

CONSUMERS' AWARENESS OF PIGLET CASTRATION AND ATTITUDES TOWARDS ALTERNATIVES TO SURGICAL CASTRATION: RESULTS FROM NORTH MACEDONIA

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ABSTRACT

One of the most challenging welfare problem in pig production is surgical castration of male piglets without the use of anaesthesia and analgesia. Farmers in North Macedonia are traditionally castrated their male piglets surgically unanesthetized in the first week of life, mainly to avoid the unpleasant boar taint of pork and to reduce male-specific behaviour, and this procedure is still common in most Western Balkans countries. Alternatives for avoidance of surgical castration in pig production are raising entire males or immunocastration. In order to provide an overview of consumer perception towards surgical castration and their alternatives, an exploratory survey was carried out involving 130 randomly selected consumers from April to June 2021 via an online questionnaire. The recruitment of the consumers was done through an existing network of professional and family acquaintances in an extended way, by further dissemination of the questionnaire through their networks. The questionnaire was development in COST IPEMA network and included statements related to consumption of pork meat, purchasing habits, awareness of piglet surgical castration and knowledge toward alternatives of castration. Respondents were asked to fill in socio-demographic information and their professional or personal connection to animal production. The most of the respondents were situated in urban area, therefore the results couldn't be generalized for rural people. Overall, 72% of the respondents were confident that the meat they

eat is safe. The most of the respondents (75%) had a positive attitude towards the use of vaccines in pig production. The majority of the respondents (62%) indicate that they did not know how male piglets are mainly produced. Overall, 45% of the respondents indicated to be aware of versus 55% unaware of the practice of piglet castration. Surgical castration without pain relief (47.3%) and rearing entire males (53.5%) showed the lowest acceptability. Within the alternatives castration with anaesthesia was broadly accepted by the respondents. Most respondents indicated that the lowest price is not crucial in decision to buy pork but good taste is primary. Two clusters could be defined based on the respondents' agreement to the different statement for each of the alternatives to surgical castration. However, after being informed, the majority wanted unanesthetized castration to be banned. In that context, a moderate to very high acceptability can be expected from the alternatives, if performed according to the best practices.

Key words: consumer beliefs, immunocastration, piglets' welfare, questionnaire.

INTRODUCTION

Animal welfare is becoming an increasingly important topic for consumers in the context of food source, traceability, and food quality. One of the most challenging welfare problems in pig production is surgical castration of male piglets without the use of anaesthesia and analgesia. Castration of piglets in the European Union (EU) is regulated by the Council Directive 2008/120/EC of 18 December 2008, relating to the minimum standards for the protection of pigs. Surgical castration of male pigs is a practice that will probably be completely abandoned in Europe in the future because of a growing concern for animal welfare. Some countries have a long tradition of using an anaesthesia during castration either this procedure is done by a veterinarian or farmers, such as Norway, Sweden, Switzerland and more recently this practice was introduced in Denmark and Germany (Enz et al., 2013; Weber et al., 2014; CASTRUM consortium, 2018). Production of boars is common in Spain, Portugal, Ireland, and United Kingdom, and since 2010, introduced in countries like the Netherlands, Belgium, and France. Immunocastration is applied to 5 up to 10% of the male piglets in a number of countries as well (De Briyne et al., 2016; CASTRUM consortium, 2018).

Male piglets are castrated primarily to avoid the unpleasant boar taint in meat, and additionally for the predisposition of cas-

trates to accumulate fat and for their lower risk of developing unwanted behaviours. Castration without the use of anaesthesia and analgesia is a painful and stressful procedure and is recognized as a reason for deteriorating animal welfare (Marchant-Forde et al., 2009). In consideration of these welfare issues, consumers show different beliefs and attitudes towards animal welfare, castration and meat from castrated pigs (Tomasevic et al., 2020a; Tomasevic et al., 2020b). The authors identified three clusters of consumers: one with consumers indifferent towards animal welfare; one with consumers concerned about animal welfare, but who believe it is difficult to achieve; and one with consumers concerned about animal welfare, and who believe it is possible to achieve. There are two main strategies available for withdrawing from surgical castration: one is immunocastration and the other is to raise entire male pigs or boars. Nowadays, consumers favour more lean meat, and this, together with some advantages from rearing intact boars, contributes to the avoidance of castration as a common husbandry practice in pig production.

