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# COOL grocery shopping: Swedish consumers' perception of country of origin information and labels in an online shopping environment

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# COOL grocery shopping: Swedish consumers' perception of country of origin information and labels in an online shopping environment

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Though grocery shopping is largely done by habit, consumers are provided with continuous information aiming to inform and persuade them to make active choices. Online grocery shopping offers further ways for consumers to find, evaluate and compare products with just a few clicks. Country of origin labelling (COOL), providing consumers with further information, has gained popularity over recent years. What influences consumers to actively choose COOL products has been researched, but specifically Swedish consumers' evaluation of COOL online has remained unexplored.

The aim of the current study is to contribute to the understanding of consumers' evaluation of COOL in the online environment, particularly for Swedish consumers. A survey was distributed and the answers analysed in order to evaluate Swedish consumers' perceptions of COOL in the online environment.

The results suggest that Swedish consumers value COOL highly, since it aligns with their values. Those who have a higher interest in COOL pay less attention to price, and they are willing to pay more for Swedish products. Additionally, more ways to find and filter products online based on country of origin, is desired amongst consumers who value COOL.

### SAMMANFATTNING

Trots att mathandel ofta görs på ren vana, så förses konsumenter med massor av information med syfte att informera och övertyga de att göra aktiva val. Mathandel online erbjuder ytterligare sätt för konsumenter att hitta, utvärdera och jämföra produkter med endast ett par klick. Ursprungsmärkning, som förser konsumenter med än mer information, har vuxit i popularitet de senaste åren. Det har forskats kring vad som influerar en konsument att aktivt välja ursprungsmärkta produkter, men svenska konsumenters värdering av ursprungsmärkning i onlinehandeln har förblivit outforskat.

Syftet med denna studie är att bidra till förståelsen för konsumenters värdering av ursprungsmärkning i onlinemiljö, specifikt med hänsyn till svenska konsumenter. En enkät användes för att utvärdera och analysera svenska konsumenters uppfattning av ursprungsmärkningar i onlinemiljö.

Resultatet antyder att svenska konsumenter värderar ursprungsmärkta produkter högt, då de efterlever deras värderingar. De som har ett större intresse för ursprungsmärkningar lägger mindre vikt vid pris och är villiga att betala mer för svenska produkter. Dessutom efterfrågas fler tillvägagångssätt för att hitta och filtrera produkter online baserat på ursprung bland konsumenter som värderar ursprungsmärkningar.

Key Words and Phrases: country of origin (COO), country of origin labelling (COOL), consumer values, online grocery shopping

Nyckelord: ursprungsinformation, ursprungsmärkning, konsumentvärden, mathandel, online, svenskmärkning

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## 1 INTRODUCTION

Grocery shopping is a elemental part of our everyday lives. As we select our groceries, we rely on a range of different cues, such as price, appearance, country of origin and various labels [10, 42]. These cues have been researched for decades in the context of physical grocery shopping. However, grocery shopping is increasingly taking place online. In 2021, online grocery shopping represented 87 percent of the 3.7 billion SEK growth for grocery shopping in Sweden [28], and online grocery shopping is a ever growing phenomenon [28, 60].

As products are now often viewed through screens, rather than physically in front of the consumers, the grocery field, and subsequently the consumers' perception of the cues, is changing. Online, consumers rely primarily on the visual information that is presented to them, such as images and icons, and secondly on the textual information [14]. As products are typically displayed with equally sized images on pages filled with various products [17], and a lot of information is competing for the consumers' attention, important information can also be missed. Additionally, consumers tend to not regard information that is a click away at all [14], and their decisions are based on what they initially perceive. If cues are not clear, arguably, this leads to uninformed decisions.

Country of origin as a cue plays a significant role for the consumer when evaluating unfamiliar products [45]. For many types of food it is mandated by laws and regulations for the producers to inform consumers about the country of origin [30]. Country of origin labels (COOL) – distinct markings on products that clearly communicate the country of origin – are increasingly used as a way to inform consumers and make products more desirable. Indeed, it has been shown that consumers perceive that food with such labels tastes better [32]. Additionally, COOL aims to provide consumers with further information about products' transportation distances and production methods, which can become more evident when the consumer knows where the product originates [49].

Previous research states that COOL matters to consumers for various reasons, and that their values, such as caring about sustainability or supporting the national economy, play a specific role with regards to COOL [32]. Still, some research shows that while the number of various labels is increasing, consumers' understanding of them is decreasing [49]. These trends, combined with the various ways online stores display COOL [47], mean that there is great variation in consumers' perception of labels.

With online grocery shopping increasing it is interesting – from a research point of view, but also a producer, label, grocery store and society point of view – to investigate the correlation between consumers' interest, perception of and attitudes toward COOL in the online environment, as well as who chooses COOL products and why. This dissertation aims to investigate the following research question: How do Swedish consumers perceive and value COOL products and information in online grocery shopping environments?

## 2 LITERATURE REVIEW

In this section, the literature that has been considered for the current study is outlined. Topics of online grocery shopping, information structure and processing, country of origin labels, cues, values and demographics were deemed relevant.

### 2.1 Grocery shopping off- and online

Just like physical grocery stores, online stores compete for consumers in four main ways: pricing, product assortment, convenience and service [11]. Several studies on online grocery shopping show that the major reasons why people begin shopping online include saving time, caring for a sick relative, moving, convenience and avoiding long lines in physical stores [21, 31, 38, 63]. Anesbury et al. argue that those who choose to shop for groceries online tend to *"be younger and* *have higher incomes"* [12, p.263]. In Sweden, 10 percent of the population shops groceries online every other week or more often, however, over 60 percent of Swedes have never purchased groceries online [36]. Still, online grocery shopping is growing faster than grocery shopping in physical stores [28, 60].

The majority of online grocery stores today are extensions of already established physical stores [11]. Currently, in Sweden, the biggest online grocery retailers are ICA (owned by ICA Group [4]) with over 50 percent of the market share, Mathem, Mat.se, City Gross, Willys and Hemköp (owned by Axfood and Bergendahls [1–3]) with about 24 percent, and Coop (owned by Coop [72]) with just over 18 percent [37, 53].

Physical grocery stores, where consumers navigate aisles of products, are planned and designed to help consumers find and purchase products, and to inspire and encourage additional purchases, using methods such as visual merchandising and product displays [22, 23]. While online stores are largely built based on the same model [14], there are, however, major differences between the two. In a physical store, the consumer can pick up the products and use additional senses, such as smell and touch. Moreover, there are physical staff available to help the consumer locate and navigate amongst options. Within an online store, the products are represented by images and text on a screen, and the consumer relies completely on their vision and the access to the information [47]. However, with online shopping, the consumer can pause their shopping at any time and check their pantry if they need to buy certain products, whilst shopping. Online stores lack staff to assist the consumer if they struggle to find what they are looking for.

Generally, consumers who shop online tend to behave as they do when shopping in physical stores when they look for products, with the majority choosing to browse through the menus of product categories [14, 17, 54]. Consumers behave in similar ways possibly because shopping for groceries is, in fact, a low-involvement activity, and when browsing through the menus the consumer relies on recognition of products, rather than recall [14]. This method also offers consumers the possibility to evaluate alternatives in the chosen product categories [14]. Benn et al. found that the consumers in their study used the search function only when they failed at finding their desired products through the menus [14], which could be equated to asking an employee for help.

