and differed significantly on all eight potential information cues, except the price. This implies that consumers belonging to this segment were simply very interested in obtaining information about chicken. Specifically, they were interested in information about health, quality, safety, and nutritional information than price, country of origin, method of preparation and place of purchase. Segment 3 consumers were more interested in searching for information related to credence qualities such as health and safety. With the exception of price, consumers belonging to Segment 1 scored the lowest (below the neutral point of the scale) on all the cues as compared to the other segments. Consumers belonging to this segment were more interested in price information than any other information and scored the highest on this score. Although this segment scored the highest on price information, there was no significant difference between the segments. In addition, the score on information about the country of origin and place of purchase was not significantly different from those in Segment 2.

4.3 | Sociodemographic profile of the segments

Table 5 presents the sociodemographic characteristics of the segments. As compared to the distribution in the total sample, there were more men to women amongst Segment 1 and more women to men amongst Segment 3. The gender distribution of Segment 2 was very similar to one of the total sample. Likewise, Segment 2 was the youngest segment with more of the youngest respondents and less of the older ones (55 years and above). However, gender and age were not significantly different between the segments. Sociodemographic factors found to be significant in distinguishing the consumer information segments were education, employment, and income. These factors will be important in determining consumers' information search decisions and thus should be considered in the context of information campaigns. In terms of education, the results show that the educational level of Segment 2 was significantly higher than the average of the other segments. This segment includes the largest shares of tertiary education

(i.e., Post-secondary and above) and relatively more employed in the formal sector compared to the other segments. Compared with the total distribution in the sample, Segments 1 and 3 are composed of a significantly higher proportion of consumers who are self-employed with Segment 1 having the highest. In comparison with the other clusters, Segment 1 had a significantly higher proportion of consumers in the low-income category. A higher proportion of the high-income households belong to Segment 2 relative to the other groups and Segment 3 has more households in the middle-income category.

4.4 | Motives for purchasing chicken

Respondents' reasons for buying chicken meat are presented in Table 6. In general, consumers attached greater importance to sensory aspects (taste) and suitability for the preparation of many dishes. Low fat content or leanness of chicken meat seems not to be important motive to choose chicken meat amongst respondents. Segment 1 has the highest preference for taste and price. Consumers in this segment do not seem to consider health and nutritional value of chicken meat as important motives for their purchase. Segment 2 scored significantly higher on all motives compared to the other segments. This segment not only puts a high value on taste, suitability of chicken for many dishes, but also convenience and health motives. In contrast, low values are found for low price. Amongst respondents in Segment 3, low price was the most important motive for buying chicken. Low values are given to low fat content and health. A significant difference between respondents belonging to all segments was observed for a factor related to the availability of chicken meat.

4.5 | Differences in meat consumption between segments

The results in Table 7 show the consumption frequency of different meat types amongst the segments. Overall, fish is consumed frequently than any of the other meat products, followed by chicken, beef, and goat meat. Pork and lamb (mutton) are the least consumed

