Data Article

Ethical issues in poultry production – Datasets from a German consumer survey

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**A R T I C L E   I N F O**

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**A B S T R A C T**

The killing of day-old chicks is controversially discussed in poultry keeping, science, politics, and society. The present survey data contributes to understand consumers' attitudes towards ethical issues in chicken production, especially the killing practice and dual purpose chickens as alternative to avoid such killing. Information on the various topics is provided: Consumer purchase pattern of eggs and chicken meat, perception of animal welfare and protection issues, knowledge and perception of killing day-old chicks, attitudes towards dual purpose chickens as an alternative to killing day-old chicks, and socio-demographic data. The data set contains standardized responds of 1000 telephone interviews. These interviews were conducted with German consumers in spring 2016. The survey data were in part analysed with cluster analysis to categorize consumers according to their purchasing criteria for dual chicken products, and assessing which socio-economic variables best described each of the consumer categories. The survey raw data, a file with the questionnaire and the codes, the analysed data, and additional files for understanding the cluster analysis are hosted in the public repository Open Research Data https://www.doi.org/10.4228/ZALF.DK.106.

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Specifications Table

| Subject | Agricultural and Biological Sciences: Food Science, Social Sciences (General) |
|---------|---------------------------------------------------------------------------|
| Specific subject area | Consumer behaviour and attitudes, sustainable agricultural research |
| Type of data | Tables, figure, text |
| How data were acquired | Survey data via CATI (Computer Assisted Telephone Interviewing) |
| Data format | Raw data, analysed data |
| Parameters for data collection | Cleaning of raw data, separate weighting of region and crossed weighting of sex and age; analysed data: consumer clusters according to purchasing criteria regarding sustainability of dual-purpose chickens; socio-economic factors as factors affecting consumer categories |
| Description of data collection | Raw data: 43-question survey; random sampling method; use of ADM (Working Group of German Market and Social Research Institutes) sample system; data generation with CATI software; plausibility check during interviews to minimize possible errors' sources Analysed data: consumer clusters; purchasing criteria linked to purchasing behaviour and socio-economic variables in consumer categories: agglomerative hierarchal cluster analysis; Gower dissimilarities; Ward's clustering method |
| Data source location | Germany, Berlin and the Federal State of Brandenburg |
| Data accessibility | Repository name: Open Research Data Data identification number: 10.4228/ZALFD.K106 Direct URL to data: https://www.doi.org/10.4228/ZALFD.106 |
| Related research article | M. Busse, M. L. Kernecker, J. Zscheischler, F. Zoll, R. Siebert, Ethical Concerns in Poultry Production: A German Consumer Survey About Dual Purpose Chickens. J Agric Environ Ethics 32, 905–925 (2019). https://doi.org/10.1007/s10806-019-09806-y |

Value of the Data

- The data provides a first-hands survey that reports on consumers’ perception of highly relevant ethical issues in poultry production and on attitudes towards alternatives of killing day-old chicks.
- Data allows comparing consumers' purchase pattern with stated attitudes regarding ethical issues in poultry productions.
- Data set offers rich data to apply various alternative statistical approaches, e.g., to categorize consumers or estimate consumers’ preferences regarding chicken products.
- Data could serve to develop marketing and communication strategies for innovative and sustainable poultry production.

1. Data Description

The present survey data contains information on consumers’ attitudes towards ethical issues in poultry production, the killing of day-old chicks, and alternative solutions to avoid such killing (especially dual purpose chickens). The data set encompasses various topics such as consumer purchase pattern of eggs and chicken meat, perception of animal welfare and protection, knowledge and perception of chicks killing, attitudes towards dual purpose chickens and its products, and socio-demographic data (Table Consumer_survey_raw_data).

The questionnaire contained four question sets 1) consumer purchase pattern of eggs and chicken meat, 2) attitudes towards ethical issues (animal welfare and protection) in poultry production, 3) attitudes towards the killing of day-old chicks and dual purpose chickens including willingness to buy and pay, and 4) socio-demographic data. The 43 questions in total were almost exclusively closed questions. A supplementary file provides all questions of the questionnaire (second column) and the codes of variables for raw data (Table Codes_raw_data).
An additional data set contains the results of a cluster analysis, which aimed at identifying consumers groups based on purchasing criteria for dual purpose chicken products and linking socio-economic variables to these groups to better identify which types/motivation the consumer groups may have had (Table Cluster_analysis). Two supplementary files describe these clusters in detail (Table Cluster_description, Figure Dendrogram). The R code for the cluster analysis is provided as data file (Text R_Script). All data files are listed in Table 1.

