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Citizens' Perception of Different Aspects Regarding German Livestock Production

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ABSTRACT

Farm animal husbandry and animal welfare still are of growing interest in our society. Studies show a mismatch of citizens' expectations and the present situation in many countries. Therefore intensive livestock production systems seem to lose their societal acceptability. Especially modern pig and poultry production systems are criticized, but dairy farming is also affected. This can more and more be observed in Germany, one of the EU's biggest livestock producing countries. Against this background, the Scientific Advisory Board on Agricultural Policy, Food and Consumer Health Protection at the Federal Ministry of Food and Agriculture established guidelines to ensure prospective animal husbandry practices, accepted by the majority of the German society.
In this paper we present the actual perception of German citizens and the importance of different husbandry aspects based on seven of these guidelines. Thereby, pig, cattle and poultry production systems are considered and the animal species fattening pigs, dairy cattle as well as laying hens are compared. An online survey with at all 2.400 respondents was conducted in 2017.
The survey is based on a qualitative pilot study. Therefore citizens were invited for focus groups about the topics pig, poultry and cattle production in Germany. For each topic six focus groups (poultry: eight) took place in three (poultry: four) German cities. Participants discussed about their perception of actual animal husbandry with respect to housing systems, animal health and well-being, regarding the crucial points of the Scientific Advisory Board's guidelines. Using content analysis, main present husbandry factors in participants' perception were identified: flooring type, space per animal, fresh air supply, manipulable material, outdoor access and daylight.
Using a ranking procedure with these husbandry factors, main criticism points as well as sideshows could be identified for each of the three production systems, in particular fattening pig production, dairy cattle production and laying hens production. The results will contribute to establish livestock production systems in consensus with citizens' preferences. Furthermore, results will be important for the constructions of upcoming stables for all investigated animal species.

1 Introduction

Livestock production is a recent topic of public interest and dominates consumption debates (VANHONACKER et al., 2008; TONSOR et al., 2009; VANHONACKER et al., 2012). Following an EU-wide survey in 2005, about 78 % of EU citizens state that there should be done more in order to improve the welfare of livestock (EUROPEAN COMMISSION, 2005). Another survey in 2016 shows that 82 % of EU citizens argue that farm animal welfare should be enhanced (EUROPEAN COMMISSION, 2016). Thus, for several years it has been an on-going discussion about how farm animals should be treated (OHL and VAN DER STAAY, 2012).

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Farmers are often criticized by the public assuming bad living conditions for livestock in intensive systems such as pig or poultry, most notably regarding indoor breeding and high stocking density (EUROPEAN COMMISSION, 2005; VANHONACKER et al., 2009; WILDRAUT et al., 2015; WEIBLE et al., 2016). But dairy farming systems are also losing public´s confidence (BOOGAARD et al., 2011; CHRISTOPH-SCHULZ et al., 2015). In contrast, farmers describe the current situation as positive and are mostly satisfied with the performance of their animals, which is seen as an evidence for their well-being (TE VELDE et al., 2002; VANHONACKER et al., 2008). Farmers themselves often address consumers' unrealistic, romantic views of agriculture.
This shows a clear discordance between consumers´ and farmers´ perception of livestock production and farm animal welfare (VANHONACKER et al., 2008). The lack of consensus among farmers and consumers leads to a declining social acceptance of farmers and livestock production (TE VELDE et al., 2002; BUSCH et al., 2013).
The mismatch between current livestock production systems and societal perceptions is also reported for Germany (KAYSER et al., 2012; ZANDER et al., 2013; WEIBLE et al., 2016), one of the EU's biggest livestock producing countries. As a consequence, the Scientific Advisory Board on Agricultural Policy, Food and Consumer Health Protection at the Federal Ministry of Food and Agriculture in Germany (WBA, 2015) established nine guidelines to ensure prospective animal husbandry practices, accepted by the majority of society.