It is common for grocery stores to offer loyalty programmes for their customers, to collect points and bonuses when shopping, both online and in physical stores. Online shopping allows extensive individual information to be gathered, enabling completely tailored product selections, recommendations and pages for each consumer, based on their previous purchases and favourite-marked items [59, 61, 77]. Olzenak et al. [58] means that this creates opportunities for online stores to further develop and personalise the filtering functions within the menus, based on the consumer's previous choices and preferences. Berg et al. [17] also argue that the online environment enables further opportunities for consumers to quickly search and filter for certain attributes, such as country of origin, and that this type of product metadata, and how products are presented, can have a big impact on which products the consumer finds and chooses.

When shopping for groceries online, consumers make their product evaluations firstly based on visual information (e.g., images) and secondly through the first available textual information (e.g., descriptions), and any information that is an additional click away is rarely viewed at all [14, 17, 58]. As some senses, such as touch and smell, cannot be used in the product evaluation, many consumers are hesitant towards buying fresh produce when shopping groceries online, in comparison to a physical store [31, 61].

The information available online varies greatly compared to physical stores, which can lead to consumers not finding the desired information to base their decisions upon [58]. In their investigation of 555 product searches in seven different grocery retailers in Canada, Lee et al. [47] found that the presentation of products and available information, particularly that of different labels, varied significantly. Research on product imagery online shows that when displaying details and labels on product packages, consumers who are not familiar with a brand regard the labels positively, both in terms of assessing a product's size and physical attributes, as well as their attitudes toward the brand and product quality [15, 16].

Additionally, when presenting products online, the images used are often the same size, despite differences in actual product sizes, which can lead to difficulties and frustrations for the consumers as they are browsing the products [16, 17]. Online, the stores have great control over product presentation and imagery shown, while the producers and product brands have very little influence. Thus, the online stores have complete control over how any potential labels are, or are not, displayed to the consumers.

### 2.2 Country of origin information and labels in Sweden

Within the current study, 'labels' refers to a distinct marking on a product that clarifies specific information about the product, such as country of origin or method of production, i.e., not the general product information on the packaging. According to the Swedish Food Agency, origin means *"produce completely produced within one country or territory is to be considered originating from that country or territory"* [30]. Thus, country of origin labelling (COOL) refers to a label which communicates the country of origin of the product to the consumer.

Labelling of foods and products with their origin can be done on a regional or country level, or for a larger geographic area, such as the EU. In the Swedish and EU contexts, consumers prefer country of origin over both region of origin and the EU/non-EU alternative [25, 70]. Legislation within Sweden enforces the availability of origin information on country level for meat, fish, honey, fruits and vegetables [30]. For other kinds of food, it is voluntary to include country of origin, unless consumers risk being misled [30].

As an addition to the mandatory information, producers can label their product with independent labels in order to enhance the products' aspects, such as country of origin [44]. The "Från Sverige" ("From Sweden") label is a voluntary Country of Origin Label for Swedish-produced raw produce, foods and plants [7]. The label is owned and managed by Svenskmärkning AB, which was co-founded by three organisations: Lantbrukarnas Riksförbund, a non-political interest and business organisation; Livsmedelsföretagen, the industry and employer organisation for food companies in Sweden; and Svensk Dagligvaruhandel, the Swedish trade association for the grocery trade. The three owners run Svenskmärkning AB, and thus "Från Sverige", with equal shares, but without profit: all profits made from licences go back to the companies who use the label, for marketing and communication purposes.

Svenskmärkning AB was founded to support the Swedish food industry by providing consumers with information about food and other products, such as flowers, from Sweden [5]. In order to qualify for the label, a product must be grown or born and raised, refined, packaged and controlled in Sweden, depending on the type of product. This is ensured by an independent control agency [7], which performs random revisions of the producers each year [6]. The aim of the label is to increase awareness of products that fulfil the criteria, and thereby encourage consumers to choose these products [7].

### 2.3 Legitimacy and trust in labels

Research shows that consumers' general understanding of the growing array of different kinds of labels – country of origin labels, eco-labels, nutrition labels, regulation labels, etcetera – is low and decreasing at the same time as the number of different kinds of labels – and other ways to communicate the country of origin and product quality such as imagery, flags, symbols or even statements – are increasing [49, 75]. Despite the growing use of different labels, there is a huge lack of quality control, with some being owned by the brands themselves and thus not controlled by an independent party [35, 75]. Amongst EU consumers, just above 12 percent believe that labelling provides an additional reassurance of quality, and about 10 percent consider the safety of the food guaranteed with an origin label [25]. However, it is shown that in countries with high trust in institutions and governments, such as Sweden, consumers have a higher trust in such labels [73, 74].

Amongst the Swedish population, consumers generally believe country of origin is an important quality cue for food products, and women value it to some higher extent than men [32, 36, 42]. Producers are generally positive towards origin labels [18, 35], but also highlight that control is important to ensure legitimacy [35]. The producers' perception of origin labelling differs somewhat to that of the consumers, as the producers believe that consumers value the local connection above a specific label [35]. Fredriksson and Norberg [35] discuss that the producers believe that prioritising one known label (typically one of the eco-labels) provides enough information to the consumers, who may otherwise get confused or overwhelmed, and that for the smaller producers it can get too costly to maintain several certifications.

### 2.4 COOL and its effects

The aim of country of origin labels is to provide consumers with additional information, for instance about transportation distances and production methods, which can become more evident when the consumer knows where the product originates [49]. Certain attributes can be valued favourably based on the country of origin, for example the quality of the products [51], while others are regarded less favourably, such as animal welfare conditions [42, 45]. In that sense, COOL provides more information in its own right, as well as adds a layer of information on top of other attributes [49, 75] and therefore enables consumers to make more informed decisions.

Research on COOL often also discusses organic and ecological food and labels, here referred to as the Swedish denomination ecological and/or eco-labels. Research on COOL and eco-labels often treats them as interchangeable and complementary. They are in many ways similar, as a means to provide the consumer with more information about production methods, but the two are distinct. Similar to COOL, regulations vary in different countries for which produce may be labelled as ecological. Generally, organic or ecological food, here referred to as the Swedish ecological food, can be defined as, but not limited to, fruit and vegetables grown without unnatural pesticides, meat from animals who have been fed with ecological feed and allowed to live as naturally as possible with minimal use of antibiotics, and produced completely free from genetically modified organisms [9]. Hence, eco-labels are labels that aim to guarantee that the current regulations within the country of origin are fulfilled by the producer.

The two labels are often connected since COOL is notably affected by, and, in turn, affects eco-labels. Research into the effects of COOL and eco-labels in relation to one another show that country of origin information of a product can influence consumers' perceptions of the eco-label, since the country may have strict regulations regarding what can be labelled ecological [74, 75]. Thus, COOL both complicates and supplements eco-labels, and is at times even preferred over it [41]. Thøgersen et al. [75] argue that COOL is assigned less value for a single product when an eco-label is available, but when comparing two ecological products, country of origin plays a significant role in consumers' decisions.

### 2.5 Cues and product attributes

When evaluating products, consumers make their decisions based on different product attributes, or cues, which are of different value to different consumers depending on, for example, socioeconomic factors and previous experiences [42]. Cues are either intrinsic or extrinsic *"informational stimuli available to the consumer"* [10, p.104]. When intrinsic cues, such as taste, are difficult to assess, consumers rely on extrinsic cues, such as price or country of origin, instead [10].

