

Co-production of Business Models for Pasture-Based Beef in North-East Germany – Integrating Consumers Preferences

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ABSTRACT

Pasture-based cattle rearing systems provide numerous ecosystem services and meet current consumer demands for animal welfare. However, the development of regional value chains from pasture-based beef are inhibited in economically less developed regions, such as North East Germany, as they lack regional slaughtering and processing capacities and show weak cooperation between stakeholders. The real world lab "WertWeideVerbund" aims to co-produce new beef value chains and business models, addressing consumer demands and value chain actors' interests at the same time. Target group specific and regionally adapted communication approaches are part of these business models and aimed at unlocking market potentials. We conducted an online survey to define consumer groups for pasture-based beef, evaluate their preferences for communication approaches and define their willingness to pay for those products. The questionnaire was partly based on previously collected qualitative data from focus groups and on an extended literature review of existing quality standards for pasture-based beef. The survey revealed different consumer segments based on demographics, frequency of beef purchase, general shopping behaviour and willingness to pay for pasture-raised beef. Respondents preferred communication approaches with a focus on animal welfare and were not particularly interested in regional origin and ranked it equal to other aspects such as information on producers, quality and taste, and biodiversity and climate protection, indicating that there is a demand for further explanation on the advantages of regional production.

Keywords: pasture-raised beef, communication, marketing, animal welfare, regional origin

1 Introduction

Pasture-based cattle rearing systems provide numerous ecosystem services and meet current consumer demands for animal welfare. Pasture can contribute to a heterogeneous landscape providing habitat for different species, thus enhancing biodiversity and offering erosion and flood protection. Depending on the management, pastures can sequester carbon and create an aesthetic value by preserving a cultural landscape (Rodríguez-Ortega *et al.*, 2014). At the same time, pasture-raised beef gives us high quality, animal welfare appropriate meat. Grazing cattle are exposed to less stress than those growing up in sheds and have a more natural feed base (Hocquette *et al.*, 2014). A short value chain with shorter transport routes from farm to slaughterhouse can also reduce the stress cattle are facing, which contributes to improving meat quality (Hocquette *et al.* 2014).

The Federal state of Brandenburg (Germany) offers good conditions for pasture-based rearing systems (MLUK, 2021). However, farmers rearing cattle do not benefit from this as they sell the offspring at eight months instead of raising and fattening them. Slaughtering and processing capacities in the region are lacking as they were cut back following German reunification. Furthermore, there is a cooperation deficit between agriculture, processing and bulk purchasers (Baumgarten, 2020).

These challenges are taken up in the real world lab "WertWeideVerbund". What is required to meet the

sustainability challenges described above is a holistic research approach, including co-design and co-creation with various stakeholders (Linder *et al.*, 2003). Within the WertWeideVerbund, researchers and practitioners aim to identify and test different approaches to establishing suitable regional business models for pasture-raised beef value chains in the North-East of Germany, focusing on the Federal State of Brandenburg.

Such business models have to take consumer expectations and needs into account: First, sustainable business models need a target group-oriented communication strategy to raise the marketing potential for sustainably produced beef in the Berlin Brandenburg metropolitan region. At the same time, consumer expectations of sustainable animal husbandry should be fulfilled and reflected in the quality standards of beef production.

With this paper we aim to define consumer groups in Berlin-Brandenburg, test communication approaches and define their willingness to pay (WTP) for pasture-raised beef. The results will feed into the development of production standards and communication strategies for pasture-based beef in the Federal State of Brandenburg, as a vital part of new business models for this product.

Starting with an overview of consumer attitudes towards pasture-based beef, focusing on literature from Germany and German speaking countries as part of the regional focus of this study, we will go on to provide insights into an online survey that we have conducted. The results section includes a characterisation of a potential target group for pasture-based beef, their preferred communication approaches and the WTP for those products. In the discussion section, we look at potentials and challenges with regard to consumer preferences and the production standards described for beef production, in order to gain insights for common production standards within the WertWeideVerbund real world lab.

2 Important aspects when buying beef

Various studies reveal that different considerations are taken into account when purchasing beef such as price, taste, freshness and shelf life, as well as additional benefits such as animal welfare, biodiversity conservation and regional or organic production. Price is generally ranked highest when the question is asked indirectly, while in (cognitively) more conscious decisions, additional benefits such regional origin and animal welfare are more important aspects (Korn and Hamm, 2014; Christoph-Schulz *et al.*, 2017; Markova-Nenova and Wätzold, 2018; Stampa *et al.*, 2020)

Good taste has been identified in some studies as the most important element in the purchasing decision and is accordingly rated as being particularly important ((Korn and Hamm, 2014, see also Fernqvist and Ekelund (2014) and Baba *et al.* (2015)) Consumers perceive a positive correlation between animal welfare and good taste (Heise and Theuvsen, 2017). We assume that consumers also associate pasture-raised beef with tasty meat.

