

# Consumer's pork purchasing criteria and the relevance of animal welfare – a cross-national study

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## ABSTRACT

Social acceptance of livestock farming has been declining since the turn of the millennium in many European countries, whereas in Asia, the topic is currently not very relevant. Ethical aspects in terms of livestock farming play an increasingly important role in this regard. The call for higher animal welfare standards is growing louder. Especially the husbandry conditions of pigs are controversially discussed in society, industry and politics. However, the implementation of higher animal welfare standards brings along higher production costs at farm-level and leads to higher consumer prices as a result. An exploratory cross-national study (Poland, Italy, Japan and South Korea) was conducted in order to provide insights into consumer attitudes, preferences and possible willingness to pay for pork, considering the influence and importance of pork purchasing criteria and animal welfare. Therefore, the following four research questions should be answered: What kind of consumer preferences can be observed in the study countries in relation to pork? What are important purchasing criteria when buying pork? How do consumers in different countries perceive animal welfare as a purchasing factor and what is the relevance of animal welfare for them? Is there a willingness to pay a premium price for pork produced under higher animal welfare standards? In order to gain initial impressions, five online focus groups have taken place in each study country and were analyzed by using a qualitative content analysis according to Mayring. First results imply that consumer knowledge regarding the subject animal welfare differs between the European (Poland and Italy) and the Asian study countries (Japan and South Korea), although generally the knowledge about the concept animal welfare is limited in each study country. When it comes to pork purchasing habits, all participants empathized that freshness, appearance, quality as well as the origin of the meat and the price are important. The concept of animal welfare was also rated differently among the four study countries. Nevertheless, almost all participants link higher animal welfare standards with higher quality meat and therefore, see a personal benefit. Overall, it can be noted that there are big differences between the analyzed nations and there is a particular need for information when it comes to the concept of animal welfare.

*Keywords: pork; purchasing criteria; animal welfare; willingness to pay; focus groups; cross-national study*

## 1 Introduction

Livestock farming is discussed controversially not only in Germany, but also in other European countries (European Commission, 2005; Vanhonacker et al., 2009; Kayser et al., 2012; Wildraut et al., 2015). According to the EU Barometer 94 % of Europeans have the opinion that the protection of farmed animals is important or rather very important. Thereby, 95 % of German and 94 % of Italian participants answered that the protection of farm animals is important, whereas only 86 % of Polish respondents rate this aspect as important (European Commission, 2016). Of all livestock species, pig farming is particularly discussed critically in politics, society, science and industry. Therefore, ethical aspects play an increasing role in terms of livestock farming. In this context, the demands for better husbandry conditions become louder and include outdoor access for pigs as well as more space in the barn or more manipulable material (Kayser et al., 2012; Weible et al., 2016; Ermann et al., 2017; von Meyer-Höfer, 2019; Schütz et al., 2020). Furthermore, topics such as tail docking, castration without anesthesia and teeth grinding are subjects of

concern (Vanhonacker and Verbeke, 2011; Hartmann et al., 2014; Tomasevic et al., 2020). In addition, a decline in pork consumption can be observed in Germany (AMI, 2020) due to ethical aspects such as animal welfare and environmental or health related aspects (Clune et al., 2017). Nevertheless, increasing animal welfare is connected with a restructuring of livestock farming. This implies higher production costs for the farmers and finally leads to higher consumer prices (Weiß, 2013; Spandau, 2015; Deblitz et al., 2021). In Germany, the government discusses the implementation of a voluntary uniform animal welfare label. Additionally, a group of experts recommends how to transform livestock farming towards production systems that are more oriented towards animal welfare. This group also suggests potential financing possibilities to support farmers in this transformation process (BMEL, 2020).

There are many studies that deal with the attitude and perception of European consumers towards animal welfare (Frewer et al., 2005; Martelli, 2009; Vecchio and Annunziata, 2012; Hartmann et al., 2014; Di Pasquale et al., 2016; Brümmer et al., 2018; Grunert et al., 2018; Rovers et al., 2018; Pejman et al., 2019). Whereas, in Asia the topic of animal welfare has no high relevance at this stage which becomes apparent by the limited available literature. Nevertheless, to our knowledge, only few to no studies have been conducted about the relevance of animal welfare in the respective study countries, especially with regard to Japan and South Korea. Due to this research gap an explorative cross-national study (Poland, Italy, Japan and South Korea) was conducted in order to assess important purchasing criteria when buying pork and to analyze the relevance of animal welfare in different nations. Thereby, Poland and Italy were chosen as the most important pork importing countries within the EU besides Germany, whereas Japan and South Korea were chosen as important third country markets. Furthermore, pork is the most important type of meat in all four study countries. The aim of this study is to get first insights into consumers attitudes, preferences and possible willingness to pay for pork in the different study countries, considering the influence and importance of animal welfare. Therefore, the following research questions should be answered:

- (1) What kind of consumer preferences can be observed in the study countries in relation to pork?
- (2) What are important purchasing criteria when buying pork?
- (3) How do consumers in different countries perceive animal welfare as a purchasing factor and what is the relevance of animal welfare for them?
- (4) Is there a willingness to pay a premium price for pork produced under higher animal welfare standards?