TABLE 5 Sociodemographic characteristics of consumers surveyed

	Total sample	Cautious	Enthusiastic	Optimistic	F-Value ^D /χ ²	p-Value
<i>Gender (%)</i>					2.674	.263
Male	14.6	18.7	15.1	11.1		
Female	85.4	81.3	84.9	88.9		
<i>Age (average)^D</i>	38.3	39.1	37.4	39.7	2.04	.131
<i>Age (% category)</i>					5.876	.209
18–34	44.6	39.6	49.4	38.9		
35–54	44.2	46.2	40.8	49.3		
55 and above	11.2	14.3	9.8	11.8		
<i>Education (%)</i>					173.126	<.001
None	4.0	5.5	1.1	8.3		
Primary	8.0	14.3	4.9	9.7		
Junior secondary	24.0	47.3	7.6	39.6		
Secondary education	20.6	28.6	18.5	19.4		
Post-secondary	19.6	2.2	30.6	10.4		
Bachelor's degree	18.8	2.2	30.2	8.3		
Master's or higher degree	5.0	0.0	7.2	4.2		
<i>Employment status (%)</i>					53.468	<.001
Full-time employed	32.0	22.0	41.9	20.1		
Part-time employed	7.6	2.2	10.2	6.3		
Self-employed	49.0	64.8	35.9	63.2		
Unemployed	3.8	6.6	3.8	2.1		
Retired	2.2	2.2	2.3	2.1		
Household duties (Homemaker)	3.6	2.2	3.0	5.6		
Student	1.8	0.0	3.0	0.7		
<i>Household net monthly income</i>					37.277	<.001
Low (<GH¢600)	19.0	33.0	14.7	18.1		
Middle (GH¢600–GH¢1,799)	58.2	58.2	53.2	67.4		
High (GH¢1,800 & above)	22.8	8.8	32.1	14.6		
<i>Family status (%)</i>					7.889	.444
Married	60.0	58.2	60.0	61.1		
Single	24.0	26.4	25.3	20.1		
Divorced	6.4	6.6	6.0	6.9		
Widowed	5.0	6.6	3.0	7.6		
Living together	4.6	2.2	5.7	4.2		

Note: ^DF-value for the age (average), χ² for other tests.

meat amongst respondents. Significant differences between segments are observed for chicken meat, beef, and lamb. Segment 1 had lower consumption of chicken than the other two groups and lower consumption of lamb compared with the third segment. Consumers in Segment 2 together with Segment 3 displayed a significantly high consumption frequency of chicken meat compared to those in Segment 1. However, Segment 2 had a significantly lower consumption frequency of beef than the other clusters. The third segment seems to have a high frequency of beef and lamb consumption. Their consumption levels for beef differ significantly from Segment 2 but not segment one. Additionally, they consumed relatively frequent lamb than

segment 1. Concerning domestic and imported chicken meats, the results show that imported chicken is consumed more often than domestic chicken. However, the consumption of imported and domestic chicken did not differ significantly between the segments.

5 | DISCUSSION

The present study provides insight into the use of information channels by consumers to seek information on chicken meat as well as the trust in these sources. In particular, we investigated whether

TABLE 6 Chicken meat purchase motives

	Total sample	Cautious	Enthusiastic	Optimistic	F-Value	p-Value
Suits many dishes	0.56	0.37 ^a	0.68 ^b	0.46 ^a	18.80	<.001
Healthy/nutritious	0.47	0.29 ^a	0.64 ^b	0.27 ^a	38.21	<.001
Easy to prepare	0.48	0.30 ^a	0.65 ^b	0.30 ^a	34.86	<.001
Readily available	0.41	0.32 ^c	0.57 ^b	0.19 ^a	33.36	<.001
Cheap	0.45	0.45 ^{a,b}	0.40 ^b	0.53 ^a	3.25	.039
Low fat/lean	0.34	0.24 ^a	0.45 ^b	0.22 ^a	14.60	<.001
Tasty	0.59	0.55 ^a	0.68 ^b	0.47 ^a	8.69	<.001
Suitable for feast (e.g., parties, other occasions)	0.47	0.33 ^a	0.52 ^b	0.46 ^{a,b}	5.30	.005

Notes: Different lower case superscripts indicate significantly different means between the segments using independent sample one-way analysis of variance followed by Tukey's HSD test.

	Total sample	Cautious	Enthusiastic	Optimistic	F-Value	p-Value
Chicken	3.29	3.07 ^b	3.44 ^a	3.17 ^{a,b}	3.21	.041
Imported	2.48	2.34	2.57	2.39	0.87	.418
Domestic	1.91	1.89	1.93	1.88	0.08	.926
Beef	2.55	2.65 ^{a,b}	2.39 ^a	2.77 ^b	2.70	.068
Fish	5.37	5.27	5.32	5.53	2.27	.105
Pork	0.87	0.98	0.88	0.83	0.07	.933
Goat	1.59	1.58	1.65	1.49	0.68	.506
Lamb	0.83	0.68 ^b	0.82 ^{a,b}	0.96 ^a	2.86	.058

Notes: *Range is from 0 (never) to 6 (four times or more a week). Different lower case superscripts indicate significantly different means between the segments using independent sample one-way analysis of variance followed by Tukey's HSD test.