Against this background, the aim of this paper is to present the importance of different husbandry aspects by German citizens, based on seven of the guidelines. Thereby, pig, cattle and poultry production systems are considered, whereby fattening pigs, dairy and laying hens are compared. An online survey with at all 2.400 respondents was conducted in 2017, divided into 400 respondents per each of the considered production systems[1].
The survey is based on a qualitative pilot study: Citizens were invited for focus groups about the topics pig, poultry and cattle production in Germany. For each topic six focus groups (poultry: eight) took place in three (poultry: four) German cities. Participants discussed about their perception of actual animal husbandry with respect to housing systems, animal health and well-being, regarding the crucial points of the Scientific Advisory Board's guidelines. Using content analysis, main present husbandry factors in participants' perception based on the WBA guidelines were investigated for each of the three production systems.
The aim of this paper is to show citizens' perception of the main livestock production systems with the examples fattening pigs, dairy cattle and laying hens. Hence, the objective is to contribute to a better understanding of citizens' most important aspects and criticism regarding pig, cattle and poultry production. Furthermore, the paper contributes to the question which guidelines of the WBA should be primarily implemented from society's point of view.

2 Methods

To capture a variety of opinions and expectations among the population, focus groups with citizens were carried out in the qualitative pilot study. In focus group discussions the moderation uses a guideline with questions and asks them the whole group of participants. The aim is to ascertain perceptions and opinions as well as deeper structures of consciousness (LAMNEK, 2005). Single opinions do not have priority, but reveal the range of views. The interactions between the participants and their changes of view are of main importance (MAYRING, 2002). Thus, in contrast to standardised surveys, unexpected issues can outcrop (HALKIER, 2010). In this case, discussions' results were basal for the following quantitative survey which is almost representative for the German population regarding several quotas.
As today's conditions of animal breeding could affect an individual's decision to increase or avoid the consumption of animal products discussions included persons with vegetarian or vegan diets. Up to eleven

[1] In this paper we deal only with three animal species (fattening pigs, dairy cattle and laying hens). The survey considered with sows and piglets, beef cattle and broiler chicken three other animal species. Again, for each production type 400 respondents were asked.

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participants per group were chosen by a market research company regarding several quotas for each focus group (18 to 70 years old, at least 50% female participants, at least 33% employed). Additionally, persons without any agricultural background (qualification, personal milieu) could take part in the pilot study. For each animal species six focus group discussions (poultry: eight) were conducted in three (poultry: four) German cities. Venues were chosen based on low or high concentration of the regarded species or areas with more alternative farming systems (referring to STATISTISCHE ÄMTER DES BUNDES UND DER LÄNDER, 2011). The locations for the discussions are given in Table 1.

Table 1: Locations of focus group discussions

Topic	Locations (state)
Pig	• Oldenburg (Lower-Saxony) • Fulda (Hessia) • Halle (Saxony-Anhalt)
Cattle	• Schwerin (Mecklenburg Western-Pomerania) • Essen (North Rhine-Westphalia) • Kempten (Bavaria)
Poultry	• Hamburg (Hamburg) • Vechta (Lower Saxony) • Würzburg (Bavaria) • Erfurt (Thuringia)

To ensure comparability, a comparable guideline with main aspects for all animal species was developed. The discussions took up to 120 minutes and were recorded and transcribed afterwards. A content analysis following a category system was used to structure the main results (based on MAYRING, 2002). It was performed with MAXQDA Plus 12. Referring to the common discussions' guideline, the categories regarding the guidelines of WBA were developed and compared in close coordination with all involved research partners. Due to the qualitative character of the study and its limitations, differences such as the participants' age or gender were not analysed. The main results of the discussions for all production systems were compared and discussed in a workshop.