Consumers tend to be less clear about the health aspects of beef. According to van Wezemaal *et al.* (2010), beef is considered nutrient-rich and rich in omega 3 acids. At the same time, high consumption is associated with possible carcinogenic effects. Consumers consider meat from pasture-raised cattle to be healthier than beef from conventional farming (Baba *et al.*, 2015).

Animal welfare meat products have a low market share and many consumers are unaware of the differences between the labels on meat from species-appropriate husbandry (Zühlendorf *et al.*, 2016, Pirsich *et al.*, 2017). The type of farming is the most important indicator of appropriate animal welfare for consumers (Klink-Lehmann and Langen, 2019). While conventional farming is perceived negatively (Heise and Theuvsen, 2017), pasture farming and suckler cow husbandry are held in high esteem and are described as an ideal (Risius and Hamm, 2017, Christoph-Schulz, 2018).

The issue of slaughter plays a subordinate role among consumers. Many consumers do not want to actively deal with the topic (Klink and Langen, 2015). Slaughterhouses have a very poor reputation compared to other value-adding stages in the meat industry (Albersmeier and Spiller, 2010). Consumers have a negative view of animal transportation, as they assume that animals suffer from stress and do not have enough space or food while in transit (Wille *et al.*, 2017).

Regional origin has less influence on the decision to purchase than other parameters such as taste and freshness (Heinze *et al.*, 2014). Nonetheless, regional labelling has a broader appeal in the population than organic labelling (Hempel and Hamm, 2016, Schulze-Ehlers and Purwins, 2016). Wägli and Hamm (2013) show that regional feed origins evoke positive associations among consumers, such as short transport routes, supporting the regional economy and a transparent origin. However, even among organic consumers, regional origin of feed plays a minor role compared to other feed characteristics. The labelling

of regional feed generates an increase in the willingness to pay, especially among consumers with an affinity for organic products (Profeta and Hamm, 2019).

Stampa *et al.* (2020) point out that biodiversity conservation in connection with pasture management is currently still somewhat underrepresented in research and that there are corresponding research gaps. Korn and Hamm (2014) show that the "preservation of the landscape through grazing" and "promotion of biodiversity" aspects play a rather subordinate role for consumers compared to freshness and taste. When asked about the additional benefit of organic production for biodiversity conservation, consumers responded that biodiversity protection is less important than other benefits such as taste and health (Zander and Hamm, 2010, Stolz *et al.*, 2017).

3 Potential consumer groups

Several studies show there is no correlation between important socio-economic factors such as gender, age and income, and the intention to buy pasture-based products (Stampa *et al.*, 2020). However, some characteristics can be derived from existing literature.

Women have a more positive attitude towards factors relevant to pasture farming (e.g. animal welfare, regional origin) (Christoph-Schulz *et al.*, 2017, Stampa *et al.*, 2020). Zühlsdorf *et al.* (2016) state that a higher meat consumption can be attributed to older men, people with a lower level of education and middle income. Consumers interested in high quality meat and regularly buying from butcher shops tend to be older females with a higher income who generally value high quality products (Schulze and Spiller, 2008, Stampa *et al.*, 2020).

Existing literature shows there are many consumer aspects that would favour the introduction of regional pasture-raised beef to the market. For our communication concept, we are focusing on animal welfare, regional origin and biodiversity, and climate protection to obtain reliable information for pasture-raised beef in the regional context. In addition, we want to get a clearer picture of the potential target group, as well as the willingness to pay for pasture-raised beef.

4 Material and methods

We conducted an online survey in October 2021 in the study region. We aimed at a representative distribution for this population based on the micro census Berlin Brandenburg (Amt für Statistik Berlin-Brandenburg, 2019, BWV, 2020). The population consisted of all persons living in private households in Berlin and Brandenburg, who were 18 years or older at the time of the survey and consumed beef at least once a month.

A panel provider recruited the participants (*bilendi*). Participants were given a monetary incentive of about €1.50. 826 respondents completed the questionnaire and of these 743 respondents were included in the analysis. The remaining participants were excluded, either as speeders, due to data quality issues or technical errors (Meade and Craig, 2012, DeSimone *et al.*, 2015). There was a slight over-recruitment of academics. In the end, residents from neighbouring federal states in North Eastern Germany had to be recruited (8.6%) in order to achieve the target sample size of n=800.

Table 1 shows an overview of demographic key figures.