TABLE 7 Meat consumption frequency*

consumers can be segmented based on their use and trust in information sources and on which aspects these segments differ from each other in terms of the information they searched for, their sociodemographic characteristics, and chicken meat consumption.

In general, consumers used external information to guide their purchase decisions. In particular, the results show that personal sources were the most frequently used channels for seeking information about chicken meat. Personal sources include the respondent's social environment (i.e., friends, family, colleagues, and sellers). These sources are often used by respondents, especially in terms of everyday information seeking. This result could be explained in the context of the Ghanaian culture. Ghana is a collectivist country, where people particularly emphasize on social relations and bonding and thus are more likely to share information with their close reference groups. This is also reflected in the perceived trustworthiness of such sources. Indeed, previous research has shown that consumers tend to rely most on personal sources. For instance, Pieniak et al. (2007) found that European consumers frequently used personal sources of information such as family and friends, and fishmonger about fish. In contrast, other studies found governmental institutions, official websites and brochures, and culinary sources (i.e., cooking books and cooking programs) as the most important source of information for food consumers in the Netherlands, Switzerland,

and Poland, respectively (Kornelis et al., 2007; Visschers et al., 2013; Żakowska-Biemans et al., 2017). However, it is worth mentioning that all of these studies found personal sources to be the second most important channel of information. Thus, we can conclude from these findings that regardless of the geographic region and food type, personal sources (word-of-mouth) still play a vital role in making informed decisions about food.

The electronic media sources (i.e., television and radio) also play an important role in respondents' information seeking. These were the second most frequently used channels of information. Information from media sources such as television or radio may be acquired purposively or incidentally. However, when encountered incidentally, it could act as a catalyst for information seeking (Williamson, 1998). Since mass media messages are able to reach large audiences, informational campaigns targeting consumers through electronic media sources would be effective.

Moreover, official and commercial sources such as health professionals, government, newspapers, internet, and magazines were less frequently used as information channels about chicken. The low use of official sources such as health professionals and the government is consistent with other studies (Pieniak et al., 2007; Visschers et al., 2013). However, this finding is in marked contrast to the study of Kornelis et al. (2007), where governmental institutions were the

most important sources of information. Given the low use of these sources, it would not seem useful to target consumers with information about chicken through these sources. Nevertheless, health professionals and institutions of government were reported as highly trusted sources despite their low usage. Therefore, they can serve as complementary channels for the dissemination of information, especially those related to health and safety. Since they are trusted, identifying, and removing the obstacles to their regular use, are of paramount interest. In relation to information cues, consumers were much interested in searching for information about health, safety, and quality. These factors will be more critical in their purchasing and consumption decisions. Thus, information campaign emphasizing health, safety, and quality will be important.

Based on the sequence variables, we identified three distinct consumer segments: cautious consumers (18.2%), enthusiastic consumers (53.0%), and optimistic consumers (28.8%). The number of clusters identified compares equally with previous studies in European countries, which employed information use and trust variables in clustering fish and beef consumers (Pieniak et al., 2007; Żakowska-Biemans et al., 2017). The identified groups also differed significantly with respect to the type of information they seek and various characteristics such as education, employment, income, and chicken consumption.

Consumers belonging to Segment 1 (cautious consumers) displayed low use and trust in external information sources. The segment of cautious consumers was perhaps convinced that the information they needed was at least available through personal sources and were less willing to engage actively in seeking information from other sources. Besides, it was the least interested in information cues about chicken and constituted the smallest group. This result is in line with past research on European consumers (Kuttschreuter et al., 2014; Visschers et al., 2013). Visschers et al. (2013) identified four consumer groups namely "official information users", "internet users", "moderate users" and "uninterested" based nutrition information use. The uninterested segment (28%) was the least interested in using nutrition tables or other sources for nutrition information and displayed the lowest usage of nutrition information sources. Likewise, Kuttschreuter et al. (2014) identified four segments based on their inclination to use different channels to seek information about food-related risks and labelled the segments as 'high cross-channel inclination', 'established channel inclination', 'moderate cross-channel inclination', and 'low cross-channel inclination'. They found that the low cross-channel inclination (19%) was the least interested in seeking additional information about vegetable risks. Against this background, Segment 1 members may not be only cautious but also uninterested.