In section two of this paper the method is described in more detail. Afterwards the results of the focus groups are presented. Finally, a discussion leads to concluding remarks.

## 2 Method

Qualitative research starts to become increasingly important in many research fields (Flick et al., 2007; Finch et al., 2013). One qualitative survey method is building focus groups, which were already applied in the field of market research in the 60s and 70s. Afterwards, the area of application expanded, so that recently focus groups are carried out in many fields such as social or political sciences (Wilson, 1997; Finch et al., 2013). By interacting with each other, participants of focus groups present their opinions and spontaneous reactions to a given topic. Using a questionnaire, the discussants get stimuli to discuss a certain topic. The aim of focus groups is to get various opinions from different people on one topic. Usually, a focus group consists of six to ten participants and a moderator. During our research we had to adapt the method in certain points. Due to Covid-19 and the associated contact restrictions all over the world, the authors decided to conduct online focus groups in the respective study countries.

The focus groups were conducted with Italian, Polish, Japanese and Korean consumers since the data base of consumer knowledge and attitude towards animal welfare with regard to pork is limited in these countries. Therefore, five focus groups in each study country were carried out between July and August 2021. To get a wide range of various opinions, three different regions were determined in the study countries. Each group consisted of six participants and the focus groups lasted 111 minutes on average. The guideline for the focus groups in Japan and South Korea had a few different questions and a different order of the questions with respect to animal welfare compared to the European guideline. This was a conscious decision since preliminary conducted expert interviews already showed that the knowledge and interest in animal welfare differs within the different countries (Derstappen et al., 2021). Nevertheless, the main categories of the guideline included purchasing and consumption habits, relevance of labels, importance of animal welfare, information on animal welfare and impact of information on the perception of animal welfare involving a possible willingness to pay an additional price. Besides open questions, the

guideline contained a section where participants had to share their opinion on different statements. Additionally, the moderator provided some information on the topic animal welfare, including a short definition as well as some information about higher animal welfare standards. Since the focus groups were conducted in different countries, each country had its own native moderator. In order to ensure that the discussions were conducted in a comparable manner, the moderators were intensively trained in advance. Before the actual focus groups were conducted the guideline was pretested.

Participants of the focus groups were recruited on the basis of predefined quotas. According to the quotas consumers with a background of agriculture or market analysis were excluded as well as consumers working in the following fields: nutrition science, agriculture, marketing or consumer research, psychology and sociology. They were excluded to ensure that no quasi-experts in relation to the research topic or method were included. In order to get heterogenous groups, quotas were set in terms of age (between 20 and 70 years old), gender (mixed 50:50 or at least 33% and at most 66% female and male) and employment (at least 33% and at most 66% employed full or part-time). Furthermore, all participants had to regularly consume or purchase pork and had to be citizens of the respective country. According to the quotas all participants were recruited by a market research institute. The online focus groups were conducted via zoom and were documented via audio as well as video. Afterwards the discussions were transcribed and at the same time translated into English. The methodology of a content analysis by Mayring was used to analyze the transcripts (Mayring, 2015). Therefore, the codes were first formed deductively and then supplemented by inductively formed codes. Afterwards, the individual codes were paraphrased by one person. Finally, the results could be interpreted step by step by a summarizing content analysis (Mayring, 2015).

### 3 Results

Based on the guideline this chapter is categorized in three sub-categories: purchasing criteria and consumption habits, importance of animal welfare and willingness to pay.

#### 3.1 Purchasing criteria and consumption habits

Table 1 summarizes important purchasing criteria mentioned and explained by the participants. The majority of participants declared the aspects freshness, appearance and quality as the main criteria when purchasing meat. In this context, appearance was defined by the color of the meat or the fat content. Whereas Japanese consumers preferred a clean red color, Polish consumers favored meat with a pink color. Additionally, the freshness of meat is mentioned very often and was the most important aspect in each study country. Thereby, South Korean consumers check the freshness by taking a closer look at the slaughter date. Whereas, one Italian participant clarified that freshness stands for quality.