Table 1.
Key demographics from the online survey, missing % answered "no information"

Key demographics	Distribution in %
Gender	Male: 51.1 Female: 48.6 Diverse: 0.3
Age in years	18-24: 3.9 25-39: 24.8 40-59: 33.6 over 60: 37.7
State of residents	Berlin: 57.7 Brandenburg: 33.8 Mecklenburg-Vorpommern: 1.2 Sachsen: 5.2 Sachsen-Anhalt: 2.2
Education	Completed vocational training: 49.5 Completed studies: 37.1
Household net income in €	Under 1,000: 5.7 1,000 – 1,499: 12.9 1,500 – 1,999: 13.6 2,000 – 2,499: 15.3 2,499 – 3,000: 9.2 3,000 – 3,499: 10.4 3,500 – 4,000: 12.8 Over 4,000: 19.0

The questionnaire focused on beef purchase and consumption with an emphasis on pasture-based beef. It consisted of 12 sections: Data protection agreement, beef consumption as a screening question, demographics, attitudes and values, general purchasing behaviour, beef purchase, preferred communication channels, willingness to pay for pasture-raised beef (Gabor and Granger, 1966), purchase inhibitors for pasture-based beef, communication approaches including a prioritisation using a maximum difference scaling (Louviere *et al.*, 1994) and potential changes to beef purchasing behaviour in the future. Several items within the questionnaire originated from prior focus group discussions* and the evaluation of existing beef quality standards. These were based on an analysis of national and regionally typical quality standards for the marketing of meat from pasture-based husbandry (Pro Weideland, 2018), guidelines at Federal State level (Freistaat Thüringen, 2015, LBV Brandenburg e.V., 2020), and the guidelines of the organic farming associations (e.g. Bioland, 2021, demeter, 2022, Biopark, 2017, Naturland, 2021).

4.1 Gabor Granger Pricing

We used the Gabor-Granger pricing method to determine the WTP for pasture-raised beef (Gabor and Granger, 1966). It can be classified as a stated preference approach and is used to determine the maximum price a respondent is willing to pay from a predetermined price list. This technique is suitable for new product development, but also shows some limitations, as price is not always a conscious variable (Lipovetsky *et al.*, 2011).

Respondents were presented with a randomly chosen price from a predetermined list between €8.90 and €16.90 for 1 kg of regionally produced minced meat from pasture-raised beef. Additionally, they were given information on average minced beef prices at the time the study was conducted for conventional farming (€6.90 / kg) and organic farming (€14.90 / kg). They were then asked, whether they would buy that product at the given price. If the respondent answered yes a randomly chosen higher price was presented and vice versa (+/- €1). This procedure was repeated until the highest WTP for the individual respondent was determined (Lipovetsky *et al.*, 2011). In our analysis we calculated the mean and median and compared those values to the given anker values.

4.2 Maximum difference scaling (MaxDiff)

We used MaxDiff scaling (Louviere *et al.*, 1994) to gain insight into relevant communication aspects. Respondents were presented with different product attributes and asked to indicate the most and least important ones allowing the researcher to compute important weights or preference shares for each attribute. We chose this method because we wanted to evaluate five different communication

* Lauterbach et al. (2021): [Developing Business Models For Sustainable Cattle Grazing Systems](#) (Landscape 2021) (unpublished)

approaches with four individual marketing claims each. In MaxDiff scaling more attributes can be compared than in a conjoint with comparatively less cognitive effort on the part of the respondents (Steiner and Meißner, 2018).

In our study we conducted a two-step procedure: First, respondents were asked to indicate for which of the following items they want to receive more information with regards to pasture-raised beef: Animal welfare standards, regional origin, influence on climate and biodiversity, quality and taste or information on the partners within the value chain. Respondents were then presented with four different marketing claims on the chosen topic in a randomised order. These claims were based on the identified production standards. We asked respondents which claim they find most and least interesting on a best worst scale. This procedure was carried out twice.

MaxDiff analysis estimates the values (utilities U) of each marketing claim from the respondent's choices. We used a multinomial logit model and calculated the preference share for each claim: Preference share = $\exp(U_i) / (\exp(U_1) + \dots + \exp(U_4))$ (see also (Steiner and Meißner 2018)).

5 Results

5.1 Characterising potential consumer groups for pasture-based beef

The classification of consumers interested in pasture-raised beef followed a deductive procedure. Two questions were used to classify consumers interested in purchasing pasture-raised beef: First, respondents were asked whether they had ever bought pasture-raised beef in the past. About a quarter of the sample gave an affirmative answer to this. A very small minority of 4.2% stated that they exclusively buy pasture-raised beef. After receiving more information about pastured-raised beef as part of prioritising communication approaches, respondents were able to indicate whether they would like to buy more pasture-raised beef in the future.