The main aim of the exploratory survey was to evaluate consumer perception in North Macedonia towards surgical castration and the acceptability of each of the alternatives to male piglets' castration.

MATERIAL AND METHODS

Consumer attitudes towards alternatives for surgical castration of pigs were collected via an online questionnaire from April to July 2020. The recruitment of the consumers was done through an existing network of professional and family acquaintances in an extended way, by further dissemination of the questionnaire through their networks. Participation in the survey was voluntary and completely anonymous. The questionnaire was developed in COST IPEMA network and included statements related to consumption of pork meat, purchasing habits, awareness of piglet surgical castration and knowledge toward alternatives to castration. The questionnaire was organized in 6 parts.

Part 1, consisted of general questions regarding the consumption of pork meat and their purchasing habits and drivers, followed by questions on their experience with bad odours and flavours and about their (potential) reaction when experiencing a bad odour/flavour whilst preparing meat. Finally, they were asked about their attitude towards vaccination in general.

Part 2, respondents were asked about their awareness of piglet castration without anaesthesia as normal practice in many countries.

Part 3, respondents were asked if they knew how most male pigs were produced in their country.

Part 4, participants received basic information in an infographic about each practice and reason of piglet castration followed by

an explanation about the 4 options of how male pigs can be produced.

Part 5, attitudes towards the 4 options of how male pigs can be produced were assessed in three ways.

First, consumers were asked to score the acceptability of each option (totally acceptable, possibly acceptable, not acceptable, and I don't know).