Research shows that while country of origin matters as an extrinsic cue [42], it tends to have less value to the consumer when other extrinsic cues, for example price, brand, appearance or different dates, are available [10, 18, 26, 75]. Ahmed et al. [10] also argue that the extrinsic cues, such as COOL, may be disregarded in favour of habit or preference due to familiarity, i.e., an intrinsic cue. This aligns with previous research that shows that extrinsic cues, such as country of origin, play a bigger role for unfamiliar products or when food characteristics, for example taste, are difficult to evaluate [45]. However, some research shows that Swedish consumers perceive food with labels such as ‘ecological’ or ‘Swedish’ as better tasting than conventional products, regardless of familiarity [32].

One cue that has been particularly researched in connection to COOL is price. Despite research showing that COOL is valued amongst consumers [32], they are not always willing to pay for it [34, 51]. According to a study from the Food Chain Evaluation Consortium (FCEC) there is a high willingness to pay more for products with origin labelling [26]. However, it is also noted that there is a discrepancy between intention and actual behaviour when it comes to the food actually purchased by the consumer [25, 32, 76], adding to the argument that price, as a cue, usually plays a bigger role than country of origin. Hoffman argues that the fact that Swedish consumers are not willing to pay more for COOL products means that the so-called Swedish model – i.e., an emphasis on high process standards, reduction of antibiotics and strict disease control programmes – has *“failed to give Swedish producers a competitive advantage”* [42, p.225]. There are, however, product categories which the consumers are willing to pay more for, when the products are labelled with their country of origin. For fresh meat products, salads, bread, frozen vegetables and vegetable oils, country of origin has been deemed a more important attribute than for, for example, processed foods [26, 34]. The results of a comparative study for different kinds of fish showed that Swedish consumers valued fish from the North Atlantic over fish from the Baltic Sea, supposedly due to knowledge about environmental issues regarding certain areas [69], suggesting that origin was a more important cue than price.

### 2.6 Consumer values

When choosing products, and particularly COOL products, individual values play a specifically important role in the decision making [39]. In a study on the choice of local foods in northern Sweden, Nicolosi et al. [55] highlight that consumers who choose cheeses produced in their surrounding area do so because they feel a strong connection to that area and want to support the local economy. Bryła means that products and food produced in one’s own country are often more environmentally friendly, since transportation is shorter, and chosen by consumers for this reason [18]. Lindrup et al. highlight that food produced locally but off season is assumed to be produced with artificial heating, and is thus less attractive to sustainability conscious consumers [49].

Values, such as sustainability and familiarity, contribute to consumers choosing products specifically produced in their own country [32], and, as Lindrup et al. [49] outlined in their study, online grocery shopping further enables consumers to shop sustainably by providing access to information about the products just a few clicks away. The structure of information is also rather unique in the online environment [49], which can aid consumers in comparing products based on specific variables. Therefore, online grocery shopping further enhances the possibility for consumers to choose products that align with their personal values, if that information is available to them.

Another factor that affects consumers’ choice of COOL products is their love for their own country, their will to strengthen and support their country, or even their unwillingness to support other countries [20]. This factor is called ethnocentrism or cultural bias [13] and is observed to varying degrees in people [18, 45]. Juric and Worsley [45] proved in their early work that an individual’s level of ethnocentrism plays a significant role when it comes to the their choice of products, and argue that it should be included in all research regarding choice between domestic and foreign products. The role of ethnocentrism is further enforced by Bryła [18], who determined that when it came to country of origin being the most important attribute, ethnocentrism is an important aspect.

Highly ethnocentric consumers pay a lot of attention to the country of origin and choose domestic over foreign products [24, 32]. Consumers with lower levels of ethnocentrism also tend to evaluate domestic products favourably, but are more inclined to include other cues in the evaluation, and do not reject foreign alternatives [24]. Ethnocentrism affects the extent to which consumers pay attention to COOL in situations where little other information is available [50], preferences for products with particular origin [75], the perceived quality [18, 24], and the *"morality of purchasing foreign-made products"* [10, p.105]. Ethnocentrism is particularly evident amongst consumers who value ecological products, with over 90 percent preferring ecological pork originating from their home country over imported ecological pork [75].

In the FCEC study, it was concluded that over 40 percent of consumers would favour domestic products if origin information was available [26]. Thøgersen et al. [74] argue that ethnocentrism and preference for domestically produced products is generally higher in developed countries than in developing countries, where imported products may even be preferred. However, in situations where imported products are considered superior to domestic ones for different reasons, such as Italian pasta or French cheese, ethnocentrism results in a more positive view of the domestic product, even though consumers choose the imported ones [71].

### 2.7 Consumer demographics

Previous research has shown that consumer demographics influence COOL purchasing behaviours and preferences. Several studies show that women choose locally produced products to a higher extent than men [18, 41, 42, 46, 69]. In their study on the Swedish KRAV eco-label, Lannhard and Larsson [46] include women, men and 'others', but found no significant differences for 'other'.

It has also been argued that consumers who prefer COOL products tend to be older [41, 67]. Shafie and Rennie [67] highlight the positive relation between age and income, as well as education and income, and argue that older consumers are more highly educated and therefore have higher incomes and tend to choose locally produced foods more often. Hempel and Hamm [41] also argue that those who value and choose local food tend to have a higher educational level. Interestingly, in their sample, Vermeir and Verbeke intentionally selected respondents with higher education based on the argument that *"they supposedly have some awareness on the concept of sustainability"* and thus could provide a reliable result [76, p.178].

## 3 METHOD

Similar work has used both qualitative and quantitative methods, depending on what is examined. The current thesis utilised a mainly quantitative approach in order to get an overview of the Swedish consumers' perception of COOL online. This has not been done on the Swedish market before, though has been conducted in similar studies in other countries (e.g., [18]). The following section describes the method.

### 3.1 Survey and construction

In order to gather quantitative data for analysis, an online questionnaire was devised. As the aim of the questionnaire was to gather quantitative data, the questions had alternative answers, specifically multiple choice, single choice and Likert scales. Some questions allowed for free text answers, but only two of them were mandatory (discussed further below).

As the study targeted the Swedish market and Swedish consumers, the survey was composed and distributed only in Swedish (see appendix A).

The survey began with an introduction, with the aim of ensuring that the respondent had previously bought groceries online and was over the age of 18. The survey also included some definitions on labels in general, the label "Från Sverige" and the term origin from Sweden, presented to the user in the appropriate questions (see appendix A). Questions that could be difficult to answer included "Do not know" or "Unsure" as options. The questions in the survey were largely based on similar previous research (e.g., [10, 18, 24, 46, 54]), to build on existing knowledge, as well as provide an equivalent basis for future research on the topic to continue to build upon.

*3.1.1 Online shopping and stores.* The first part of the survey aimed to clarify which store the respondent typically shops with and how they perceive COOL online. For the questions regarding stores, the biggest ones in Sweden [37, 53] were listed as options, with 'other' as a final alternative and a free text field for entering which other. The purpose of gathering information about the respondents' preferred store was to allow for comparisons between how the stores were perceived by the respondents. The questions regarding why the respondents shop online in general and with their preferred store (Question 1 and 4, appendix A) were the only mandatory free text questions.

*3.1.2 Products.* Steptoe et al. [68] developed a standardised Food Choice Questionnaire (FCQ), which has been used, referred to and adapted to by multiple studies on food and choices since (e.g., [24, 27, 52]). With the aim of making the current study useful for other research, familiarity, adapted from the FCQ [68], was added to the options regarding important aspects when shopping online (Question 10, appendix A).