People who answered both questions affirmatively were defined as *buyers with additional purchase potential* (21%). People who answered the second question with yes were defined as *potential new customers* (61.9%) and respondents who answered both questions with a no were defined as *refusers* (17.1%). In addition, there was a small group of *saturated buyers* who already buy pasture-raised beef but do not want to buy more in future. However, this group is very small with just 17 respondents and was excluded from further analysis (see table 2).

Table 2.
Identified target groups for pasture-based beef and their prevalence in the sample

		N	Percentage
Included in the analysis	Total	690	100
	refusers	118	17
	potential new customers	427	62
	buyers with additional purchase potential	145	21
Excluded from the analysis		53	
Total		743	

In the following section we characterise a potential target group, namely buyers with additional purchase potential as well as potential new customers. Table 3 provides an overview of key characteristics.

Table 3.
Comparison of the target groups (** indicate significant results, $p < 0.05$)

		potential new customers	buyers with additional purchase potential
Demographics (Pearson Chi Square Test)	Income** (Median)	€2,000 – 2,499	€3,000 – 3,499
	Education**		
	Completed vocational training	54%	30%
	Completed studies	32%	57%
Shopping behaviour (Mann-Whitney U Test)	General shopping behaviour (Mean, 1: completely disagree, 5 completely agree)		
	I always buy the same thing.	2.7	2.8
	I take my time when shopping and read product information carefully. **	3.3	3.9
	I ask for advice about certain products, e.g. at the meat counter.**	3.1	3.7
	I like to try new products. **	3.8	4.2
	I pay attention to the price of products.**	4.0	3.8
	I make sure to buy local products. **	3.8	4.2
	I make sure to buy organic products. **	3.4	4.0
	I make sure to buy healthy products when shopping.**	4.0	4.3
Beef purchase (Pearson Chi Square Test)	Frequency** (Mean)	Every second week	Once a week
	Location**		
	Supermarket (fresh counter)	54%	51%
	Supermarket (packed)	21%	9%
	Discounter (packed)	10%	1%
	Organic shop	3%	7%
	Butcher shop	12%	26%
	Directly from the farmer	0%	5%

Our sample revealed a higher income and educational level for buyers with additional purchase potential. Other demographic factors did not reveal significant differences between the two groups and are therefore comparable with the population of this study. With regard to their shopping behaviour, buyers with additional purchase potential have the highest affinity for organic and health-promoting products, and those of regional origin. Potential new customers considered health-promoting properties and regional origin to be more important than organic production. Buyers with additional purchase potential are more open to product information both on the package and during the sales talk at the counter. Both groups tend to be open for new products.

Buyers with additional purchase potential buy beef more frequently than potential new customers. About 60 to 70% of both groups buy beef at a supermarket, with a high preference for the fresh counter. The remaining respondents chose diverse food outlets. Buyers with additional purchase potential tend to choose direct marketing channels or organic shops, while potential new customers give a more diverse impression: Some going to butchers and others to discount shops.

5.2 Preferred communication approaches

Respondents could indicate whether they would like to receive more information about certain aspects of pasture-raised beef. To get them to make a trade-off within their decision, they could choose two out of five aspects. They were then presented with a MaxDiff scale featuring different potential marketing claims and asked to indicate which they find most and least interesting.

The respondents showed a very clear preference for wanting to receive more information on animal welfare (see Figure 1). Their interest in the other aspects is more or less evenly distributed.