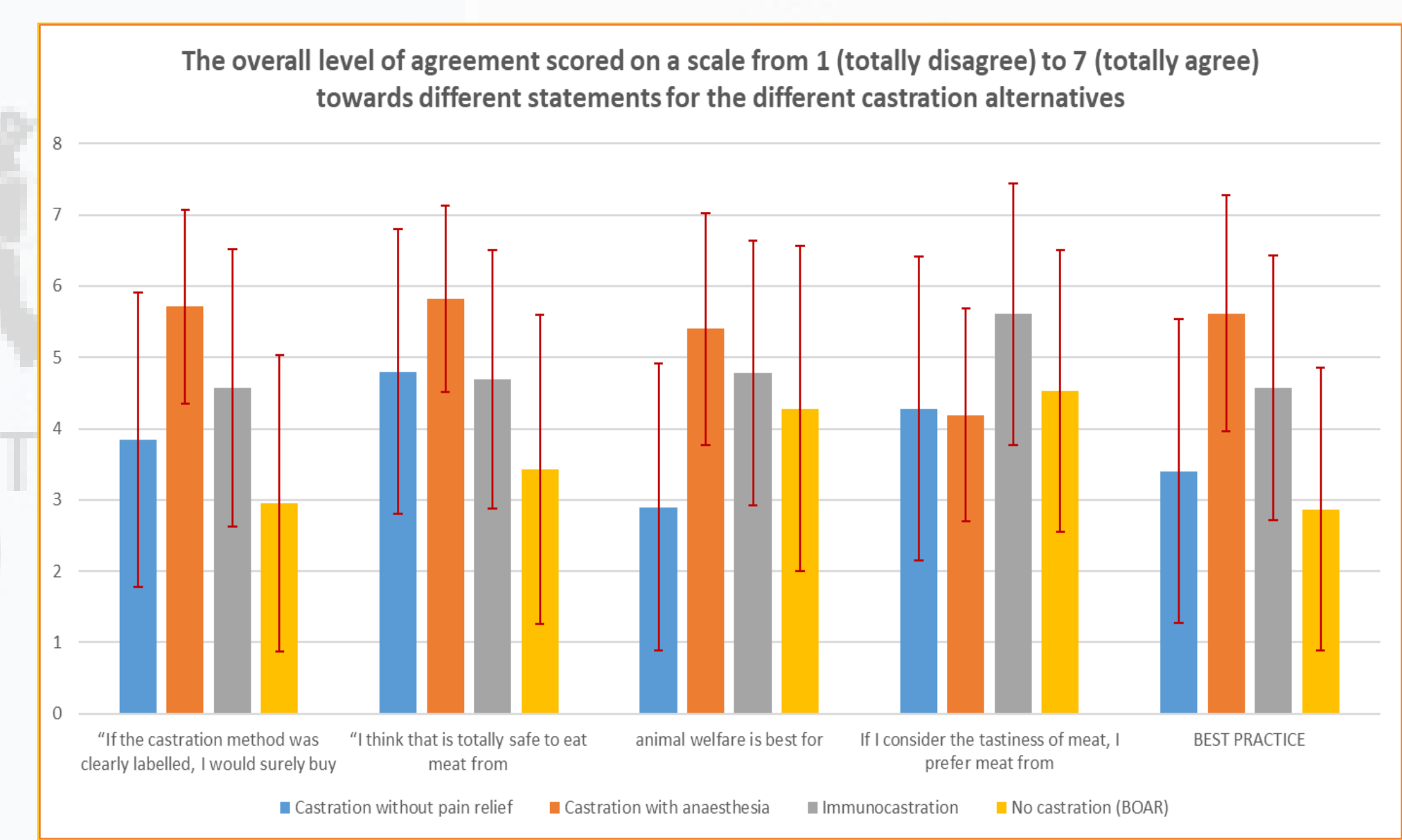
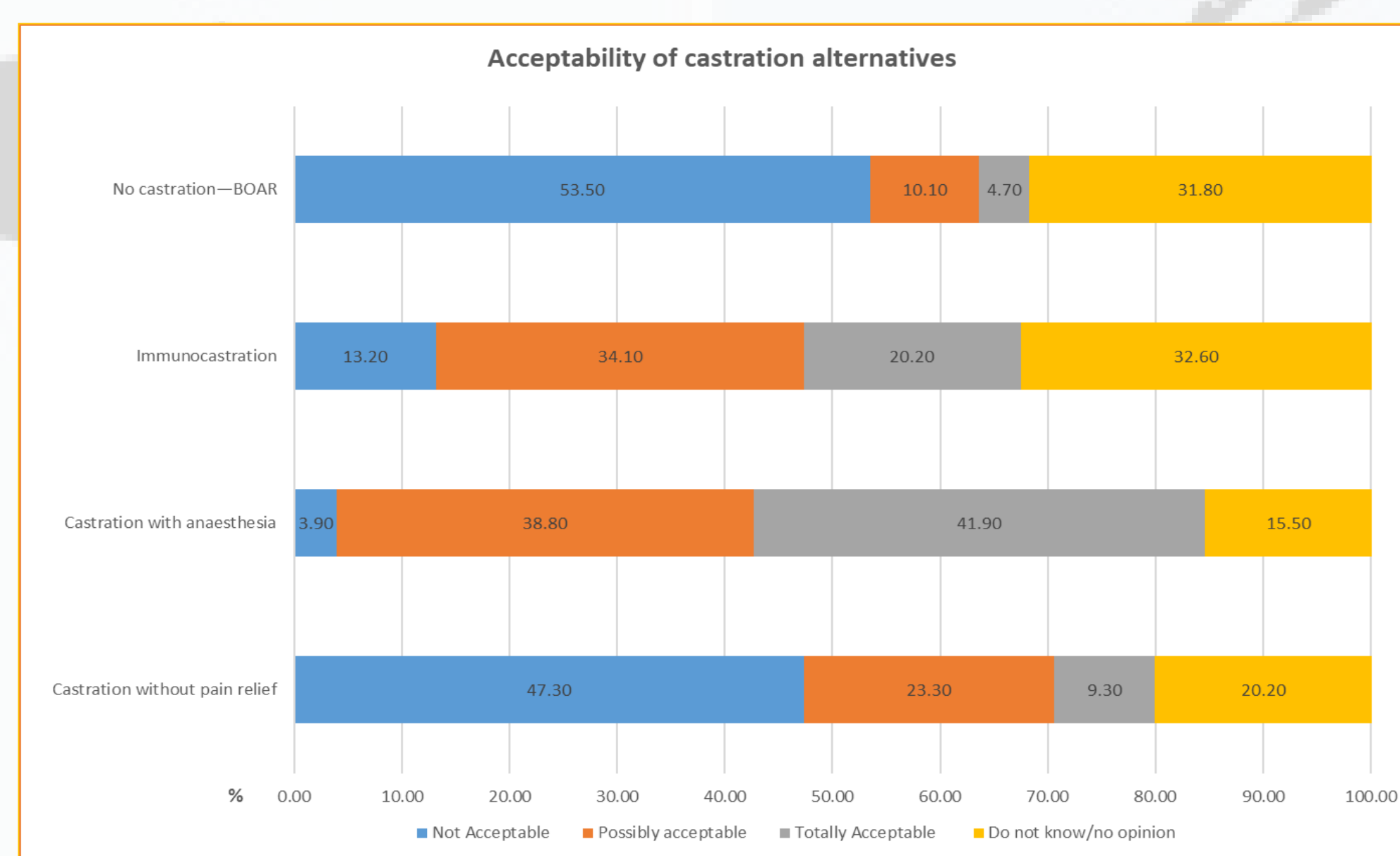
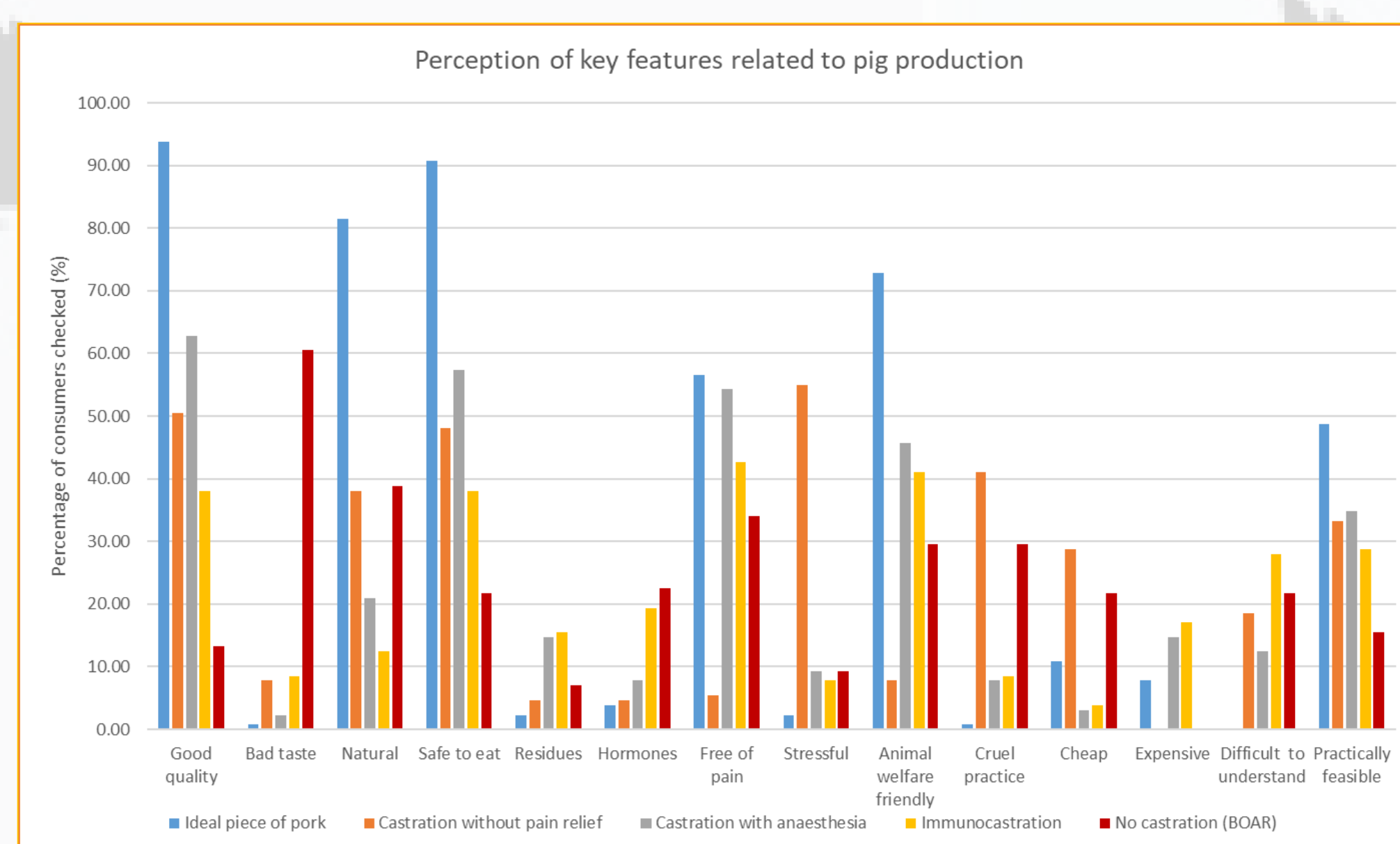