Enthusiastic consumers (Segment 2) are perhaps relatively easy to reach for communicators as they exhibited high use and trust in information channels. This is a substantial segment in our study, accounting for more than half of the sample. Consumers in this segment searched actively for information about chicken products (high involvement) and seemed to be the most demanding in terms of information type such as health, quality, safety, and nutrition

information. A similar group of consumers who are very active in their search and use of information and are particularly interested in health, quality, and nutrition information has also been identified in previous literature (Kuttschreuter et al., 2014; Pieniak et al., 2007; Żakowska-Biemans et al., 2017). Pieniak et al. (2007) and Żakowska-Biemans et al. (2017) also referred to this group of consumers as 'enthusiasts'. This group mainly demonstrated their interests in the use of personal (friends, colleagues, family, and sellers) and electronic media (TV and radio) sources. Compared to the other segments (Segments 1 and 3), consumers in Segment 2 have a strong tendency to use information from official and commercial sources. Furthermore, consumers in this segment were more highly educated compared to the cautious and optimistic consumers. This result is in agreement with the study of Pieniak et al. (2007). In contrast, however, Żakowska-Biemans et al. (2017) found a low level of education amongst members of the highly involved segment. Similar to Segment 2, the first two sources used by consumers in Segment 3 (optimistic consumers) are personal and electronic media. However, the examination of the trust levels revealed that this group has a strong tendency to consult electronic media sources due to the high level of trust in these sources.

Consumers are inspired to select food products for an increasing number of motives. Therefore, understanding the motives behind consumer purchase decisions is important for communicating simple messages to consumers. To this end, our study shows that taste, suitability to prepare many dishes, convenience, and healthiness were indicated as primary motives to buy chicken meat. Taste and suitability to prepare many dishes were reported as primary motives to buy other meat products such as beef (Żakowska-Biemans et al., 2017). The results on consumers' motivations, however, varied according to cluster membership. For example, the price was the least factor affecting purchasing decisions of consumers in Segment 2, but it was the second and first most important factor for segments 1 and 3, respectively. This emphasizes the importance of considering different combinations of motives that matter to consumers when communicating messages. Thus, marketers who want to tailor their products to a specific segment should communicate a combination of motives that matter to consumers in that segment, to increase consumer preference and consumption.

Concerning the consumption frequency of meat products, the results show that fish, followed by chicken meat, and beef are the most frequently consumed meat products. The result is in agreement with Sumberg, Jatoe, Kleih, and Flynn (2016), who found that half of the Ghanaian households' expenditure on meat products is allocated to fish, followed by poultry and beef with the same share. Focusing on chicken meat, which is the interest of this study, we find that the segment characterized by low information seeking and trust (cautious consumers) portrayed a lower consumption of chicken meat. Therefore, a possible explanation for their low inclination to seek additional information about chicken meat could be attributed to a lower level of consumer involvement and consumption (Verbeke, 2005). In agreement with previous studies where consumers with a high level of involvement were associated with the

highest level of consumption (Kuttschreuter et al., 2014; Pieniak et al., 2007), our findings show that consumers characterized by high information usage and trust (enthusiasts) had the highest level of chicken consumption.