When the respondents were asked to rate the importance that products from a given category originated from Sweden (Question 11, appendix A), the categories listed were ones where products *can* be from Sweden, i.e., coffee and tea, to name a few, were not included. The meat products were divided into smaller categories, as it was regarded possible that there were variations between, for example, poultry and fish. Additionally, as Sweden is one of the highest ranked countries in dairy product consumption [33, 62], dairy products was listed as its own category, which is uncommon in similar studies (e.g., [10, 32, 42, 45, 51]).

Previous research has shown that price is highly relevant with regards to country of origin. Therefore, this survey included a question regarding the respondents' willingness to pay more for Swedish products. Importantly, the question states "even *if* they are more expensive" (Question 13, appendix A), as products from Sweden do not have to cost more, but if they do, it is relevant to know if the respondents still think they would choose products from Sweden.

The motivation behind the choice of products from Sweden is central to the current study. To investigate the respondents' rationale behind these choices, a question regarding how important certain aspects were to the respondents when they chose products from Sweden. The respondents were given six statements that represented the main reasons and values behind why consumers choose COOL products (Question 14, appendix A), gathered from the literature review (e.g., [18, 42, 45, 48, 74]), Svenskmärkning AB's *Swedish added values* [8] as well as Jordbruksverket's (The Swedish Board of Agriculture) *Added values in Swedish food* [43].

*3.1.3 The "Från Sverige" label.* Section three of the questionnaire was dedicated to questions regarding the "Från Sverige" label, and the respondents' perceptions of the label. The familiarity with the label (Question 15, appendix A), which the respondents rated from 1 ("Not at all") to 7 ("Very familiar"), was of key interest. As Sweden's only COOL, it was deemed interesting to see the connection between the respondents' familiarity with the label and how they valued produce from Sweden. Additionally, section three contained questions on the respondents' trust in the label and their choice of products with the "Från Sverige" label above other labels (Question 17 and 18, appendix A).

*3.1.4 Demographic questions.* Though the survey was anonymous, demographic questions were included in order to ensure that the study would be beneficial for future research, and to correspond to previous research. The demographic questions were placed in the last section of the survey in order to not impact respondents' answers to other questions, since the demographic section included a question about diets (e.g., flexitarian and vegan). For example, if the respondent knew that they answered that they are vegan, they may consider answering the question about country of origin of meat that they simply do not eat it, however if they are not primed by this question, they may consider country of origin of meat important if they apply it to, for instance, a partner who eats meat.

Previous research has included the educational level of the respondents, and discussed it as both relevant and irrelevant with regards to COOL (e.g., [10, 18, 69]), thus it was also included in the current survey. The educational levels used in the survey were adopted from Statistiska Centralbyrån (Statistics Sweden) from their general information about the educational levels in Sweden [64].

Where the respondents lived was also regarded relevant, as online shopping may be more or less common and accessible in urban areas versus the countryside. For this, respondents were asked to state where they live, with options for the countryside as well as different size cities (Question 26, appendix A). In addition, a question about the respondents' region was included, with the options retrieved from Sveriges Kommuner och Regioner (The Swedish Association of Local Authorities and Regions) [56], to provide an overview of the distribution of respondents across the country.

As price is highly relevant when consumers consider COOL products, household income could offer another dimension of understanding the correlation between price-sensitivity and financial circumstances. Respondents were therefore asked to estimate their monthly household income. The options were taken from a study by Länsstyrelsen (The County Administrative Board) developed in 2015 [40]. The options in that study were in ranges of 10 000 SEK, which were adapted to ranges of 20 000 SEK for the current study (Question 24, appendix A), in order to simplify for the respondents.

Special attention was given to the question regarding gender. Previous research has observed differences between men and women and their interest in country of origin and COOL products (e.g., [18, 42, 69]), and therefore it was considered relevant to include gender in the current study as well. However, in order to be gender inclusive, and in line with D'Ignazio and Klein's *Data Feminism* [29], 'non-binary' and 'other' were included as options, in addition to 'female' and 'male'.

For all demographic questions that gathered personal data that could be considered as sensitive, the respondents were given the option to not answer.

### 3.2 Pilot study

Before the questionnaire was distributed, a small pilot study was conducted, where eight respondents filled in the questionnaire. The respondents offered feedback on the questions, the alternative answers, which questions should or should not be mandatory, the time spent, and any other thoughts that occured as they filled in the questionnaire. Apart from feedback, the answers and data given through the pilot study were examined in terms of usefulness for the study, and some formulations were altered and some questions were discarded. The answers from the pilot study were not included in the final dataset.

### 3.3 Distribution and sample

The questionnaire was distributed mainly through Svenskmärkning AB's digital communication channels Instagram [URL] and Facebook [URL]. Additionally, it was shared through the author's personal social media channels, as well as those of the employees at Svenskmärkning AB.

## 4 RESULTS

In this section, the data collected through the survey is presented. The data has been cleansed, misspellings have been corrected and some data, such as yes and no answers, has been encoded. In order to analyse the quantitative data, the author has used descriptive statistics calculations, Spearman's correlation coefficient, and Linear Regression analysis. The calculations were made with ready formulas in Microsoft Excel. The qualitative data generated from the free text answers has been analysed for themes. This was done through a first rough review of the topics mentioned in the comments, which were then refined and consolidated to an appropriate number of themes.

After data cleansing, the survey produced 53 responses. Based on the population size of four million (40 percent of Swedes shop online [36]), a sample of 385 respondents is required for 95 percent certainty, and 271 for 90 percent certainty. Although an ideal sample was not achieved, the project was limited in time, and no further data could be collected. Further, due to the small sample size, the data that was collected about the respondents' preferred online store could not be analysed for specific conclusions. Still, the total data suggests some interesting results, which are outlined in the sections below.

### 4.1 Respondent demographics

All age groups (above 18 years old) were represented amongst the respondents of the survey. The younger ages had a clear overrepresentation, with a large part, 21 out of 53, between 18-29 years old, and 17 between 30-39 years old. A large majority of the respondents, 42 out of 53, stated that they identified as female, 10 respondents stated that they identified as male, and one preferred not to answer. No respondent stated that they identified as non-binary or any other.

Among the respondents, 26 stated that they have had Post-secondary education (more than three years) and 20 stated that they have had Post-secondary education (three years or less than three years). All respondents stated that they have had secondary or post-secondary education of some kind. In terms of current occupation, 31 stated that they were employed, 12 that they were studying, three stated that they were unemployed, and three that they were retired. Four stated 'Other'. The level of income amongst the respondents was rather equally distributed across the intervals. 14 out of 53 respondents, stated that their monthly household income was between 20 000 and 39 000 SEK, though the mean monthly household income amongst the respondents was between 40 000 and 59 000 SEK ($\bar{x}$=3,09, $\tilde{x}$=2, $s$=1,6).

Out of the 21 regions in Sweden, 16 were represented among the respondents. 21 out of 53 respondents reported that they lived in a city with over 200 000 citizens. 13 respondents stated that they lived in a city with 100 000 up till 200 000 citizens, and 10 stated that they lived in the countryside.

The majority of the respondents, 33 out of 53, stated that they live in a household with no children (under 18 years old), nine stated that one child was living in their household, and nine others stated that two children were living in their household. Two respondents reported that three children lived in their household. Most respondents, 39 out of 53, responded that they lived in a household with two adults (over 18 years old), and 14 stated that they live in a household with only one adult (themselves).