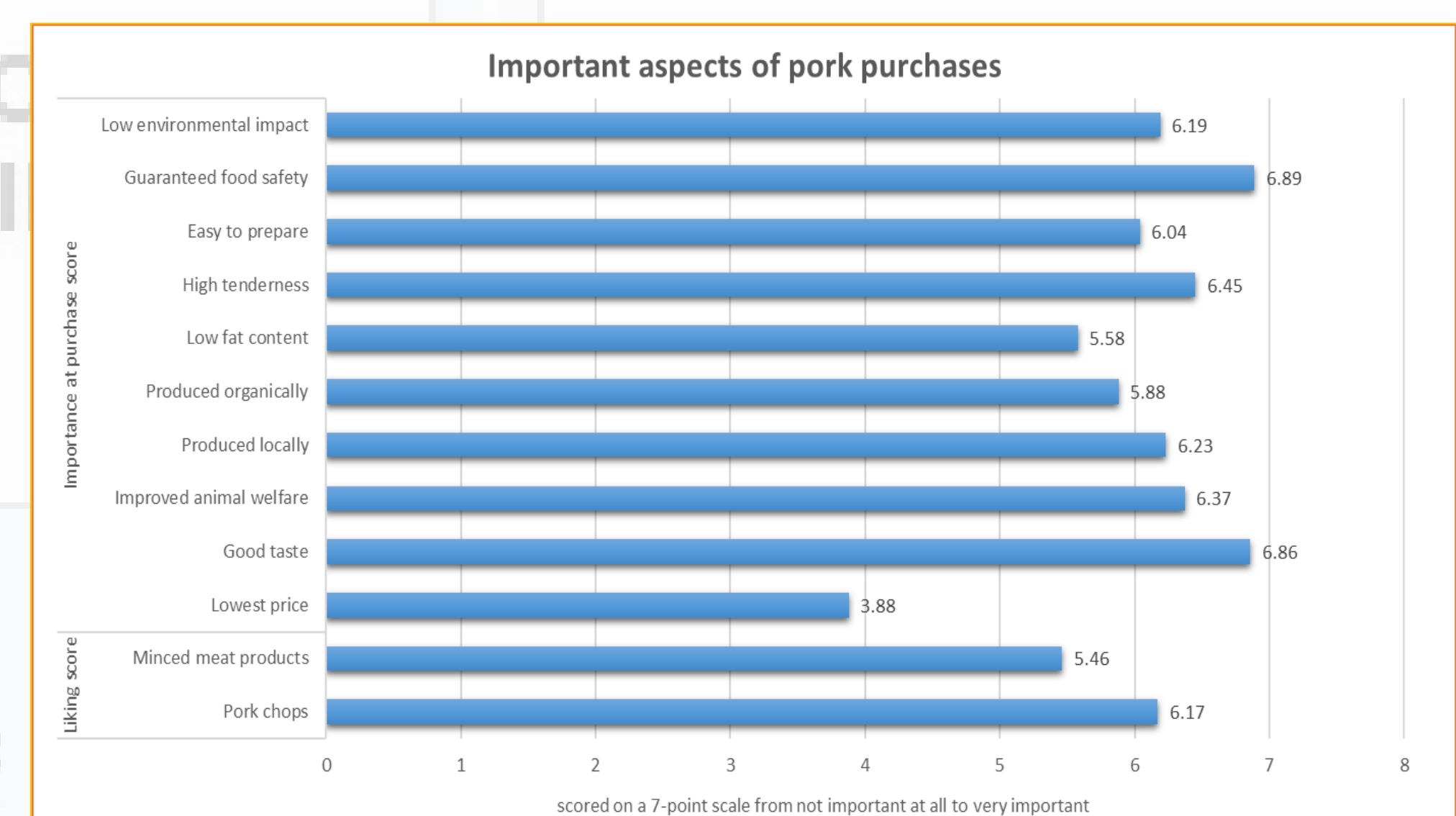
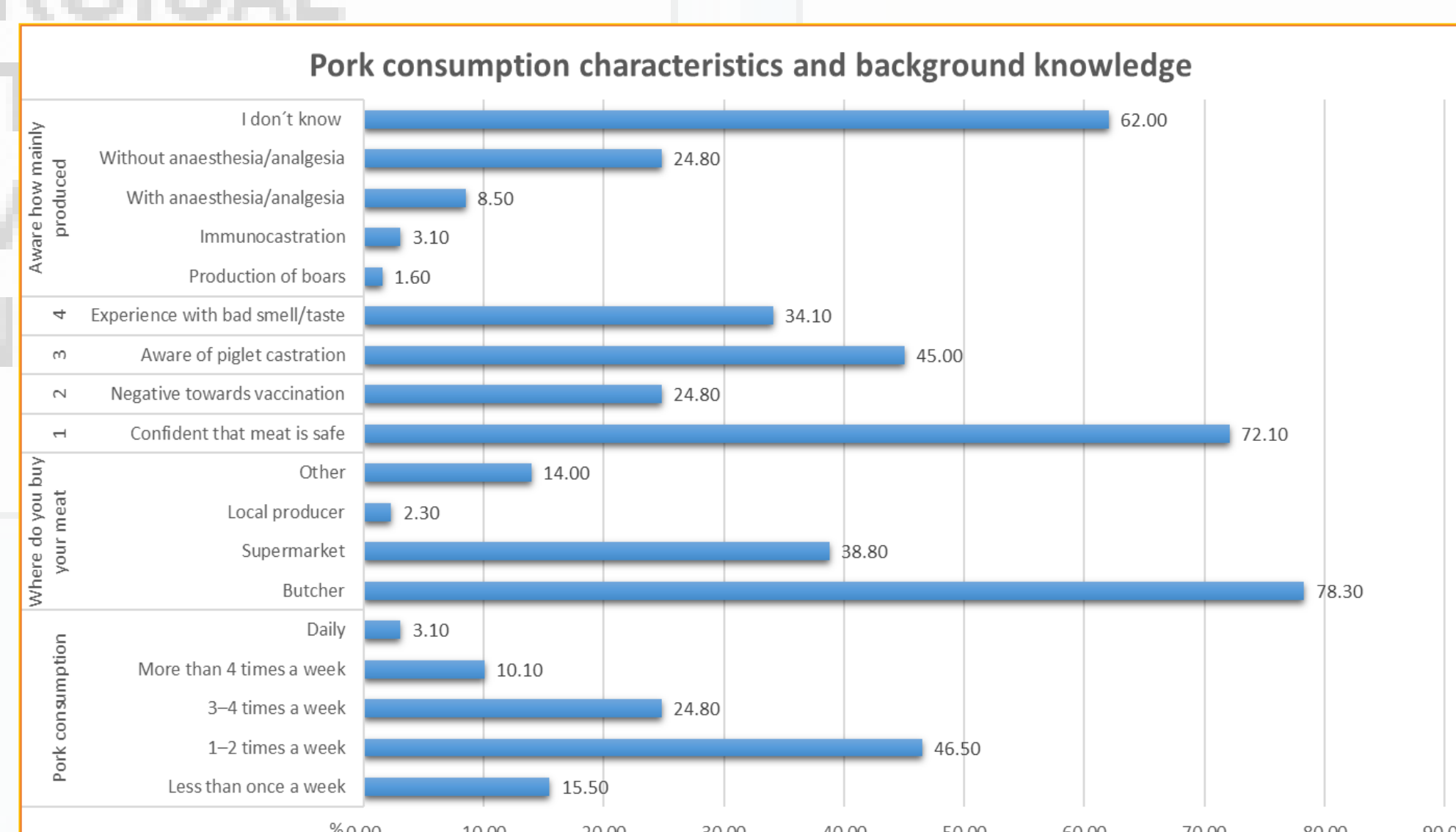
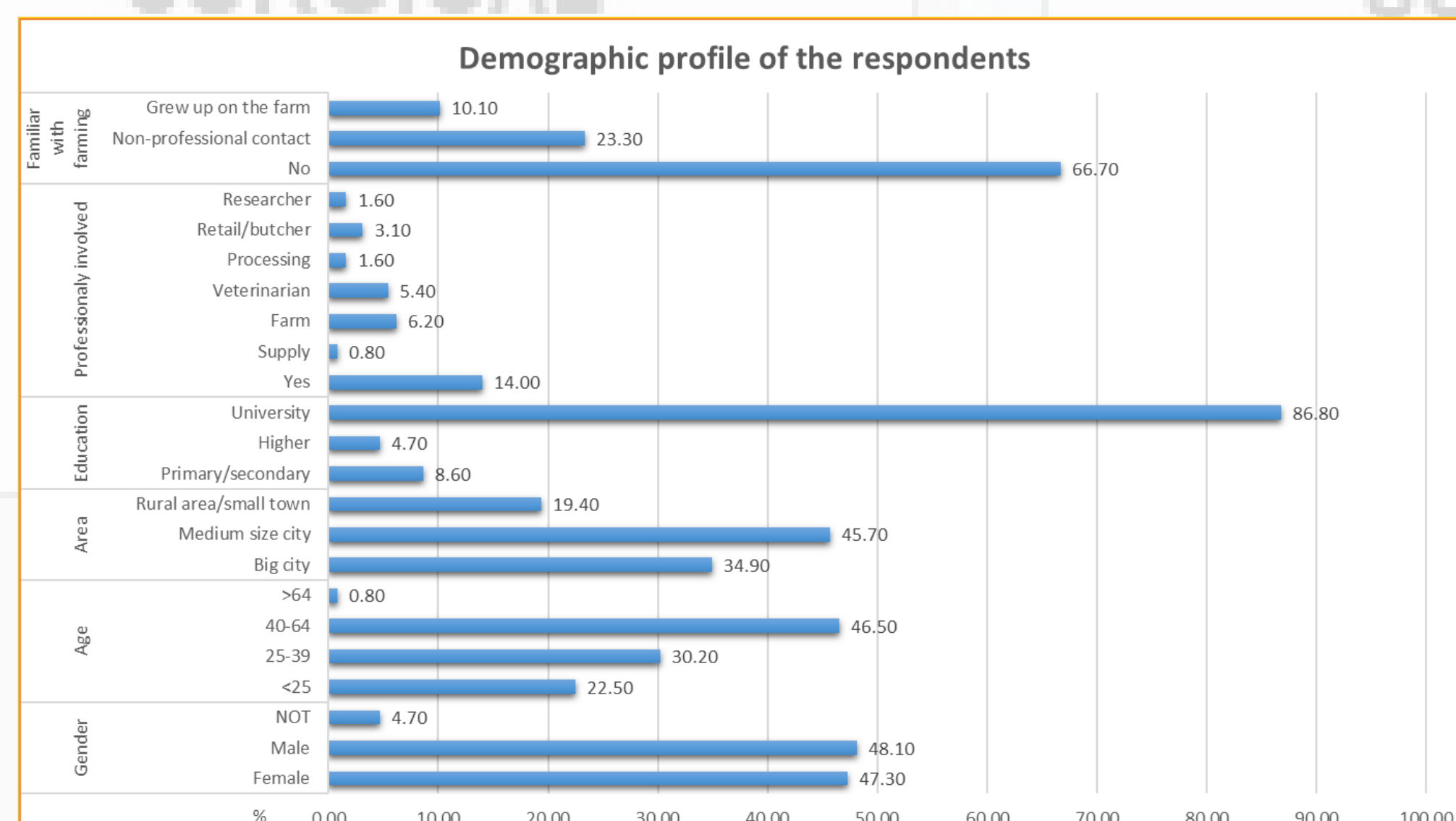
Second, consumers scored their agreement (score 1: totally disagree to 7: totally agree) towards 5 statements: "castration method was clearly labelled (LABEL)", "safe to eat meat from (SAFE)", "animal welfare is best for (WELFARE)", "If I consider the tastiness of meat, I prefer meat from (TASTE)", and "I am completely convinced that this is the best option (BEST PRACTICE)".