Given that consumers make many food-related decisions every day, coupled with the diversity of food products, they are unlikely that individuals allocate substantial cognitive effort and time to each decision (Adamowicz & Swait, 2013; Ardeshiri, Sampson, & Swait, 2019). Similarly, consumers are uncertain about the quality and safety of food products (Verbeke, 2005). Nevertheless, this does not suggest that consumers are asking for the provision of very detailed and too many information cues as this might lead to the risk of information overload and potential adverse effects resulting from consumer indifference or loss of confidence (Verbeke, 2005). In the case of meat, it has been shown that consumers are selective in paying attention to information in general (Verbeke & Ward, 2006). This is also demonstrated by our findings as we find that different consumer segments pay attention to different types of information. Therefore, information provision about chicken to consumers is likely to be effective when it is targeted and meets the needs and expectations of the target audience.

Our study has some limitations that should be noted when interpreting the results and their contributions. First, our study focused on urban consumers, which limits the potential to generalize the findings to the Ghanaian population. Second, we were unable to link the information cues to specific information channels. For example, whether consumers usually get price information from sellers or safety information from radio, etc. In future research, it would be interesting to match the type of information consumers seek to the source. Last, since respondents were asked to report their behaviour (self-reporting), responses may be affected by recall bias (e.g., frequency of information use and consumption) and social desirability bias (e.g., trust in information sources), which is inherent in most face-face surveys.

6 | CONCLUSIONS

To conclude, the current blanket nationwide campaign which aims to provide information to consumers to increase the consumption of domestic chicken meat may appeal to certain consumers, but not all, as our results suggest. When the aim is to reach all consumers, 'cautious consumers' require special attention as they are likely to become unaware of the provided information. With their low usage of various information sources, low trust, and low interest in various information cues, trying to consciously stimulate and educate this group with general information about chicken will not improve their consumption behaviour. Based on the findings, personal sources (e.g., sellers) may be more useful to target consumers in this segment since these sources were the most consulted and trusted. Likewise, informational campaigns emphasizing taste and price may be more effective to change this segment's chicken consumption behaviour. In addition, communication strategies ought to ensure that

the tone and language of the message match the education levels of the consumer groups. Since members of this group have low levels of education, the messages should be easily interpretable and understandable.

Information campaigns that target consumers in Segment 2 (enthusiastic consumers) are likely to succeed in increasing the consumption of domestic chicken. This is because members of this group are relatively easy to reach through the various information sources, higher educated and with high-income level than the other groups. Moreover, they are not much concerned about prices and have a favourable disposition towards chicken meat consumption. However, they attached high importance to health, quality, safety, and nutritional information and are primarily motivated by taste to buy chicken. This means that providing unambiguous and more accurate information on these aspects about chicken could improve their consumption. The third segment (optimistic consumers) may also not be very difficult to reach by communicators because of their use and high trust in certain channels such as electronic media. For this group, advertisements and information campaigns through radio and television may be most effective because they are regarded as reliable information sources. On the whole, the identification of three distinct groups of poultry consumers based on information use and trust, provide evidence to communicators to carefully target relevant information that aligns with the background of recipients. Finally, the findings from this study also contribute to consumer behaviour literature from a developing country perspective.

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CONFLICT OF INTEREST

The authors have declared no conflicts of interest for this article.

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REFERENCES

- Adamowicz, W. L., & Swait, J. D. (2013). Are food choices really habitual? Integrating habits, variety-seeking, and compensatory choice in a utility-maximizing framework. *American Journal of Agricultural Economics*, 95(1), 17–41. <https://doi.org/10.1093/ajae/aas078>
- Akerlof, G. A. (1970). The market for "lemons": Quality uncertainty and the market mechanism. *The Quarterly Journal of Economics*, 84(3), 488–500. <https://doi.org/10.2307/1879431>
- Ardeshiri, A., Sampson, S., & Swait, J. (2019). Seasonality effects on consumers' preferences over quality attributes of different beef products. *Meat Science*, 157, 107868. <https://doi.org/10.1016/j.meatsci.2019.06.004>
- Asante-Addo, C., & Weible, D. (2019, September). "Everybody likes chicken" – A focus group study of consumers in Ghana. Paper presented at the 59th Annual Conference of the German Association