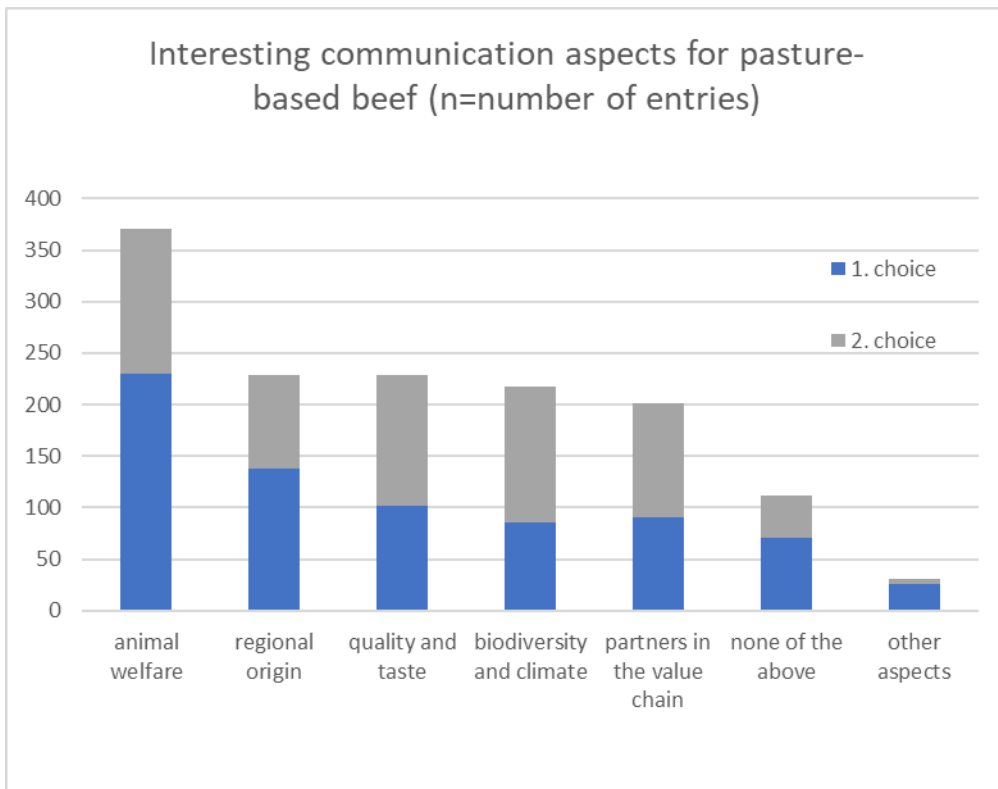


Figure 1. Interesting communication aspects

With regard to the described target groups, buyers with additional purchase potential show a slight tendency to regional origin while potential new customers prefer to receive more information on animal welfare. However, these correlations are not significant.

The following table shows the preference share for each marketing claim derived from the MaxDiff scale. Note that the preference shares can only be compared within each category and not across categories.

Table 4.
Preference share for potential marketing claims (in %)

Marketing claim	Preference share (%)
Animal welfare	
Our calves grow up with their mothers on the pasture.	34
Our cattle are on pasture for at least 180 days.	33
On pasture, our cattle can eat juicy herbs and help themselves like at a buffet.	18
The transport of our cattle is low-stress due to short distances to the slaughterhouse.	15
Regional origin	
The feed for our cattle comes 100% from the region, often from our own farm.	33
We keep jobs in the region.	27
Our cattle come directly to your table without many middlemen.	25
Grazing preserves our cultural landscape. You can enjoy this unique nature on walks.	15
Quality and taste	
Feeding our cattle on pasture in the summer and using as little concentrated feed as possible in the winter makes the meat particularly tasty.	36
The low-stress slaughtering of our cattle makes our meat particularly tasty.	32
We only give medication on veterinary orders. There are no residues in the meat.	22
Due to a high omega 3 content, the meat from our cattle is particularly healthy.	10
Climate and biodiversity protection	
Pasture farming is characterised by a low use of pesticides and fertilisers.	28
Our pastures provide a habitat for various bird species, insects, field hamsters and moles.	28
Our pastures bind CO ₂ from the air. Thus they have a better climate balance than, for example, maize fields.	26
By keeping an appropriate number of cattle, we maintain the natural balance on pastures.	18
Partners in the value chain	
Our cattle are slaughtered in a certified, medium-sized slaughterhouse in Brandenburg.	38
We guarantee fair payment for our farmers and slaughterhouse employees.	34
Our cattle come from nine agricultural cooperatives from all over Brandenburg.	18
The further processing of our cattle takes place in a traditional company in Brandenburg.	11

With regard to animal welfare, the respondents found exact information on the length of the grazing period and a description of suckler cow husbandry particularly interesting. Information on slaughtering was least popular. On the topic of regional origin, the respondents found it particularly interesting that the feed comes from the farm of origin; this is most relevant for buyers with additional purchase potential. Potential new customers considered the preservation of jobs and a direct supply chain to be relevant. The issue of preserving the cultural landscape had the lowest preference share. For quality and taste, the topic of feed was also important, as well as low-stress slaughtering and its effect on meat quality. A health related statement regarding the omega 3 content scored lowest of all statements. On the topic of biodiversity and climate protection, three of the four statements achieved similar scores across the entire sample. These related to low pesticide and fertiliser use, pasture as habitats for certain animal species and the potential of pastures to sequester carbon. On the topic of partners within the value chain, information about the slaughterhouse and fair payment for employees stood out positively. Information about the processor was of less interest to the respondents.

5.3 WTP for pasture-based beef

Both the arithmetic mean and the median value can be given as €12.90 for the respondents' willingness to pay. 104 persons (14% of the respondents) indicated a willingness to pay below €8.90 and were excluded from further analysis. Thus, the average willingness to pay is €5 above the price of conventional minced beef (+ 72.5%) and €2 below the price of organically produced minced beef (-13.4%).