### Table 1
List of provided data files.

| File name                  | Description                              | Data type       | Sample size (n) |
|----------------------------|------------------------------------------|-----------------|-----------------|
| Consumer_survey_raw_data   | Raw data of consumer survey              | Table, CSV file | 1,000           |
| Codes_raw_data             | Code file with questionnaire and variables for raw data | Table, CSV file | —               |
| Cluster_analysis           | Results of cluster analysis              | Table, CSV file | 834             |
| Cluster_description        | Data for cluster description             | Table, CSV file | 834             |
| R_Script                   | R code                                   | Text file       | —               |
| Dendrogram                 | Dendrogram of cluster analysis           | Figure, PDF file | 834             |

### Table 2
List of sample characteristics.

| Sample characteristics                                           | Size (n= 1000) |
|------------------------------------------------------------------|----------------|
| Berlin°                                                           | 583            |
| Brandenburg°                                                      | 417            |
| Women°                                                           | 514            |
| Men°                                                             | 486            |
| Age group 18-24°                                                  | 74             |
| Age group 25-35°                                                  | 190            |
| Age group 36-25°                                                  | 150            |
| Age group 46-65°                                                  | 355            |
| Age group older than 65°                                          | 231            |
| University degree                                                | 406            |
| Completed vocational training                                    | 262            |
| Degree at a professional, master or technical school              | 118            |
| Completed vocational college                                     | 101            |
| No professional qualification                                    | 45             |
| Other educational level                                          | 68             |

* weighted data

2. Experimental Design, Materials, and Methods

To generate the data set 1000 computer assisted telephone interviews (CATI) with consumers were conducted in spring 2016. The participants were over the age of 18 and lived in Berlin or the Federal State of Brandenburg (Germany). The standardized interviews and the pretest (n= 50) were carried out by a market research institute (forsa Gesellschaft für Sozialforschung und statistische Analysen mbH). The average duration of interviews was 22 minutes. The consumers were selected by random sampling, namely last birthday method. To identify interviewees the ADM (Working Group of German Market and Social Research Institutes) sample system was used. The data set was generated with software for CATI. To minimize possible errors sources the plausibility was checked during the interviews. The characteristics of the sample are described in Table 2 and [1]. The data has been weighted with a separate weighting of region and crossed weighting of sex and age (Table 3).

All statistical analyses were done in the R interface (R Core Team, 2016). The R code is provided as a data file (R_code). To identify consumer groups according to their purchasing criteria for dual-purpose chicken products, we used cluster analysis with the “cluster” package [2].
Table 3
Weightings of the sample (separate weighting of region and crossed weighting of sex and age).

|                  | Unweighted | Weighted region |
|------------------|------------|-----------------|
| Berlin           | 620        | 583             |
| Brandenburg      | 380        | 417             |
| Sum              | 1000       | 1000            |

|                  | Unweighted | sex * age       |
|------------------|------------|-----------------|
| M / 18 - 24      | 7          | 37              |
| M / 25 - 35      | 61         | 96              |
| M / 36 - 45      | 78         | 77              |
| M / 46 - 65      | 195        | 177             |
| M / 65+          | 92         | 99              |
| F / 18 - 24      | 18         | 37              |
| F / 25 - 35      | 64         | 94              |
| F / 36 - 45      | 82         | 74              |
| F / 46 - 65      | 255        | 177             |
| F / 65+          | 148        | 132             |
| Sum              | **1000**   | **1000**        |

M – Male; F – female

used survey data that was categorical, and could be coded into 0 or 1 if responses were in disagreement or agreement with question items. All values were based on the same scale, so no transformations were necessary. Agglomerative hierarchal cluster analysis was the most appropriate for our study. This type of cluster analysis begins with single data points and then groups these points together successively based on their similarity. Gower dissimilarities were used as the measure of association between data points. We used Ward’s clustering method, which identifies clusters by minimizing the variance to the geometric centroids of the groups. We conducted several rounds of cluster analyses to identify the best number of clusters for the data set, looking closely at the results from 3 to 7 clusters before finalizing the analyses with 5 clusters. Subsequently, we chose other questionnaire items related to consumption behaviour (frequency of chicken meat and egg consumption, and where chicken meat and eggs were purchased) and socio-economic data (gender, age, number of people in household, and income) to better characterize the clusters. To do so statistically, we used chi-square tests to test the relationships between these data and the clusters that had been identified in the previous step.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships which have, or could be perceived to have, influenced the work reported in this article.

CRediT authorship contribution statement

Maria Busse: Conceptualization, Methodology, Investigation, Data curation, Validation, Writing - original draft. Maria Lee Kernecker: Methodology, Data curation, Formal analysis, Visualization, Writing - original draft. Rosemarie Siebert: Conceptualization, Writing - review & editing, Supervision, Project administration, Funding acquisition.
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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.dib.2020.105748.

References

[1] M. Busse, M.L. Kernecker, J. Zscheischler, F. Zoll, R. Siebert, Ethical Concerns in Poultry Production: A German Consumer Survey About Dual Purpose Chickens, J Agric Environ Ethics 32 (2019) 905–925 https://doi.org/10.1007/s10806-019-09806-y.

[2] M. Maechler, P. Rousseeuw, A. Struyf, M. Hubert, K. Hornik, Cluster: Cluster Analysis Basics and Extensions, R package version 2.0 (2018) 7-1.