*“Regarding the preparation or the purchase of pork, the most important aspects for me are freshness, which stands for quality, because a fresh product is a quality product.” (Italy)*

The next most important purchasing criteria mentioned by the consumers were the price and the origin of the meat. Both aspects were discussed approximately in the same frequency. In terms of the country of origin, all participants in Japan, South Korea and Italy agreed with each other and preferred domestically produced pork over imported pork. In this context, especially the Japanese consumers indicated that they preferred domestic pork in order to buy safe products or to support local production. In addition, Japanese consumers frequently associated a bad smell with imported meat.

*“..., I tend to choose domestic, trying to buy safe products as much as possible.” (Japan)*

*“I try to buy domestic products as much as possible. Price is not that important for me, I like to support the local community I live in.” (Japan)*

*“I also want to support this concept of locally produced, locally consumed” (Japan)*

*“Japanese pork is always clean. That's what I think in comparison with an overseas supermarket. Japanese pork has less smell. There is a lot of smelly pork sold in an overseas supermarket. Japanese pork never smells.” (Japan)*

Furthermore, Italian consumers took a closer look at the country of origin and rated it as an important criterion. According to Italians, the meat should be at least coming from Europe. In contrast, the country of origin seemed to play only a minor role in Poland, since this criterion was not mentioned often by Polish participants when it comes to important purchasing criteria. Either they did not care about the origin, and look more on the price or the appearance of the product, or they were not able to determine the origin and assumed that they always buy Polish pork. Thus, Polish consumers seemed to be very

affected by the price. In the other study countries, the price was named as one of the most important criteria as well. Thereby, Italian consumers tried to find the right balance between quality and price.

*“I’ve never asked the sales assistant at the meat store where it’s from, only if it’s fresh. But generally, if it looks good and has a good price, it doesn’t really matter to me if it’s Polish or not.” (Poland)*

*“I don’t care about this. I look for appearance, price and flavor. If it’s good, it makes no difference to me whether it’s from Poland or another country.” (Poland)*

Besides the relevance of different purchasing criteria, the consumption habits in each study country are different. Starting with the preferred pork cuts there is a big distinction between the Asian and European study countries. Thus, South Korean consumers prefer primary, pork belly, neck and front legs. Japanese consumers go for pork belly, loin and shoulder as well as trimmings, whereby they prefer especially thinly sliced pork. In contrast, Polish consumers favor pork chops, loin and shoulder, but also minced pork, ham and picnic ham. The most popular cut of pork in Italy is loin. Moreover, Italians are particularly fond of sausages or pork chops and fillets.

The final question in this category was about changes in consumption habits over the last years. According to the South Korean discussants, the proportion of online purchases of pork had increased. Furthermore, the participants stated that their pork consumption increased over the last years due to various reasons such as filling up the protein intake or because beef became too expensive and was too difficult to cook, whereas pork is easier to prepare and due to Covid-19, South Koreans started to cook more often at home. In addition, the choice of preferred cuts has changed. This is because nowadays there is a wider choice of cuts available. As a result, Koreans have started to consume more imported products as well and prefer leaner cuts. In contrast, the group of Japanese consumers can be divided into two groups in terms of their consumption habits: On one hand, many participants stated that they have decreased their pork consumption primarily due to environmental aspects and choose fish or alternative meat products based on soybeans. On the other hand, many consumers declared that they increased their pork consumption due to Covid-19. In Poland many participants indicated that they started to eat less pork and more poultry, mainly because of health and diet related issues. But also due to having a higher budget Polish consumers try to buy better quality. Nevertheless, the other half of participants stated that their consumption habits had not changed and that they still eat a lot of pork and meat in general. This also accounted for the majority of Italian participants who indicated that their meat consumption habits had not changed at all. However, few Italian consumers emphasized that they have increased their pork consumption since nowadays pork production is better protected and they have the opinion that pork is healthy. According to other Italian participants, their meat consumption declined in order to have a better balance of diet.