Furthermore, differences in willingness to pay could be identified on the basis of various characteristics (Table 5).

Table 5.
Description of WTP among consumer groups (** significant results p=0.05)

Characteristic	Mean WTP in €
Income in €	Under 1,000– 3,000: € 11.90 3,000 – 3,499: € 14.90 Over 3,500: € 13.90
Education	Completed vocational training: € 11.90 completed studies: median: €13.90
Beef purchase	Several times a week: €14.90 Once a week: €12.90 Every other week and less: €11.90
Place of purchase	Supermarket (fresh counter): €12.90 Supermarket (packed): €11.90 Discounter (packed): €11.40 Organic shop: €15.90 Butcher shop: €12.90 Directly from the farmer: €12.90
Potential target groups	Refusers: €10.90 Potential new customers: €11.90 Buyers with additional purchase potential: €14.90 Saturated beef purchasers: €14.90

6 Discussion

The aim of this paper is to define consumer groups for pasture-based beef in Berlin-Brandenburg, test communication approaches and define the groups' Willingness to pay (WTP) for pasture-raised beef, and use the results to develop communication strategies for pasture-based beef as a vital part of new business models for this product in our study region.

The target group characterisation allowed for a closer look into existing and potential pasture-beef purchasers indicating a high marketing potential, especially at the fresh counter in supermarkets. However, this potential is limited by the price sensitivity and comparably lower WTP for pasture-raised beef when it comes to potential new customers, who make up the majority of the sample. The results also reveal differences within this group (e.g. some shop in butcher shops, other in discounters) indicating different relevance as a target group for pasture-raised beef. The group of existing buyers is comparatively smaller. But, they show a high marketing potential and a high WTP. Here, it should be noted that the WTP is overrated by about 15-30% in most studies (Wertebroch, 1998, Sattler and Nitschke, 2003).

In the case of pasture-raised beef, animal welfare is the most important communication aspect, which is particularly important for developing new buyer groups. Similar results can be found in other studies (e.g. Klink-Lehmann and Langen, 2019). Regional origin was not particularly important. It is noteworthy that respondents rated the procurement of regional feed as very interesting, suggesting that they associate it with pasture farming. Also, other benefits of regional origin such as short value chains contributing to low stress slaughtering, fair payment and safeguarding regional job opportunities was interesting for the respondents. This indicates that the claim "regional origin" alone is not sufficient. It needs further explanation of the actual advantages. Concerning biodiversity and climate protection, consumers were interested in more tangible aspects than a rather general statement on maintaining a natural balance, which has been shown in other studies on communicating (agro)biodiversity (Kleinhüchelkotten *et al.*, 2006).

There are many synergies between existing production standards, the prevailing conditions in the study region and the expressed interests and expectations of consumers (e.g. length of the grazing period, regional feed). One controversial point is the issue of slaughter: As there are only a few slaughterhouses in the region, this could entail longer transport routes for the animals, which can have a negative impact on stress levels and thus animal welfare and meat quality. Consumers may be disappointed by this fact, as they expect high quality meat and animal welfare until slaughter.

7 Further analysis

We could describe a potential target group with the group of buyers with additional purchase potential, but we could also use an inductive approach (cluster analysis) to further differentiate the sample. Moreover, we could further explore the data from the Gabor-Granger pricing method to derive demand curves and the share of potential purchasers at given prices (Lipovetsky *et al.*, 2011). A more accurate

WTP could also be determined in test marketing using a revealed preference approach (Sattler and Nitschke, 2003).

Informed consent

Informed consent was obtained from all individual participants included in the study.