Based on the outcomes of the focus groups an online survey was developed. Hereby, a subdivision of the animal species was regarded and compared: fattening pigs, dairy cattle as well as laying hens. The online survey was conducted in December 2017 with 400 respondents per animal species, as mentioned before. Quotas were almost representative for the German population regarding age, gender, income, education and federal state. Again, only persons without any agricultural background (qualification, personal milieu) could take part in the survey. This paper deals only with a small part of the online survey and focuses on a ranking procedure. Therefore the main aspects of the WBA guidelines were shown: flooring type, space per animal, fresh air supply, manipulable material, outdoor access and daylight[2]. Respondents should rank these aspects using number one for the most important one, number two for the second important one and so on. For the analysis the relative distributions was calculated.

3 Results

[2] In the study we also investigated mutilations, medication only in case of illness, varied food supply, abandonment of imported feedstuff (e.g. soy), abandonment of genetically modified feedstuff and pasture-based feeding (only in case of dairy and beef cattle) by using another ranking procedure. But this paper does not contain these points.

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Within this paper only the relative distributions of production aspects for the livestock production types fattening pig production, dairy cattle production and laying hens production are presented (figures 1 till 3).

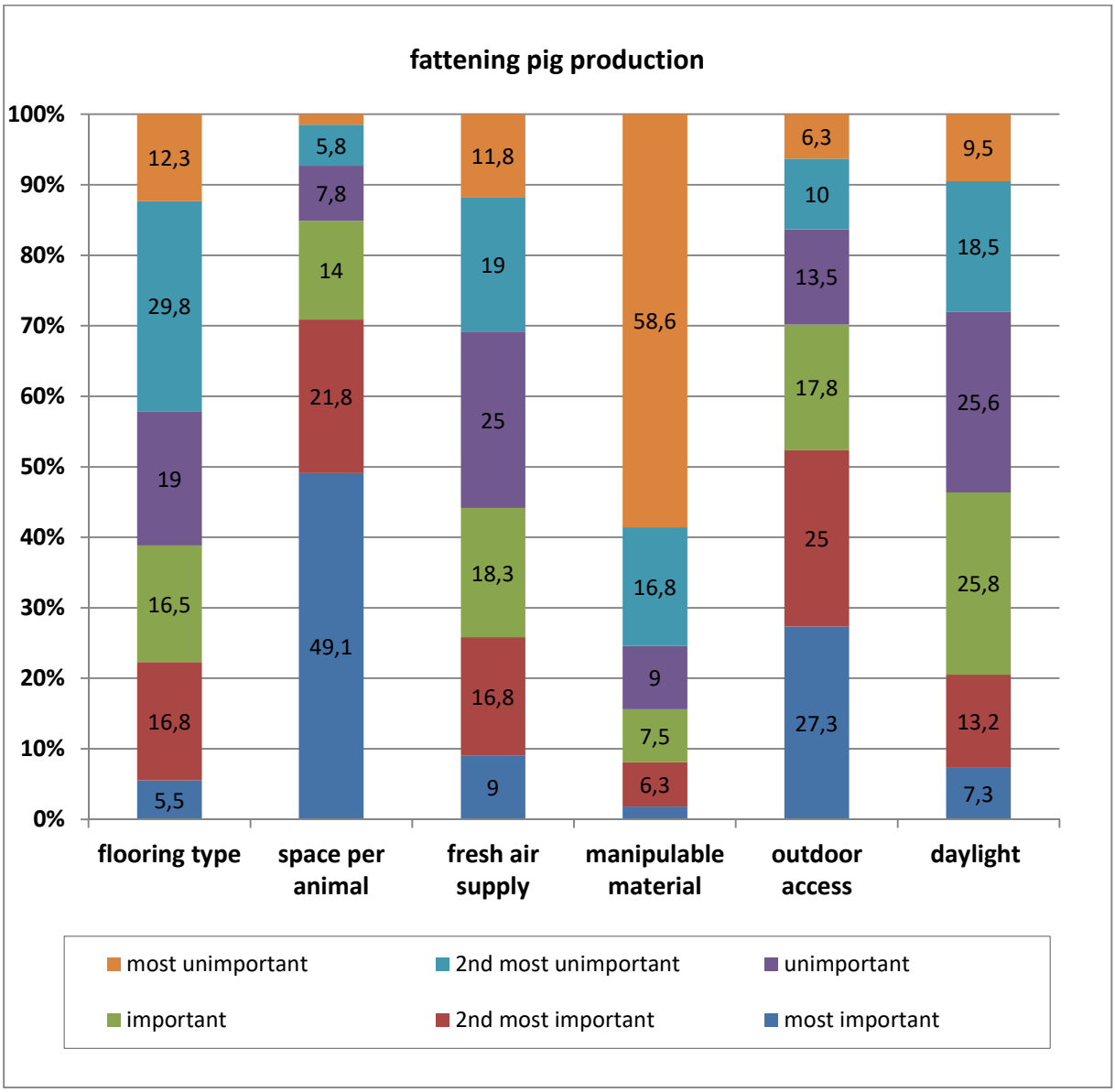

Figure 1: Ranking of production factors for fattening pig production[3]

Regarding fattening pig production, space per animal was the most important production factor for half of the participants (49.1 %) followed by outdoor access. Manipulable material is the most unimportant aspect. The latter was a surprise to us as focus groups strongly indicated a high importance of manipulable material.

[3] Values < 5 % are not labelled in figures 1 till 3.

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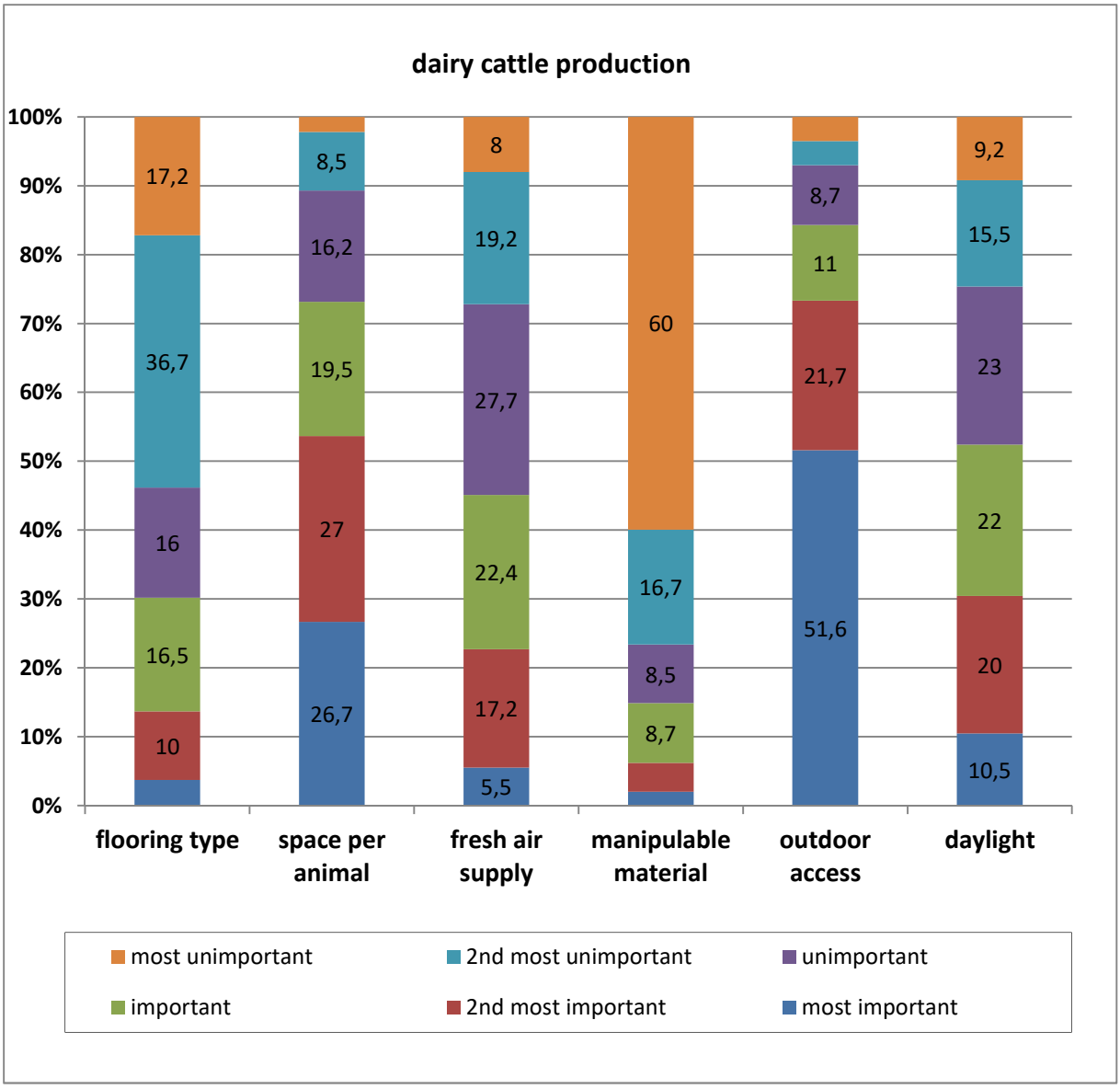