**Table 1.**  
**Purchasing criteria**

Purchasing criteria	South Korea	Japan	Poland	Italy
<b>Freshness/appearance</b>	<ul style="list-style-type: none"> <li>Freshness most important, defined by color and expiry date</li> <li>Appearance = fat content, cold or frozen condition</li> </ul>	<ul style="list-style-type: none"> <li>Freshness very important</li> <li>Appearance = color (clean red), texture, fat content</li> </ul>	<ul style="list-style-type: none"> <li>Freshness most important, defined by fat content and appearance</li> <li>Appearance = fat content (prefer lean products), color (nice/pink), structure</li> </ul>	<ul style="list-style-type: none"> <li>Freshness, defined by quality</li> <li>Appearance = color, texture, fat content (Prefer lean products)</li> </ul>
<b>Quality</b>	<ul style="list-style-type: none"> <li>Hard to identify</li> <li>Quality = fat content, color, condition (frozen is bad), marbling</li> </ul>	<ul style="list-style-type: none"> <li>Pork needs to be tough</li> <li>Feed impacts quality and taste</li> <li>Tenderness</li> <li>Prefer less or much fat, depending on the pork cut</li> </ul>	<ul style="list-style-type: none"> <li>Quality = appearance, water capacity, lean products</li> </ul>	<ul style="list-style-type: none"> <li>Long transport period = negative impact on quality</li> <li>Quality = texture, brand, lean meat, color</li> <li>No bad smell, should not shrink during cooking</li> <li>Only in butcher shops good quality</li> <li>Hard to recognize good quality, trust necessary</li> </ul>
<b>Origin</b>	<ul style="list-style-type: none"> <li>Important</li> <li>Preference for domestic pork</li> <li>After freshness and condition (frozen or chilled)</li> </ul>	<ul style="list-style-type: none"> <li>Preference for domestic pork to support local production</li> </ul>	<ul style="list-style-type: none"> <li>Preference for domestic pork in local stores or at butchers</li> </ul>	<ul style="list-style-type: none"> <li>Very important aspect</li> <li>Preference for domestic pork</li> <li>At least European origin</li> </ul>
<b>Price</b>	<ul style="list-style-type: none"> <li>Very important</li> <li>Sometimes price before country of origin</li> </ul>	<ul style="list-style-type: none"> <li>Divergent opinions</li> <li>→ Cheaper is better</li> <li>→ Price after taste and quality</li> </ul>	<ul style="list-style-type: none"> <li>Price after appearance and freshness</li> <li>Most important criterion for some respondents</li> </ul>	<ul style="list-style-type: none"> <li>Good balance between price and quality</li> </ul>
<b>Packaging</b>	<ul style="list-style-type: none"> <li>Slaughter and packaging date</li> </ul>	<ul style="list-style-type: none"> <li>Amount of drip in the package, expiry date, simple packaging rather than plastic tray</li> </ul>	<ul style="list-style-type: none"> <li>Expiry date, ingredients list, meat content</li> </ul>	<ul style="list-style-type: none"> <li>Period between packaging date and expiry date</li> </ul>
<b>Safety</b>	<ul style="list-style-type: none"> <li>Prefer less antibiotics, good feed</li> <li>According to the slogan: "What animals consume, the humans also consume"</li> </ul>	<ul style="list-style-type: none"> <li>Request few chemicals and additives in the production process</li> <li>Domestic = safer product</li> </ul>	<ul style="list-style-type: none"> <li>Safety = no production in big factories</li> </ul>	<ul style="list-style-type: none"> <li>Very important</li> </ul>
<b>Brand</b>	<ul style="list-style-type: none"> <li>Few labels known, e.g. Handon (Korean) pork</li> </ul>	<ul style="list-style-type: none"> <li>Few labels known: green mark for processed foods, Charmy-ton or Kurobuta-pork, referring to a special breed or feed</li> <li>Trust in brands</li> </ul>	<ul style="list-style-type: none"> <li>Brands associated with trust in product</li> </ul>	<ul style="list-style-type: none"> <li>Information on the whole supply chain and origin</li> <li>Information about the farm and how animals are raised and fed</li> </ul>
<b>Taste</b>		<ul style="list-style-type: none"> <li>Very important, more important than the price</li> </ul>	<ul style="list-style-type: none"> <li>Important especially for processed food</li> </ul>	<ul style="list-style-type: none"> <li>Very important</li> <li>Want to feel the taste of the meat</li> </ul>
<b>Animal Welfare</b>	<ul style="list-style-type: none"> <li>Important during online shopping, because more information about environment and feeding are available</li> </ul>			<ul style="list-style-type: none"> <li>How the animals are raised and fed</li> <li>Important along the whole supply chain</li> <li>Healthy animals= better meat quality</li> </ul>

Source: own compilation according to focus groups

## 3.2 Importance of animal welfare

### 3.2.1. Understanding of animal welfare

The topic of animal welfare was introduced during the focus groups by asking the participants about their understanding of the term "animal welfare". It is noticeable that the knowledge about the term animal welfare differs amongst the study countries. In the Asian countries people speculated extensively about the term and often asked whether it means or includes this or that. In European countries, the participants were able to give more precise definitions and expressed their understanding of the term.

Starting with South Korea: the knowledge about the term animal welfare in South Korea is limited. Nevertheless, consumers' association with animal welfare is that the environment in which livestock animals are raised should be clean, that animals live without stress and that their health should be protected. Additionally, South Koreans combined a different way of feed or grazing with the term animal welfare. Usually, they have heard the term in connection with egg production which includes an eco-friendly concept in their mind. Some participants emphasized that meat coming from pigs growing up in a better environment has a better quality. On the other hand, there were discussants who confirmed that the subject of animal welfare does not touch them since it is only an ethical topic.