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References

- Albersmeier, F. and Spiller, A. (2010), "The Reputation of the German Meat Sector: A Structural Equation Model", *German Journal of Agricultural Economics* No. 4.
- Amt für Statistik Berlin-Brandenburg (2019), *Ergebnisse des Mikrozensus im Land Berlin 2019 – Haushalte, Familien und Lebensformen*, Potsdam.
- Baba, Y., Kallas, Z., Gil, J.M. and Realini, C. (2015), *Impact of hedonic evaluation on consumers' preferences for beef enriched with Omega 3: A Generalized Multinomial Logit Model approach*.
- Baumgarten, H. (2020), "Es war einmal – Struktur der Schlachthöfe in Ostdeutschland", *Bauernzeitung*, 24 September, available at: <https://www.bauernzeitung.de/hintergrund/es-war-einmal-struktur-der-schlachthoefe-in-ostdeutschland/> (accessed 3 November 2021).
- Bioland (2021), *Bioland Richtlinien*, Mainz.
- Biopark (2017), *Biopark Erzeugerrichtlinie*, Güstrow.
- BWV (2020), *Statistisches Jahrbuch 2020 - Brandenburg*, Potsdam.
- Christoph-Schulz, I. (2018), "SocialLab – Nutztierhaltung im Spiegel der Gesellschaft", *Journal of Consumer Protection and Food Safety*, Vol. 13 No. 2, pp. 145–236.
- Christoph-Schulz, I., Rovers, A. and Brümmer, N. (2017), *DIE EINSTELLUNG DER GESELLSCHAFT GEGENÜBER DER LANDWIRTSCHAFTLICHEN NUTZTIERHALTUNG*, *Gewisola*.
- demeter (2022), *Demeter Richtlinien 2022*, Darmstadt.
- DeSimone, J.A., Harms, P.D. and DeSimone, A.J. (2015), "Best practice recommendations for data screening", *Journal of Organizational Behavior*, Vol. 36 No. 2, pp. 171–181.
- Fernqvist, F. and Ekelund, L. (2014), "Credence and the effect on consumer liking of food – A review", *Food Quality and Preference*, Vol. 32, pp. 340–353.
- Freistaat Thüringen (2015), *Leitlinie zur effizienten und umweltverträglichen Mutterkuhhaltung*.
- Gabor, A. and Granger, C.W.J. (1966), "Price as an Indicator of Quality: Report on an Enquiry", *Economica*, Vol. 33 No. 129, p. 43.
- Heinze, K., Xouridas, S., Gebhardt, B. and Becker, T. (2014), "Verbraucherpräferenzen gegenüber regionalen Produkten: Ein Vergleich von West- und Ostdeutschland", *Berichte über Landwirtschaft*.
- Heise, H. and Theuvsen, L. (2017), "What do consumers think about farm animal welfare in modern agriculture? Attitudes and shopping behaviour", *International Food and Agribusiness Management Review*, Vol. 20 No. 3, pp. 379–399.
- Hempel, C. and Hamm, U. (2016), "How important is local food to organic-minded consumers?", *Appetite*, Vol. 96, pp. 309–318.
- Hocquette, J.F., Botreau, R., Legrand, I., Polkinghorne, R., Pethick, D.W., Lherm, M., Picard, B., Doreau, M. and Terlouw, E.M.C. (2014), "Win-win strategies for high beef quality, consumer satisfaction, and farm efficiency, low environmental impacts and improved animal welfare", *Animal Production Science*, Vol. 54 No. 10, p. 1537.
- Kleinhückelkotten, S., Wippermann, C., Behrendt, D., Friedrich, G., Schürzer de Magalhaes, I., Klär, K. and Wippermann, K. (2006), *Kommunikation zur Agro-Biodiversität*, Hannover, Heidelberg.
- Klink, J. and Langen, N. (2015), "Are animal welfare aspects of relevance in consumers' purchase decision?", 328 - 346 Pages / Proceedings in Food System Dynamics, Proceedings in System Dynamics and Innovation in Food Networks 2015 / Proceedings in Food System Dynamics, Proceedings in System Dynamics and Innovation in Food Networks 2015.
- Klink-Lehmann, J. and Langen, N. (2019), "Illuminating the 'animal welfare' consumer via different elicitation techniques", *Meat science*, Vol. 157, p. 107861.
- Korn, A. and Hamm, U. (2014), *Konzept zur Produktdifferenzierung am Rindfleischmarkt – Kommunikationsmöglichkeiten und Zahlungsbereitschaft für Rindfleisch aus extensiver, artgerechter Mutterkuhhaltung auf Grünland*, Kassel.
- LBV Brandenburg e.V. (2020), *Der neue Brandenburger Weg*, Teltow.