Third, respondents were asked to check all terms that apply to ideal pork (production) and the

4 options. Terms were based on 7 positive attributes (good quality, natural, safe to eat, free of pain, welfare friendly, cheap, practically feasible) and 7 negative attributes (bad taste, residues, hormones, stressful, cruel practice, expensive, difficult to understand).

Part 6, respondents were asked to fill in socio-demographic information (country, age category, gender, living area, education level).

RESULTS AND DISCUSSION



The results of this survey are mainly exploratory and do not allow strong conclusions to be made. Due to the specific respondent characteristics, the overall awareness of piglet castration within the entire group of respondents was 45% and is similar to those reported in other studies. When respondents were asked to indicate if they knew which method was practiced in their country, the numbers of awareness were lower and most of the respondents were not able to select the correct answer (62.00%). An awareness of 40 to 50% of piglet castration was also reported in the literature (Fredriksen, Johnsen and Skuterud, 2011; Vanhonacker and Verbeke, 2011). Several studies indicate that consumers usually relate factors such as naturalness, space allowance and freedom (free-ranged pigs) more to animal welfare than surgical castration of piglets. Unfamiliarity with pig production in general and this topic specifically can be one of the reasons for this. Respondents characterized the ideal piece of pork as "good quality", "safe to eat", "welfare friendly", and "natural". Out of the 4 presented options, castration with anaesthesia aligned mostly with ideal piece of pork. The respondents indicated that animal welfare, food safety, and eating quality or a combination of these was a main driver for choosing a certain option. Opposite, the term "hormone" in all cases has a negative connotation associated as something natural vs. artificial. However, immunocastration and rearing boars had the highest frequency for "difficult to understand", whilst this was lower for castration with anaesthesia, indicating that this fully corresponds with the selection of possibly acceptable and don't know in the scale of acceptability. As suggested in other studies, a more neutral scoring may also indicate that respondents are feeling uncertain when asked to judge the different alternatives (Tomasevic et al., 2020). Macedonian respondents can be grouped in two clusters based on the respondents' agreement to the different statement for each of the alternatives related to labeling, meat safety, animal welfare, tastiness of meat and best practice. The first cluster has similar attitudes for castration with anaesthesia and immunocastration and against castration without pain relief and rearing boars. These respondents disagree with the practice castration without pain relief and rearing boars for animal welfare reasons and best practices and are considered as valid alternatives for castration without pain relief based on safety, welfare, and taste. The second cluster had more neutral attitude towards castration without pain relief and rearing boars based on a positive score for tastiness and safe for eat of meat, and lower score for animal welfare.

CONCLUSION

The practice of castration without pain relief and rearing boars was overall least accepted, whilst there was high acceptance for castration with anaesthesia (41.90%), followed by immunocastration (20.20%). It can be concluded that non-professionally involved respondents generally answered based on the information that was presented in the infographic and much less on existing

knowledge. Therefore, the possible effect of negative or fake information is relevant, as the effect of a negative public campaign is often suggested as one of the main reasons that the pork production sector is reluctant to shift to the alternative of immunocastration. The respondents strongly distinguished the current practice from the alternatives due to animal welfare reasons.

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