*"..., I understand that it is a form that protects livestock as much as possible and improves quality in terms of environment and feeding until it is slaughtered and comes to us for food." (South Korea)*

*"But I don't think it really touches me, but I think it's an ethical meaning of co-prosperity with humans and eco-friendly methods without using antibiotics to make them eat better on purpose?" (South Korea)*

The knowledge of Japanese consumers of the term animal welfare is limited as well, and many participants in the focus groups confirmed that they had no idea about the meaning of the term and have heard the term for the first time. Therefore, they started to guess the meaning or to agree with group members who had at least a minimum knowledge of the subject animal welfare. Overall, Japanese consumers associated animal welfare with the farm animals being raised in a comfortable, stress-free environment. In their opinion, the concept of animal welfare meant that the animal, like the human being, had a right to be happy, that animals should have a lot of space available and should grow up in a natural environment. Allowing the animals to have a good life until slaughter. On the other hand, some participants questioned the concept, since the animals end up as meat on the plate anyway.

*"This is about how the animals are raised." (Japan)*

*"Comfortable environment for farm animals so that the stress-free life can be provided until their death. I think that's the concept. But, it is just a concept. Farm animals, such as chicken, pigs, will be on our table, whether they are raised in such a good condition or not. This is something I still question myself." (Japan)*

*"I can translate it into Japanese. Like the human has rights, animal should also have the rights. Such a concept or such philosophy. It's what it means, I think. In short, for example, when farm animals are slaughtered, they shouldn't go through a too painful time." (Japan)*

The majority of Polish consumers indicated that they have never heard the term animal welfare before. But when they think about it they associated good rearing conditions with animal welfare such as space, free range, good feed and no use of chemicals or antibiotics. Furthermore, the participants who were interested in this subject stated that the animals should be raised and slaughtered in a more humane way and should not suffer.

*"For me it's mainly about the conditions under which the animals are raised and slaughtered." (Poland)*

*"I also haven't heard the term. But I associate it with a good condition of animals, i.e. they're fed well, have good conditions, the slaughter isn't terrible but, let's say, the animals are looked after, healthy. Everything is related to the word "well". (Poland)*

In Italy most people associated animal welfare with the conditions under which the animals are kept, how they are fed, whether they have enough space or whether they are given antibiotics. In addition, the animals should have as little stress as possible; the participants justified this with the fact that stress could lead to lesser meat quality. Moreover, the Italians associated the term animal welfare with the health of the animals and knew that there are laws which regulate farm production. However, some participants in the focus groups in Italy also stated that they did not think about this issue because in the end the animal ends up on the plate anyway.

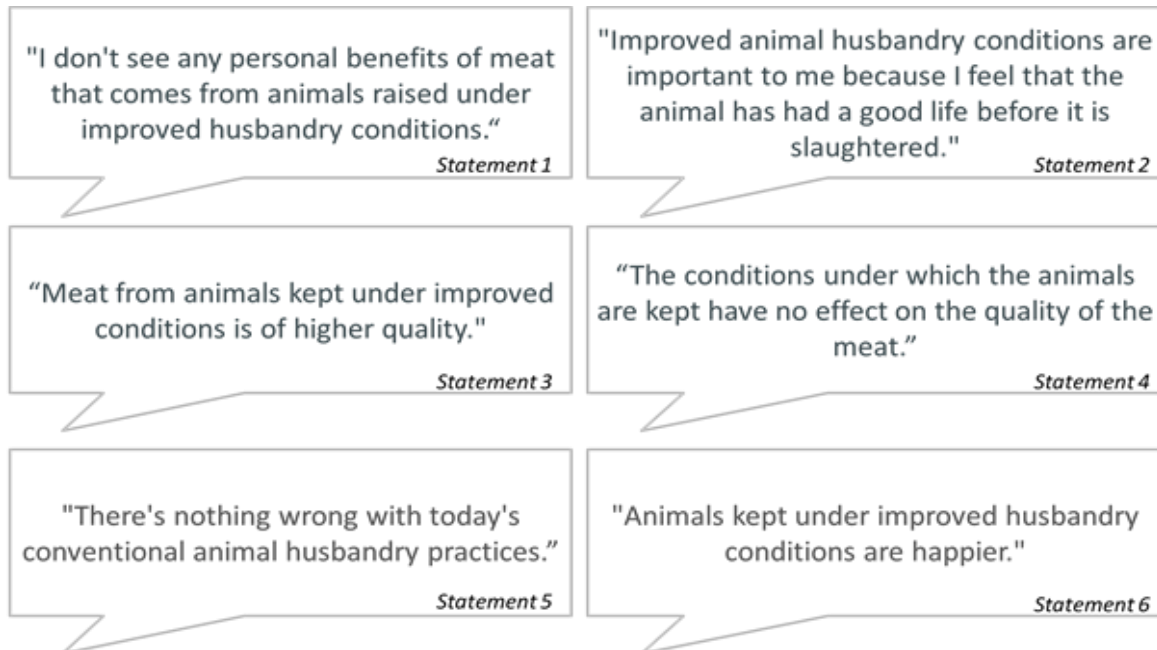
*"Animal welfare is what we have said so far, how the animals live, how they are raised, if they are out to pasture, if they eat natural products, and of course, all this affects the quality of the product." (Italy)*