Figure 2: Ranking of production factors for dairy cattle production

In contrast to fattening pigs, outdoor access was for more than half of our respondents (51.6 %) the most important aspect with respect to dairy cattle production, whereas space per animal was it for less than a third (26.7 %). Again, manipulable material was the most unimportant aspect. The found results go in line with our findings from focus groups as discussants argued that dairy cows need pasture grazing.

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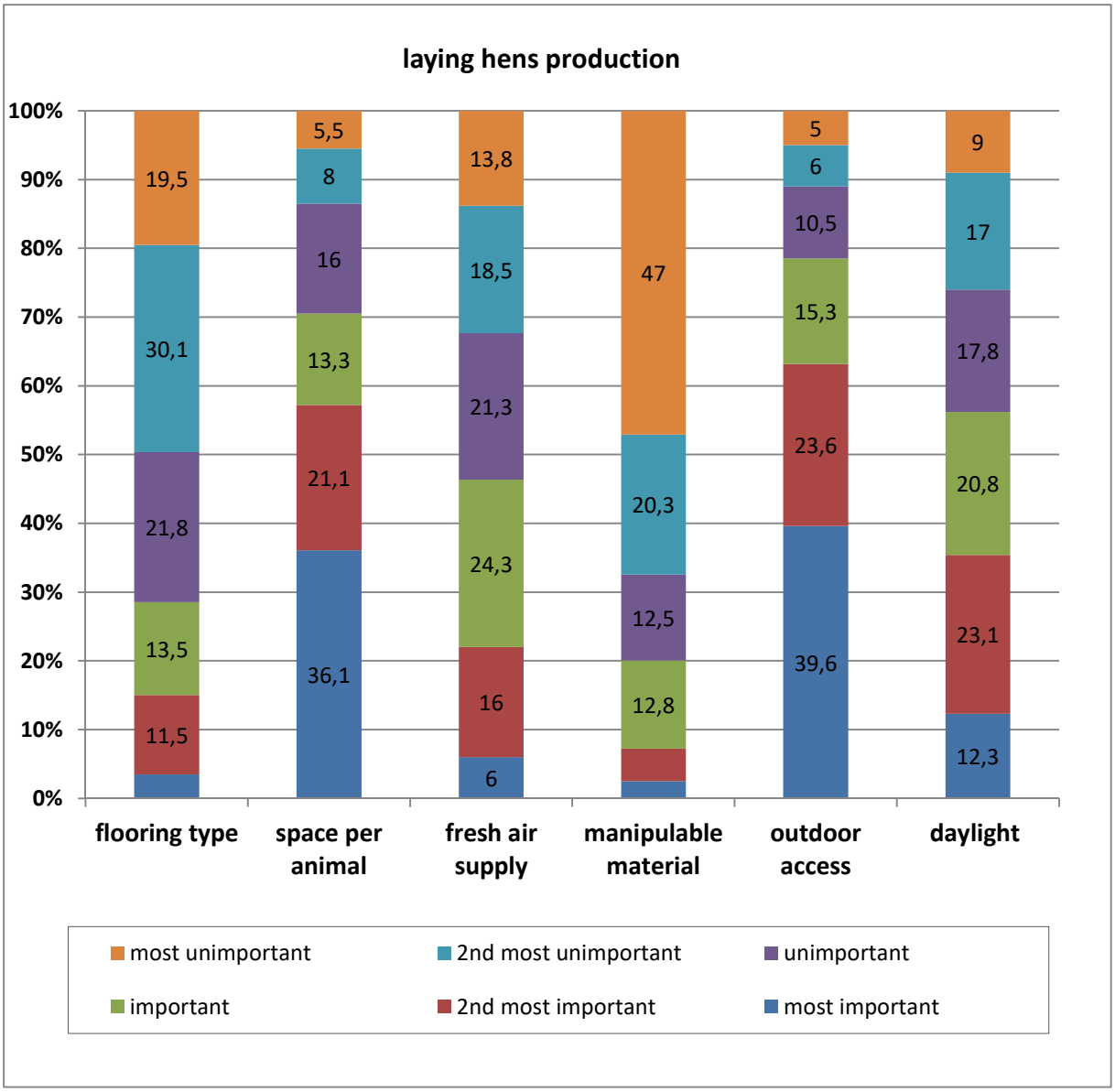