41 out of 53 respondents stated that they held the main responsibility for purchasing groceries in their households, 11 stated that they shared the responsibility, and one respondent stated that they had no responsibility in buying the household groceries. 33 out of 53 respondents reported to mainly have an omnivore diet in their household, 15 that they were flexitarian, three that they were vegan, and the final two that they were vegetarian.

### 4.2 Online shopping

Among the respondents, the amount of times they shopped online was evenly distributed between "Have only tried once or twice" and "More often than once per week". The most common alternative was "A few times per month" ($\bar{x}$=3.55, $\tilde{x}$=4, $s$=1.37), with a majority of respondents shopping online "A few times per month" or more often (32 out of 53).

Based on a thematic analysis of the free text answers provided by the respondents about why they chose to shop groceries online, nine themes were identified; Logistics, Convenience, Time saving, Comfort, Pandemic, Planning, Price, Product assortment and Sustainability. The main reasons were Logistics (20 out of 53) and Convenience (19 out of 53), for example due to not having access to a car and/or not living near a larger grocery store. 15 of 53 respondents answered that Time saving was an important reason. The Pandemic was given as a reason by eight respondents, Planning by five, Price by another five, Product assortment by two and lastly Sustainability by one respondent. The respondents were also asked to state why they had chosen their preferred online store. The data was cleansed and 10 themes were identified, listed in order of identifications; Product assortment (19 out of 53), Prices (15), Habit (nine), Delivery times (seven), Membership (seven), Service (seven), Quality (six), Delivery cost (five), Geographic availability (four), and Website (four).

18 of the respondents stated that the stores provided no information at all about different labels and their meaning. Interestingly, 18 were also unsure, and 17 responded that the store *did* provide information. 14 respondents commented on why they thought that information was provided. The data was cleansed and six themes were identified: Information (text) (five out of 14), General labels (four), Flags and icons (three), The "Från Sverige" label (three), Filtering options (two) and Information on receipts (one).

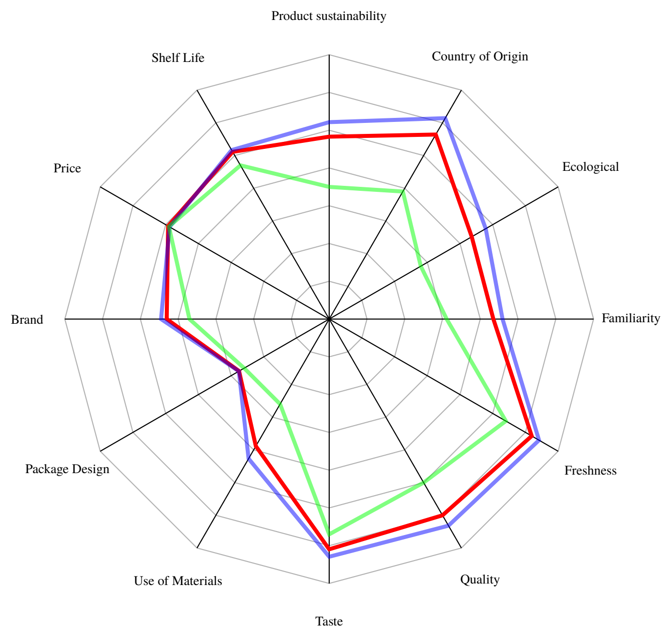


Fig. 1. Average value of aspects: red=total, blue=female, green=male

The respondents were generally more positive towards the availability of information and labels (Question 7, appendix A; "...generally see the country of origin for products?" $\bar{x}$=4.65, $\tilde{x}$=5, $s$=1.96; "...see that products are labelled with the "Från Sverige" label?" $\bar{x}$=4.86, $\tilde{x}$=7, $s$=2.01), compared to the availability of filters for products based on the same qualities (Question 7, appendix A; "...filter products based on country of origin?" $\bar{x}$=3.26, $\tilde{x}$=1, $s$=2.46; "...filter products labelled with the "Från Sverige" label?" $\bar{x}$=3.28, $\tilde{x}$=1, $s$=2.51). Several respondents reported 'Do not know' with regards to the filtering questions (14 on each question), which are excluded from the calculations. There was small positive correlation between the respondents' perception of the availability of information and general interest in COOL ($\rho$=0.306), and similar results were found between the general interest in COOL and the respondents' perception of the availability of the "Från

Sverige" label ($\rho$=0.403). Notably, there was a slight, albeit small, negative correlation between general interest in COOL and the attitude towards filtering possibilities of the "Från Sverige" label ($\rho$=-0.1).

A small positive correlation was identified between those who were generally interested in COOL and how thoroughly they looked for an indication of origin that they relied on ($\rho$=0.217).

Between the different aspects investigated (Ecological, Country of Origin, Product sustainability, Shelf Life, Price, Brand, Package Design, Use of Materials, Taste, Quality, Freshness, and Familiarity), Freshness was rated as the most important by the respondents ($\bar{x}$=6.19, $\tilde{x}$=7, $s$=1.47) when shopping groceries online, while Package design was rated the least important ($\bar{x}$=2.75, $\tilde{x}$=1, $s$=1.63). Comparing the respondents who identified as female and male (the data was insufficient for any other comparisons), those who identified as female tended to respond on average higher on all aspects when shopping groceries online (Figure 1). The biggest difference in importance was for Country of Origin (female $\bar{x}$=6.14, $\tilde{x}$=7, $s$=1.30; male $\bar{x}$=3.9, $\tilde{x}$=6, $s$=2.13). On the other hand, the only aspect which those who identify as male rated on average higher, though only slightly, was Price (female $\bar{x}$=4.88, $\tilde{x}$=6, $s$=1.64; male $\bar{x}$=4.9, $\tilde{x}$=5, $s$=1.52). Among those who identified as female, Freshness was rated highest ($\bar{x}$=6.41, $\tilde{x}$=7, $s$=1.53).

A positive correlation was found between the respondents' general interest in COOL and the importance of Country of Origin when shopping online ($\rho$=0.677). General interest in COOL and Freshness had the highest correlation of the aspects ($\rho$=0.434), except for COOL at the moment of purchase. There were also notable positive correlations between the importance of Country of Origin when shopping online and Freshness ($\rho$=0.554), Quality ($\rho$=0.519), Product sustainability ($\rho$=0.544), Ecological ($\rho$=0.435) and Familiarity ($\rho$=0.420). Between general interest in COOL and Package Design there was a small negative correlation ($\rho$=-0.123). Notably, Price also leaned very slightly towards a negative correlation ($\rho$=-0.102).

### 4.3 Interest in COOL

Overall, the respondents of the survey reported a high general interest in COOL ($\bar{x}$=5.55, $\tilde{x}$=7, $s$=1.73). The respondents who identified as female reported a substantially higher interest in COOL than those who identified as male (female $\bar{x}$=6.05, $\tilde{x}$=7, $s$=1.32; male $\bar{x}$=3.7,$\tilde{x}$=2, $s$=1.89). A very small negative correlation was found between the respondents' age and general interest in COOL ($\rho$=-0.147), and a small negative correlation was also found between educational level and general interest in COOL ($\rho$=-0.161).

By encoding the responses with numbers one to seven with regard to the size of the city, a negative correlation was found between the size of the place where the respondents live and their general interest in COOL ($\rho$=-0.315).

Analyses of the data allowed for the characteristics of consumers who value COOL the highest to be identified (Table 1).