- Linder, F., Spear, J., Nowotny, H., Scott, P. and Gibbons, M. (2003), *Re-Thinking Science: Knowledge and the Public in an Age of Uncertainty*, Vol. 32.
- Lipovetsky, S., Magnan, S. and Zanetti-Polzi, A. (2011), "Pricing Models in Marketing Research", *Intelligent Information Management*, Vol. 03 No. 05, pp. 167–174.
- Louviere, J., Finn, A. and Timmermanns, H. (1994), *Retail research methods, Handbook of Marketing Research*, 1st ed., McGraw-Hill.
- Markova-Nenova, N. and Wätzold, F. (2018), "Fair to the cow or fair to the farmer? The preferences of conventional milk buyers for ethical attributes of milk", *Land Use Policy*, Vol. 79, pp. 223–239.
- Meade, A.W. and Craig, S.B. (2012), "Identifying careless responses in survey data", *Psychological methods*, Vol. 17 No. 3, pp. 437–455.
- MLUK (2021), *Die Herausforderungen der brandenburgischen Streusandbüchse*.
- Naturland (2021), *Naturland Richtlinien Erzeugung*, Gräfelfing.
- Pirsich, W., Hardenberg, L. von and Theuvsen, L. (2017), "Eine empirische Analyse zum Angebot von Tierwohl-Fleisch in Fleischerfachgeschäften", *Berichte über Landwirtschaft - Zeitschrift für Agrarpolitik und Landwirtschaft*, Band 95, August 2017 / *Berichte über Landwirtschaft - Zeitschrift für Agrarpolitik und Landwirtschaft*, Band 95, Heft 2, August 2017.
- Pro Weideland (2018), *Rahmenbedingungen und Kriterien für die Erzeugung und Vermarktung von Weidemilchprodukten im Rahmen des Projektes „Weideland Niedersachsen“*.
- Profeta, A. and Hamm, U. (2019), "Do consumers care about local feedstuffs in local food? Results from a German consumer study", *NJAS: Wageningen Journal of Life Sciences*, Vol. 88 No. 1, pp. 21–30.
- Risius, A. and Hamm, U. (2017), "The effect of information on beef husbandry systems on consumers' preferences and willingness to pay", *Meat science*, Vol. 124, pp. 9–14.
- Rodríguez-Ortega, T., Oteros-Rozas, E., Ripoll-Bosch, R., Tichit, M., Martín-López, B. and Bernués, A. (2014), "Applying the ecosystem services framework to pasture-based livestock farming systems in Europe", *Animal an international journal of animal bioscience*, Vol. 8 No. 8, pp. 1361–1372.
- Sattler, H. and Nitschke, T. (2003), "Ein empirischer Vergleich von Instrumenten zur Erhebung von Zahlungsbereitschaften", *Zfbf*, pp. 364–381.
- Schulze, B. and Spiller, A. (2008), "WER GEHT NOCH AN DIE THEKE? ERGEBNISSE EINER VERBRAUCHERSTUDIE ZU SB-FLEISCH", *Schriften der Gesellschaft für Wirtschafts- und Sozialwissenschaften des Landbaues e.V.*
- Schulze-Ehlers, B. and Purwins, N. (2016), "Mehrzahlungsbereitschaft für Tierwohl: Fiktion, Nischenphänomen oder Zukunftstrend?", in *Agrar- und Ernährungswissenschaftlichen Fakultät, Christian- (Ed.), Die großen Weichenstellungen? Agrar- und Ernährungspolitik nach 2020*.
- Stampa, E., Schipmann-Schwarze, C. and Hamm, U. (2020), "Consumer perceptions, preferences, and behavior regarding pasture-raised livestock products: A review", *Food Quality and Preference*, Vol. 82, p. 103872.
- Steiner, M. and Meißner, M. (2018), "A User's Guide to the Galaxy of Conjoint Analysis and Compositional Preference Measurement", *Marketing ZFP*, Vol. 40 No. 2, pp. 3–25.
- Stolz, H., Blattert, S., Rebholz, T. and Stolze, M. (2017), "Biobarometer Schweiz: Wovon die Kauf- entscheidung für Biolebensmittel abhängt", *Agrarforschung Schweiz*, Vol. 8 No. 2.
- van Wezemael, L., Verbeke, W., Barcellos, M.D. de, Scholderer, J. and Perez-Cueto, F. (2010), "Consumer perceptions of beef healthiness: results from a qualitative study in four European countries", *BMC public health*, Vol. 10, p. 342.
- Wägli, S. and Hamm, U. (2013), *Verbraucherpräferenzen bezüglich der Futtermittelherkunft im Öko-Landbau*, Berlin.
- Wertenbroch, K. (1998), "Consumption Self-Control by Rationing Purchase Quantities of Virtue and Vice", *Marketing Science*, Vol. 17 No. 4, pp. 317–337.
- Wille, S.C., Busch, G. and Spiller, A. (2017), "Tiertransporte in der Schweinehaltung: Führen mehr Informationen und Wissen bei Verbrauchern zu einer positiveren Einstellung?", *GJAE No. 66*, pp. 1–12.
- Zander, K. and Hamm, U. (2010), "Welche zusätzlichen ethischen Eigenschaften ökologischer Lebensmittel interessieren Verbraucher?", *German Journal of Agricultural Economics*, Vol. 59 No. 4, pp. 246–257.
- Zühlsdorf, A., Spiller, A., Gauly, S. and Kühl, S. (2016), *Wie wichtig ist Verbrauchern das Thema Tierschutz?*, Göttingen.