Figure 3: Ranking of production factors for laying hen production

Results for laying hens production show no major difference between space per animal and outdoor access. Outdoor is for 39.6 % the most important factor, closely followed by space per animal (36.1 %). Focus group discussions showed participants supposing cage housing systems with limited space per animal are still in use. Outdoor access was described as positive for laying hens.

4 Summary and discussion

The presented results show that many respondents express concerns about modern animal husbandry. This is in line with earlier research, which reported a low societal acceptance of modern animal husbandry (e.g. EUROPEAN COMMISSION, 2016; BOOGAARD et al., 2011; OHL and VAN DER STAAY, 2012; WEIBLE, 2016). Main topics discussed referred to the lack of space per animal, especially for fattening pigs (e.g. WILDRAUT et al., 2015) and are often linked to outdoor access, especially for dairy cattle (e.g. CHRISTOPH-SCHULZ et al., 2015).
Some results differ from results of the focus groups: Reasons for this might be due to the ranking procedure. While discussants in the previous focus groups were able to state that several aspects are equally important to

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them or could describe their opinion, respondents of the online survey had to make a clear decision which aspect is the most important, the 2nd most important etc. for them.

Regarding both qualitative and quantitative results, the importance of mixed methods approaches that combine both strategies becomes obvious. Focus groups enabled us to detect unknown aspects like the relevance of manipulable material for pigs. Participants supposed pigs as intelligent animals which want to find engagement. But regarding the results of the online survey, manipulable material is not as important as space per animal. Thus, taking a closer look to results of focus groups contents with respect to the survey, tendencies about main aspects of production systems can be observed. Keeping the example of fattening pigs in mind, manipulable material is not as relevant as space per animal. But if there is enough space per animal, outdoor access etc., manipulable material gains on importance. Additionally, following participants of the focus groups, for a better perception of fattening pig production stables should have more space, different areas with different flooring types, some manipulable material and several sources of engagement. Participants thought that wellbeing of pigs is positively influenced by space and sources of engagement. When stables have enough space and different areas, even outdoor access is not so important – daylight and fresh air supply seem to be other positive drivers for improved animal welfare. Furthermore, the same issue was detected with respect to dairy cattle and laying hens.

Besides, to get a widespread impression of citizens' perception, further analysis is needed. Concerning the quantitative data collection, factor analysis is planned as well as cluster analysis to describe the sample more in detail und to identify different societal segments.

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