*"If I think about it, I'll turn vegetarian." (Italy)*

*"I think it is strictly linked to the health and welfare of the animal, the ability to move freely, to be well treated, to be kept safe from suffering, to be properly fed." (Italy)*

### 3.2.2. Relevance of animal welfare

During the focus groups the participants discussed different statements (Figure 1). These statements were used to better understand the relevance of animal welfare in the study countries.



**Figure 1. Statements on the subject of animal welfare**  
Source: Own compilation based on the guideline of the focus groups

The majority of South Korean consumers agreed with statement two ("Improved animal husbandry conditions are important to me because I feel that the animals has had a good life before it is slaughtered."), because they associated this statement not only with an appropriate life for the animals but also with personal benefit for them as consumers. In this context the consumers discussed that meat produced from pigs raised under improved husbandry conditions might have a better quality and taste. In contrast, the Japanese consumers discussed the first two statements controversially. On one hand they did not see any personal benefits of meat coming from animals raised under higher animal welfare standards because according to them the animals will be slaughtered anyway. On the other hand, many Japanese consumers agreed with statement two because like South Korean consumers they indicated that animals raised under improved husbandry conditions have less stress and therefore, the meat tastes better and must be of better quality. Also, Polish consumers agreed mainly with statement two. Improved husbandry conditions seemed to be important for Polish consumers firstly to ease their conscience, since the animals are slaughtered for consumption in the end, but also because they associated better husbandry conditions with better taste and quality and consequently a benefit for themselves. The minority of Italian participants chose the second statement because of an ethical background, moreover, the Italians associated improved husbandry conditions with better meat quality, just as the majority of all participants, although this was not the main subject of statement two.

After showing statement three ("Meat from animals kept under improved conditions is of higher quality.") and four ("The conditions under which the animals are kept have no effect in the quality of the meat.") the majority of all participants agreed that there is a connection between improved husbandry conditions and the quality of meat, since the animals are healthier, have less stress and more space available. Nevertheless, South Korean consumers were not sure if this higher quality is also responsible for better taste. In this context, only few South Korean participants expressed the opinion that improved husbandry conditions have no influence on the quality. In contrast, Japanese consumers linked this higher quality directly to taste. Since they already experienced this with regard to free-range chicken.

According to few South Korean and Japanese participants there is nothing wrong with today's husbandry conditions. In part, the Japanese agreed that not everything about conventional pig production is good, but they described themselves as pragmatic, since cheap meat is needed in a certain quantity on the

market and the animals are slaughtered in the end anyway, so the happiness of the animals is secondary. Almost the same accounted for few Polish consumers who agreed with statement five (“There’s nothing wrong with today’s conventional animal practices”). They emphasized that they primarily care about the quality of meat. The same applied to the majority of the Italian participants, they trust the actual laws that regulate the conditions in which the animals are kept. While combining statement five with statement six consumers emphasized that in their opinion an animal has no idea what happiness is. Only some Italian respondents stated that husbandry conditions could be improved. On the other hand, many participants in each study country agreed with statement six (“Animals kept under improved husbandry conditions are happier.”) because in their opinion the animal deserved to live in a comfortable environment to avoid stress that has a negative impact on taste and quality. Furthermore, they also agreed with statement six because they value the animals. In addition, it can be observed that especially Japanese consumers agree with both statements. This was mainly due to their limited knowledge of pig production.

Overall, the relevance of animal welfare in Poland seemed to play a minor role, since Polish customers have practically never thought about the topic until now. Nevertheless, the majority of the Polish participants stated that they would consider animal welfare if they got information in the supermarket or on the package. However, the price will also influence their purchase decision. If meat produced under higher animal welfare standards did not taste better or was of better quality, the relevance of animal welfare would decrease for Polish customers. According to the focus groups in Italy, the relevance of animal welfare varied from participant to participant. There were Italian customers who cared about the welfare of farm animals and would like to have more information about it. At the same time, there were many Italians who were not interested in animal welfare, unless animal welfare would have a positive effect on the quality and taste of the meat.