- of Agricultural Economists (GEWISOLA), Braunschweig, Germany. Retrieved from <https://ageconsearch.umn.edu/record/292291>
- Engel, J. F., Blackwell, R. D., & Miniard, P. W. (1993). *Consumer behaviour* (8th ed.). Fort Worth, TX: Dryden Press.
- Daily Graphic. (2018, August 30). 'Eat Ghana chicken campaign' to boost local poultry production. *Daily Graphic*. Retrieved from <https://www.graphic.com.gh/>
- Field, A. (2009). *Discovering statistics using SPSS*. Los Angeles, CA: Sage.
- Font-i-Furnols, M., & Guerrero, L. (2014). Consumer preference, behavior and perception about meat and meat products: An overview. *Meat Science*, 98(3), 361–371. <https://doi.org/10.1016/j.meatsci.2014.06.025>
- Grunert, K. G. (2005). Food quality and safety: consumer perception and demand. *European Review of Agricultural Economics*, 32(3), 369–391. <https://doi.org/10.1093/eurrag/jbi011>
- Grunert, K. G., & Wills, J. M. (2007). A review of European research on consumer response to nutrition information on food labels. *Journal of Public Health*, 15(5), 385–399. <https://doi.org/10.1007/s10389-007-0101-9>
- Hair, J., Black, W., Babin, B., Anderson, R., & Tatham, R. (2006). *Multivariate data analysis*. Upper Saddle River, NJ: Pearson Education Inc.
- Hung, Y., Grunert, K. G., Hoefkens, C., Hieke, S., & Verbeke, W. (2017). Motivation outweighs ability in explaining European consumers' use of health claims. *Food Quality and Preference*, 58, 34–44. <https://doi.org/10.1016/j.foodqual.2017.01.001>
- Jungermann, H., Pfister, H. R., & Fischer, K. (1996). Credibility, information preferences, and information interests. *Risk Analysis*, 16(2), 251–261. <https://doi.org/10.1111/j.1539-6924.1995.tb00783.x>
- Kornelis, M., De Jonge, J., Frewer, L., & Dagevos, H. (2007). Consumer selection of food-safety information sources. *Risk Analysis*, 27(2), 327–335. <https://doi.org/10.1111/j.1539-6924.2007.00885.x>
- Kotler, P., & Armstrong, G. (2011). *Principals of marketing* (13th ed.). Upper Saddle River, NJ: Pearson.
- Kotler, P., & Keller, K. L. (2012). *Marketing Management* (14th ed.). London: Pearson Education.
- Kuttuschreuter, M. Ö., Rutsaert, P., Hilverda, F., Regan, Á., Barnett, J., & Verbeke, W. (2014). Seeking information about food-related risks: The contribution of social media. *Food Quality and Preference*, 37, 10–18. <https://doi.org/10.1016/j.foodqual.2014.04.006>
- Lewis, J. D., & Weigert, A. J. (1985). Social atomism, holism, and trust. *The Sociological Quarterly*, 26(4), 455–471. <https://doi.org/10.1111/j.1533-8525.1985.tb00238.x>
- Liu, R., Pieniak, Z., & Verbeke, W. (2014). Food-related hazards in China: Consumers' perceptions of risk and trust in information sources. *Food Control*, 4(6), 291–298. <https://doi.org/10.1016/j.foodcont.2014.05.033>
- Loudon, D. L., & Della Bitta, A. J. (1993). *Consumer behavior: Concepts and applications* (4th ed.). New York, NY: McGraw-Hill.
- Morrow, J. L. Jr., Hansen, M. H., & Pearson, A. W. (2004). The cognitive and affective antecedents of general trust within cooperative organizations. *Journal of Managerial Issues*, 16(1), 48–64.
- Niva, M., Vainio, A., & Jallinoja, P. (2017). Barriers to increasing plant protein consumption in Western populations. In F. Mariotti (Ed.), *Vegetarian and plant-based diets in health and disease prevention* (pp. 157–171). London: Elsevier, Academic Press.
- Peschel, A. O., Grebitus, C., Steiner, B., & Veeman, M. (2016). How does consumer knowledge affect environmentally sustainable choices? Evidence from a cross-country latent class analysis of food labels. *Appetite*, 106(1), 78–91. <https://doi.org/10.1016/j.appet.2016.02.162>