Table 1. Characteristics of consumer valuing COOL highly

| Criteria | Segments |
|---|---|
| Gender | Female |
| Age | 30-39 |
| Educational level | Secondary education |
| Occupation | Working |
| Monthly household income | 40 000 – 59 999 SEK |
| Place of living | Countryside |
| Number of adults | 2 |
| Children in the household | Yes |

### 4.4 Why Swedish consumers choose COOL products

Among the different categories of groceries investigated (Bread, Fruits and Vegetables, Dairy Products, Canned and Pickled Foods, Cereal and Muesli, Nuts, Pasta and Grains, Meat and Charcuterie, Poultry, and Fish and Seafood), country of origin was rated as the most important for Dairy products ($\bar{x}$=6.33, $\tilde{x}$=7, $s$=2.25), which was also the only product category where no respondent answered 1 on the 7 point scale. Country of origin for Nuts was rated as the least important ($\bar{x}$=3.54, $\tilde{x}$=4, $s$=1.97) (Figure 2).

Comparing between respondents, those who identified as female valued COOL, on average, higher for all product categories than those who identified as male (Figure 2). The highest valued category amongst those who identified as female was Poultry ($\bar{x}$=6.66, $\tilde{x}$=7, $s$=2.15), and the category with the lowest average value was Nuts ($\bar{x}$=3.95,$\tilde{x}$=4, $s$=2.09). Those who identify as male value Dairy Products highest ($\bar{x}$=5.38, $\tilde{x}$=7, $s$=2.71), and Nuts lowest ($\bar{x}$=2.1, $\tilde{x}$=2, $s$=0.99).

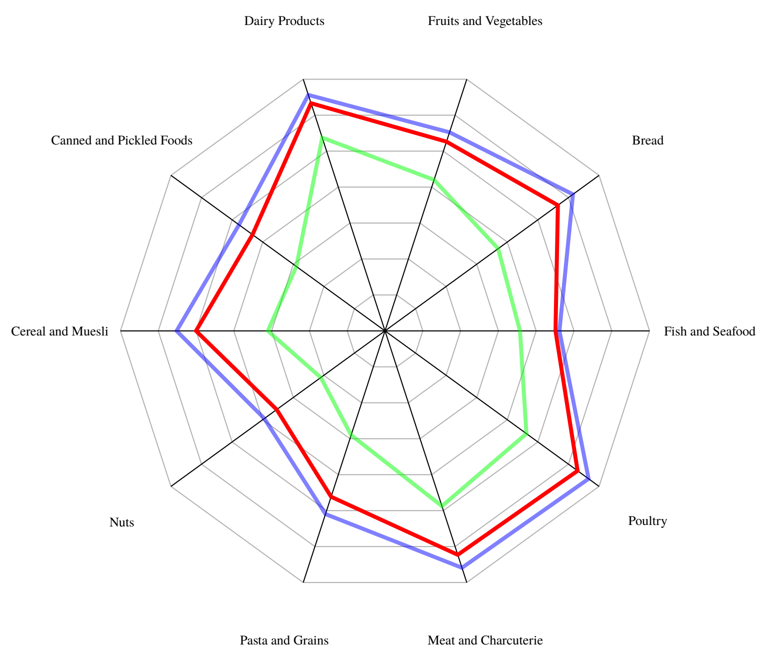


Fig. 2. Average importance of Swedish origin: red=total, blue=female, green=male

Out of the 53 respondents, four answered that they were willing to pay more for products from Sweden across all product categories. 19 responded positively ("Yes" or "Sometimes") on all product categories. There was a positive and quite large correlation across all product categories between the importance of products originating from Sweden and the willingness to pay more for a product originating from Sweden, should they cost more. The category with the highest correlation was Fish and seafood ($\rho$=0.7), followed by Pasta and grains ($\rho$=0.696). Notably, Poultry had the lowest, though still positive, correlation ($\rho$=0.393). No considerable correlation was found between the household income and willingness to pay for the different product categories (between $\rho$=-0.246 and $\rho$=0.127), nor between the number of children in the household and the willingness to pay more for groceries produced in Sweden across the investigated categories (between $\rho$=-0.172 and $\rho$=0.258).

17 out of the 53 respondents gave a rating of 7 (the highest possible rating on the scale) on all reasons, i.e., values, for why they choose Swedish products; Strengthening Sweden's self-sufficiency, Supporting the Swedish economy, Supporting work opportunities, Food produced in Sweden is good from a sustainability point of view, Food produced in Sweden is good from an animal welfare point of view, and Food produced in Sweden is safe for me. Among these 17 respondents, the mean age span was 30-39, however the mode was 18-29 years old. A small negative correlation was found between all values regarding choosing COOL products and age (between $\rho$=-0.097 and $\rho$=-0.329). Additionally, small negative correlations was also found between all values and how the respondents lived (between $\rho$=-0.028 and $\rho$=-0.322).

The survey showed that, among the investigated aspects of why COOL was important to consumers, sustainability was, on average, the most important value for Swedish consumers to choose products originating from Sweden ($\bar{x}$=6.06, $\tilde{x}$=7, $s$=1.59), followed by food safety ($\bar{x}$=5.94, $\tilde{x}$=7, $s$=1.66) and animal welfare ($\bar{x}$=5.92, $\tilde{x}$=7, $s$=1.81), which were also rated highly. When comparing between the respondents' gender identifications, those who identified as female rated animal welfare as the most important value for choosing products from Sweden ($\bar{x}$=6.52, $\tilde{x}$=7, $s$=0.94), while those who identified as male rated Sweden's self-sufficiency as the most important ($\bar{x}$=4.5, $\tilde{x}$=6, $s$=2.17). Using Linear Regression calculations, it becomes clear that the importance of the aspects all had a positive impact on the general interest in COOL. A high regard for animal welfare had the highest impact on the respondents' general interest in COOL (t=6.034, $p$<0.001), while Sweden's self-sufficiency had the lowest impact (t=2.314, $p$=0.025).

All listed values for choosing Swedish products had positive correlations with the respondents' general interest in COOL (between $\rho$=0.389 and $\rho$=0.561), and mainly positive correlation with the individuals' thoroughness in looking for an indication of country of origin (between $\rho$=-0.037 and $\rho$=0.217). Notably, when comparing the values for choosing Swedish products with the aspects that the individuals pay attention to when they shop online, sustainability had the highest positive correlations with Ecological, Product sustainability, Use of materials and Taste (between $\rho$=0.297 and $\rho$=0.472), supporting the Swedish economy had the highest for Country of Origin ($\rho$=0.486), and food safety had the highest correlation with Shelf Life, Brand, Quality, Freshness and Familiarity (between $\rho$=0.298 and $\rho$=0.442).

### 4.5 The "Från Sverige" label

On average, the respondents of the study stated that they were very familiar with the "Från Sverige" label ($\bar{x}$=6.02, $\tilde{x}$=7, $s$=1.49). Notably, when comparing between those who identified as female and those who identified as male, females stated a higher familiarity (female $\bar{x}$=6.40, $\tilde{x}$=7, $s$=1.01; male $\bar{x}$=4.40, $\tilde{x}$=5, $s$=2.12).

The general interest in COOL, calculated using Linear Regression, had a positive impact on the respondents' familiarity with the "Från Sverige" label (t=4.077, $p$<0.001). The familiarity with the "Från Sverige" label, calculated the same way, also had an impact on the trust in the label (t=5.751, $p$<0.001). Some correlation was found between the familiarity with the "Från Sverige" label and the respondents' perception of the availability of the label in the online stores ($\rho$=0.326). However, there was no correlation between the familiarity and the respondents' perception of the availability of filtering options for products with the label in the online store ($\rho$=0.086).