Thus, the focus in Japan and South Korea was on the relevance of quality. Due to previously conducted expert interviews, the authors were aware of the limited relevance of animal welfare in Asia. The experts stated that quality is the most important purchasing factor in Japan and South Korea, therefore the authors decided to modify some animal welfare questions towards quality related questions, to get a better understanding of Asian consumer’s preferences and not to overextend the participants (Derstappen et al. 2021). Against this background, South Korean participants indicated that the quality is very important since it is directly related to taste and is absorbed by humans. However, the price also played an essential role in South Korea, as many South Koreans did not choose the highest quality but good quality products. The majority of Japanese consumers requested a minimum quality standard since they are often not able to recognize the quality in the supermarket, emphasized the participants. Few Japanese discussants stated that they primarily pay attention to high quality, if they buy pork for special occasions, because on normal days these high-quality products are too expensive. Otherwise, they were demanding good taste and a safe product if they are to consume this pork.

### *3.2.3. Impact of information on consumers’ perception of animal welfare*

After the participants of the focus groups had expressed their initial attitudes towards animal welfare and the quality of meat, they were given a definition of animal welfare as well as some information about possible measures that imply higher animal welfare standards. Afterwards, the participants were asked to discuss the statements one to six again on the base of the given information. Overall, the majority of all participants indicated that they had not known that the husbandry conditions were “so bad”, they were almost shocked by the information. Especially the information on tail docking and manipulable material was unknown. Furthermore, they agreed that the animals need more space. As a result, consumers asked for more information about animal welfare while purchasing pork and therefore, would be willing to try pork produced under higher animal welfare standards. Only in Japan, some participants expressed their concern about the importance of animal welfare against the background of other challenges in the world such as famines.

With regard to the six statements, South Korean consumers confirmed that they now know that higher animal welfare standards lead to better quality and that the animals deserve a happy live. Nevertheless, they are still concerned about humanizing the animals since they finally end up as food. The Japanese started to question if Japanese production is really safer than foreign pork production. At the same time, they changed their mind and agreed that higher animal welfare standards lead to a personal benefit since it could mean better meat quality. Nevertheless, the happiness of farmed animals is secondary in Japan. In contrast, the majority of Polish consumers stated that they had not changed their mind after receiving more information. However, they wanted to pay more attention to animal welfare certification while purchasing meat. In Italy, the opinions were diverse, some participants indicated that they had changed their mind, whereas other stuck to their opinion. Those who changed their mind, stated that they had not known the criteria of animal welfare and therefore, revised their statement saying that there is nothing



wrong with today's conventional husbandry conditions. Furthermore, they agreed that animals raised under improved husbandry conditions are happier.

### 3.3 Willingness to pay

The willingness to pay an additional price for German pork produced under higher animal welfare standards varied. However, in South Korea participants answered that they were willing to pay 10 to 30 % more, other participants indicated that the price should be cheaper since it is an imported product. The same applied to Japanese consumers, the majority would be willing to pay 20 to 30 % more. Some Japanese would even be willing to pay twice as much for pork produced under higher animal welfare standards. However, they would have to be convinced of a better taste (as animal welfare remained secondary for them) and would prefer to buy this premium meat only on special occasions. Polish consumers are also inclined to pay a price premium of up to 30 % for more animal welfare. In some cases, the willingness to pay a premium in Poland is around 50 %. At the same time, there were also participants who honestly stated that they would not pay a price premium because the issue of animal welfare was irrelevant for them. The majority of Italian consumers stated that they were willing to pay a premium price of 10 to 20 or 25 %, if the higher standards were guaranteed by a certification system and implied higher quality.

All in all, participants in all countries were willing to pay a premium price if the quality was better. Nevertheless, they linked better quality with improved animal husbandry conditions and would be therefore willing to pay an additional price for this aspect as well.

## 4 Discussion and concluding remarks

The overall objective of this study was to identify important purchasing criteria when buying pork and to determine the relevance of animal welfare in this context. Thereby, the following study countries were examined more closely: South Korea, Japan, Italy and Poland.

Even if the participants preferred different cuts of pork depending on the study country, almost the same purchasing criteria was important to them. Therefore, especially the criteria freshness, appearance and quality were at the top of the list. Furthermore, the country of origin or the price were essential when purchasing meat. All these aspects can be confirmed by literature (Font-i-Furnols et al., 2019). According to Grunert et al. (2018) Polish and German consumers rate origin, fat content and color as important purchasing factors, since they have a positive impact on the consumers. In addition, especially in the Asian study countries the criteria safety and appearance were of high relevance. Lee et al. (2021) figured out that South Korean consumers relate acceptable appearance with fat preferences. Therefore, South Korean consumers can be divided in two groups, one preferring fatty pork and the other preferring lean pork products, this was also a result of the presented study. According to the focus groups, the topic animal welfare seems to be of little relevance in South Korea, Japan, Italy and Poland at this stage. While talking about the relevant purchasing criteria the topic of animal welfare was only named in Italy and to some extent in South Korea.