- Pieniak, Z., Vanhonacker, F., & Verbeke, W. (2013). Consumer knowledge and use of information about fish and aquaculture. *Food Policy*, 40, 25–30. <https://doi.org/10.1016/j.foodpol.2013.01.005>
- Pieniak, Z., Verbeke, W., Scholderer, J., Brunsø, K., & Olsen, S. O. (2007). European consumers' use of and trust in information sources about fish. *Food Quality and Preference*, 18(8), 1050–1063. <https://doi.org/10.1016/j.foodqual.2007.05.001>
- Salaün, Y., & Flores, K. (2001). Information quality: Meeting the needs of the consumer. *International Journal of Information Management*, 21(1), 21–37. [https://doi.org/10.1016/S0268-4012\(00\)00048-7](https://doi.org/10.1016/S0268-4012(00)00048-7)
- Solomon, M. R., Bamossy, G., Askegaard, S., & Hogg, M. K. (2010). *Consumer behaviour: A European perspective* (4th ed.). New York, NY: Prentice Hall/Financial Times.
- Sumberg, J., Jatoo, J., Kleih, U., & Flynn, J. (2016). Ghana's evolving protein economy. *Food Security*, 8(5), 909–920. <https://doi.org/10.1007/s12571-016-0606-6>
- Teisl, M. F., & Roe, B. E. (1998). The economics of labeling: An overview of the issues for health and environmental disclosure. *Agricultural and Resource Economics Review*, 27(2), 140–150.
- Thiede, M. (2005). Information and access to health care: Is there a role for trust? *Social Science & Medicine*, 61(7), 1452–1462. <https://doi.org/10.1016/j.socscimed.2004.11.076>
- Vainio, A. (2019). How consumers of meat-based and plant-based diets attend to scientific and commercial information sources: Eating motives, the need for cognition and ability to evaluate information. *Appetite*, 138, 72–79.
- Verbeke, W. (2005). Agriculture and the food industry in the information age. *European Review of Agricultural Economics*, 32(3), 347–368. <https://doi.org/10.1093/eurrag/jbi017>
- Verbeke, W. (2008). Impact of communication on consumers' food choices. *Proceedings of the Nutrition Society*, 67(03), 281–288. <https://doi.org/10.1017/S0029665108007179>
- Verbeke, W., & Ward, R. W. (2006). Consumer interest in information cues denoting quality, traceability and origin: An application of ordered probit models to beef labels. *Food Quality and Preference*, 17(6), 453–467. <https://doi.org/10.1016/j.foodqual.2005.05.010>
- Visschers, V. H. M., Hartmann, C., Leins-Hess, R., Dohle, S., & Siegrist, M. (2013). A consumer segmentation of nutrition information use and its relation to food consumption behaviour. *Food Policy*, 42, 71–80. <https://doi.org/10.1016/j.foodpol.2013.07.003>
- Wedel, M., & Kamakura, W. A. (2000). *Conceptual and methodological foundations*. Boston: Kluwer.
- Williamson, K. (1998). Discovered by chance: The role of incidental information acquisition in an ecological model of information use. *Library & Information Science Research*, 20(1), 23–40. [https://doi.org/10.1016/S0740-8188\(98\)90004-4](https://doi.org/10.1016/S0740-8188(98)90004-4)
- Żakowska-Biemans, S., Pieniak, Z., Gutkowska, K., Wierzbicki, J., Cieszyńska, K., Sajdakowska, M., & Kosicka-Gębska, M. (2017). Beef consumer segment profiles based on information source usage in Poland. *Meat Science*, 124, 105–113. <https://doi.org/10.1016/j.meatsci.2016.11.001>
- Zander, K., & Hamm, U. (2012). Information search behaviour and its determinants: The case of ethical attributes of organic food. *International Journal of Consumer Studies*, 36(3), 307–316. <https://doi.org/10.1111/j.1470-6431.2011.00998.x>

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