The "Från Sverige" label was rated highly amongst the respondents in terms of trust ($\bar{x}$=6.19, $\tilde{x}$=7, $s$=1.30). When comparing between the respondents, those who identified as female had a higher trust for the label than those who identified as male (female $\bar{x}$=6.55, $\tilde{x}$=7, $s$=0.89; male $\bar{x}$=4.9, $\tilde{x}$=4, $s$=1.79). The respondents were requested to state what the "Från Sverige" label meant to them, and among the 49 free text answers given, eight themes were identified; Fully produced in Sweden (identified in 30 out of the 49 answers), High quality (10), Safe (six), Partially produced in Sweden (four), Good animal welfare (three), Positive for the Swedish economy (two), Few pesticides (two), and Sustainability (one).

The respondents in the study rated the choice of products with the "Från Sverige" label above products with other labels quite highly ($\bar{x}$=5.44, $\tilde{x}$=7, $s$=1.84). By using Linear Regression calculations, it can be noted that the respondents' trust had a significant impact on their choice of products with the "Från Sverige" label above other labels (t=7.629, $p$<0.001). Similarly, a strong correlation was found between the respondents' trust in the "Från Sverige" label and their choice of products with the label above other labels ($\rho$=0.634), as well as their trust in and familiarity with the label ($\rho$=0.672).

The respondents were asked if they had ever ordered a product with the "Från Sverige" label and received a replacement product without the label. 26 out of 53 responded that they had not experienced such an occurrence. 12 responded that they had, without having been informed about it prior to receiving the replacement product. An additional five respondents stated that they had experienced it and had been informed, but had not been given the option to select a different replacement product. Only two stated that they had experienced it and gotten the option to select their replacement product. The remaining eight respondents were unsure. Among the respondents who answered that they had experienced this in some form, the average interest in COOL was quite high ($\bar{x}$=5.89, $\tilde{x}$=7, $s$=1.63), however, among those who answered that they had not experienced it or were unsure, the average interest in COOL was only slightly lower ($\bar{x}$=5.34, $\tilde{x}$=7, $s$=1.82).

## 5 DISCUSSION

Based on previous knowledge on the topic, outlined in the literature review, and the results generated by the study, the following section discusses the most interesting aspects regarding Swedish consumers' evaluation of COOL online, which either contradict or confirm previous research.

### 5.1 Respondent demographics

Though all age spans were represented within the survey sample, there was a clear overrepresentation of the younger age spans. The Swedish population is, over all, fairly distributed over the age spans [66], however a reason for the overrepresentation of younger ages within the survey could be because younger people tend to shop groceries online to a higher extent than older people [12]. There was also an overrepresentation of respondents who identified as female in the survey. Looking at the Swedish population in total, the distribution amongst females and males is quite equal [65], though other gender identifications are unreported. Several studies highlight that women value and choose COOL to a higher extent than men (e.g., [18, 32, 36, 41, 42, 46, 69]), which could also be a reason that those who identify as female took the time to respond to the survey, knowing it was about COOL.

Vermeir and Verbeke [76] argue that, in their selection of respondents, those with a higher educational level were intentionally selected, as they supposedly had a greater understanding of the concepts within the study. Though there was an overrepresentation of individuals with post-secondary educational level in the current study, this was not deliberate. It has been argued that those who value locally produced food tend to have a higher educational level [41], which could be an explanation for the high representation of higher educational levels. Still, in the current study, participants with lower educational levels reported a higher general interest in COOL. Considering the low correlation, this could also be a statistical anomaly. Additionally, according to Vermeir and Verbeke [76] it is possible that the respondents did not understand the concept. However, for the current study, as well as in relation to other research (e.g., [18]), it was still deemed relevant to consider all educational levels.

The average monthly household income amongst the respondents were between 40 000 and 59 000 SEK, well above the Swedish average of about 28 000 SEK [57]. This could affect the results, specifically regarding willingness to pay, in comparison to the general population. The remaining demographic aspects, e.g., household size and region of residence, had fair representations and distributions, offering a good representation of the Swedish population, given the sample size.

When considering the differences between those who identified as female and male, it should also be taken into consideration that the respondents may, for some reason, value the scales differently (i.e., assign different grades to the numbers on the scales), and that the results could be misguiding, in that sense, when there are differences.

### 5.2 Interest in COOL

In general, Swedish consumers have a high regard for the country of origin of products [32, 42], and the overall general interest in COOL was fairly high among the respondents. However, it should also be noted that the respondents were in large part recruited through Svenskmärkning AB's channels, which could have an effect on the sample results, in contrast to the general population. Additionally, the results regarding interest in, values surrounding and willingness to pay for COOL, could be affected by the current situation in the world, as war and uncertainty has brought up threats to food production into the media and political debate.

Swedish legislation state that country of origin information must be available for meat, fish, honey, fruits and vegetables [30], and, in general, country of origin is deemed most important for meat products, bread and vegetables [26, 34]. The current study showed that meat, poultry, bread, and fruits and vegetables were rated highly in terms of importance of being from Sweden, however dairy products had the highest rating of all. It is worth noting that within earlier studies, dairy products are not often investigated in relation to COOL (e.g., [10, 32, 42, 45, 51]). Sweden has one of the highest rates of dairy product consumption per capita in the world [33, 62], which could explain the category rating highly in importance of being from within Sweden amongst the Swedish population.

It has been discussed in research that women value country of origin more than men [18, 32, 36, 42]. The results of the current study show that those who identified as female reported a higher general interest in COOL, as well as a higher regard for country of origin when shopping online, than those who identified as male. It should be noted, however, that there were a considerable number more participants in the study who identified as female. There has been very limited discussion regarding other gender identifications and the value of country of origin (e.g., [46]) and, unfortunately, there was insufficient data within the current study to compare beyond female and male gender identifications.

Generally, those who regard country of origin as important tend to be older [41, 67]. However, the slight negative correlation between the respondents' age and general interest in COOL in the current study indicate that the younger participants reported a higher general interest in COOL than the older individuals. Shafie and Rennie [67] also relate age with income, and argue that older consumers have a higher income and therefore value COOL products higher. No such correlation was found in the result of the current study, and the high representation of younger consumers within the current study could distort the results regardless.

Within the previous research considered, it appears to be quite uncommon to investigate how the respondents live in relation to their interest in COOL. Bryła [18], however, highlights in their results that consumers who attach the highest importance to country of origin live in rural areas. The current study, similarly, shows that respondents who lived in rural areas and smaller cities tended to have a higher general interest in COOL. Additionally, slight the negative correlations between how the respondents lived and the values suggest that those who lived in rural areas and smaller cities regarded all values as more important than those living in bigger cities.

### 5.3 Online shopping and COOL

Similarly to Anckar et al. [11], the results showed that the main reasons for shopping groceries online are pricing, product assortment, convenience and service. The main reason, however, was logistics (e.g., not having access to a car). The results highlight that online shopping makes larger purchases possible for individuals who live further away from large grocery stores, that online stores can offer a larger range of products and that shopping online saves time, which in line with Campo and Breugelmans discussion [21].