The limited relevance of animal welfare in the respective study countries is due to the limited knowledge of livestock farming as well as low empathy among the participants, which can be confirmed by literature (Takeda et al., 2010; Cornish et al., 2016; Grunert et al., 2018; Washio et al., 2019). When asking the participants about the term animal welfare, many participants emphasized that they have never heard this term before and therefore, they needed to guess the meaning of animal welfare. Thus, many participants mentioned the right aspects, such as more space or good feed and that the animals should be raised in a clean environment. Massaglia et al. (2018) discovered that Italian consumers associate stress absence, feeding and enough space with animal welfare. According to Pejman et al. (2019) Italian consumers highlight good feeding as the most important animal welfare aspect. The awareness of animal welfare in the Asian study countries was even lower than in the European study countries, this was also a result of Phillips et al. (2012) who studied student's attitudes to animal welfare and rights in Europe and Asia. Furthermore, the findings that Japanese and South Korean consumers have limited knowledge about animal welfare can be confirmed by the results of a previous study based on expert interviews (Derstappen et al., 2021).

All in all, animal welfare is not a big topic in either of the respective study countries. The participants care more about the freshness, quality and taste of the pork. Due to the information provided, their interest could be aroused. Nevertheless, the consumers interviewed see the pig primarily as a farm animal which ends up on the plate in the form of meat. Thus, the animals are not supposed to have stress and grow up in an unclean environment, because this leads to lower quality. A study by Massaglia et al. (2018) with

Italian consumers showed that young consumers link good husbandry conditions with high quality and are more interested in the quality of meat than in animal welfare. This goes in line with the presented results in this study which figured out that Italian consumers are very interested in the quality of meat and therefore combine better husbandry conditions with higher quality. However, the consumers do not seem to care whether the animal was "happy" or not. It seems that the ethical aspects behind animal welfare is not as relevant in the study countries as it is in other European countries such as Germany, Denmark or the Netherlands (Frewer et al., 2005; Jonge and van Trijp, 2014; Jonge et al., 2015; Cembalo et al., 2016; Schulze-Ehlers and Purwins, 2016). This might be due to both cultural differences, available knowledge and the varying economic power of the individual countries. In addition, literature shows that many consumers do not want to learn more about livestock farming methods because they do not want to deal with the reality of food production (Knight et al., 2003; Knight and Barnett, 2008; Cornish et al., 2016). Nevertheless, some participants in all four study countries already came into contact with the term animal welfare in terms of egg production. In this context, the participants particularly associated free-range and eco-friendly with eggs produced under higher animal welfare standards. This indicated that the interest in the topic of animal welfare could be increased by organizing an information campaign to educate consumers, thereby reliable labelling schemes can be one of various appropriate methods. This is also supported by the fact that some of the participants' views changed after receiving new information. As a result, consumers interest in and understanding of animal welfare increased. Nevertheless, it was repeatedly shown during the focus groups that quality is important for consumers which goes in line with results of other studies (Font-i-Furnols et al., 2019; Wojciechowska-Solis and Barska, 2021). Against this background, it was not surprising that the participants would be primarily willing to pay a higher price if the quality of the pork was better. However, if higher animal welfare standards have an impact on the quality and taste of pork, participants would be more interested in the subject of animal welfare.

The conducted method can be seen as a limitation: Online focus groups is a new concept due to Covid-19 and thus the process may have been a little different from traditional focus groups. The participants often had to be addressed directly and did not react immediately to each other, as participants of face-to-face focus groups would normally do. In addition, minor technical issues such as connection problems with the internet or with the headset could be observed. Nevertheless, the moderators were able to elicit a lot of information from the participants through their influence. As the focus groups were conducted in the national language, each country had an individual experienced moderator in order to minimize the interviewer bias.

All in all, first important results about the consumer behavior towards pork and the perception of animal welfare of Japanese, South Korean, Italian and Polish consumers could be generated, meaning that a part of the research gap could be filled. Nevertheless, the authors recommend that further studies need to be conducted to identify consumer preferences with regard to pork consumption in more detail. Therefore, quantitative studies might give additional information about the knowledge of South Korean, Japanese, Italian and Polish consumers about animal welfare.

## **5 Acknowledgement**

This study is part of the research project "ExPoTiWo – Export potential for German meat produced under higher animal welfare standards". The project is funded by the Federal Ministry of Food and Agriculture (BMEL) within the framework of the Federal Program Livestock Husbandry by decision of the German Bundestag. The project is managed by the Federal Office for Food and Agriculture (BLE).

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