The perception of the availability of country of origin information online was evenly distributed between those who believed there was information available, those who did not, and those who were unsure. The positive correlation between the respondents' perception of the availability of country of origin information, as well as the "Från Sverige" label, and general interest in COOL, indicate that those who had a higher interest in COOL also noticed the information and label online to a higher extent than those who were less interested. Consumers who are unfamiliar with products regard the display of labels positively in their product evaluations [15], however, the positive correlation between general interest in COOL and the perception of the availability of information and the "Från Sverige" label, indicate that consumers may not notice labels when only browsing among products, unless they are particularly interested in COOL.

The filtering possibilities for both country of origin and the "Från Sverige" label had low ratings among the respondents, though many respondents were also unsure. As research shows that the main way that consumers navigate an online store is through the available menus and categories [14, 17, 54], it could similarly be that the respondents of this survey did not use filtering options when browsing for products. There are possibilities for online stores to facilitate product comparisons to a higher degree than what is possible in physical stores, enabling consumers to choose products based on their personal values [49, 59, 77]. These functions can have a big impact on the consumers' final choice of products [17]. Thus, the results suggest that products' meta-information, which makes filtering and product comparisons possible, even across product categories, are underutilised by the online stores. The negative correlation between general interest in COOL and the respondents' attitude towards filtering possibilities of the "Från Sverige" label indicate that the more interest the respondent had in COOL, the more critical they appeared to be towards the filtering options. However, filtering options did come up among the reasons the respondents stated when they were asked how the store offers information about different labels. This shows that there are opportunities for the online stores to further develop their use of meta-data, enabling filtering possibilities or additional menu items, particularly with regards to country of origin information and labels. This could be done on an individual level, with regards to the consumers' interest in COOL products [58], and could also offer further opportunities for product recommendations [59, 77], which Swedes are positive towards [54]. As the results show that many Swedish consumers shop with their preferred store because they have a membership there, there are possibilities for the stores to create mutual benefits with their consumers by developing these functionalities.

Research shows that consumers online rely mainly on visual information and secondly on textual information [14, 17, 58]. As this study shows, visual cues, such as labels, flags and icons, were more common combined, despite the fact that textual information was ranked highest among the respondents who believed that information about labels was provided. The small correlation between the general interest in COOL and how thoroughly the respondent looked for an indication of origin that they relied on, suggests that the higher interest the individual had in COOL, the more carefully they look for trustworthy information, i.e., not imagery, about the origin of products. This highlights the importance of making labels visually distinguishable to the user, since a misunderstanding, such as interpreting landscape imagery or colour usage as country of origin information, can confuse and frustrate the consumer if it leads to a misinformed purchase.

### 5.4 Cues and values

When shopping online, the respondents tended to consider package design as the least important product aspect, while freshness was the most important. This is in line with previous research stating that online images of product packaging can be unreliable, and are therefore regarded as less important to consumers when shopping online [16, 17], and research stating that freshness is what consumers are most unsure of when shopping online [31, 61]. Additionally, those who valued country of origin when shopping online also valued freshness, quality, product sustainability, ecological foods and familiarity highly. These aspects, particularly product sustainability and familiarity, correspond to the values Fernqvist and Ekelund [32] discuss in regards to consumers' choice regarding COOL products.

While it is suggested that country of origin is not prioritised by consumers when other extrinsic cues, such as price, brand, appearance or different dates, are available [10, 18, 26, 75], the results of the current study suggest otherwise. The respondents of the survey valued only two extrinsic cues, freshness and quality, above country of origin, while all other, including price, brand, package design and shelf-life, were rated lower. The negative correlation between general interest in COOL and price, shows that those who had a higher general interest in COOL paid less attention to price than those who had a lower interest. Combined with the willingness to pay more for Swedish produce, this result contradicts previous research stating that consumers are not willing to pay more for COOL products [34]. Furthermore, Ahmed et al. [10] argue that country of origin may be disregarded completely in favour of preference due to familiarity. However, the results of the study show that the respondents valued familiarity, on average, as less important. Taste, an intrinsic cue, was valued, on average, higher than country of origin, which is in line with previous research [10].

The willingness to pay more for Swedish produce was noteworthy amongst the respondents. In contrast to Fraser and Balcombe [34], the results suggest that Swedish consumers value COOL products and are willing to pay more for them, should they cost more. Additionally, though Hoffman suggests that an unwillingness to pay more for Swedish produce means that the Swedish model has failed at giving the producers a competitive advantage [42], results highlighting the willingness to pay more, paired with the importance of animal welfare and food safety when choosing Swedish products, propose that the Swedish model has, in fact, not failed. However, as noted, there is a discrepancy between consumers' intention and actual behaviour [25, 32, 76]. Therefore, despite the result showing that Swedish consumers value Swedish produce and are willing to pay for it, whether or not they actually do is not investigated.

COOL and eco-labels are often linked together in research, and the two cues have an effect on each other when they are both available [74, 75]. Hempel and Hamm mean that COOL is at times preferred over eco-labels [41], and, as the current study reveals, country of origin is more important to Swedish consumers than the ecological aspect, when shopping online. Thøgersen et al. [75] argue that among those who value ecological food, ethnocentrism – and thus the value of country of origin – is particularly evident. The results of the current study show that, while there was a high correlation between ecological and country of origin, those who valued country of origin when shopping online valued other product qualities, such as freshness, quality, and product sustainability, higher than ecological. Therefore, though those who value ecological may value country of origin specifically highly, the same can not be stated for the other way around.

Ethnocentrism is brought up by several studies on COOL (e.g., [18, 45, 55]). The results of the current study show that although all values were rated highly in relation to food purchases, ethnocentric values (i.e., Supporting the Swedish economy, Strengthening Sweden's self-sufficiency and Supporting work opportunities) were the least important. The three other options, highlighting values of sustainability, animal welfare and food safety, were all rated higher. In comparing the respondents gender, it can be noted that Swedish men displayed higher levels of ethnocentrism by rating Sweden's self-sufficiency as the most important reason for choosing Swedish produce, contradicting previous findings by Bryła among Polish consumers [19]. However, when considering the general interest in COOL, the positive correlation across all values suggest that the higher the individuals' general interest in COOL, the higher they also rated all values. Interestingly, sustainability had the lowest correlation, meaning that there was the least difference in value of sustainability between the individuals with a higher and lower general interest in COOL. Though animal welfare and food safety had the highest correlation, supporting the Swedish economy and Sweden's self-sufficiency also had noteworthy correlations. This suggests that among Swedish consumers who value COOL highly, ethnocentrism is, in fact, a relevant factor.

Moreover, research states that consumers with higher levels of ethnocentrism pay higher attention to country of origin information [24, 32, 50]. The current study suggests that, among Swedish consumers, country of origin is in fact what individuals with higher levels of ethnocentrism pay the most attention to. The results also suggest that those who valued ethnocentrism higher look more thoroughly for an indication of origin that they relied on, meaning that for highly ethnocentric consumers the reliability of the country of origin information was more important.

The results of the study indicate that the main reason, i.e., the most important value, that Swedish consumers chose Swedish produce, was sustainability. This is in line with numerous studies suggesting that food produced within one's own country often has a lower environmental impact (e.g., [18, 32]). The second most important value was food safety. This suggests that the Swedish model [42], combined with the high trust in the "Från Sverige" label, leads to a higher trust in a product's safety for the environment as well as the consumer. This is in line with research suggesting that reasons for valuing fish from one area over another could be due to knowledge about environmental issues regarding the area [69].

Interestingly, the results show that all values had a positive effect on the general interest in COOL. Animal welfare had the highest impact, meaning that a higher appreciation of animal welfare increased the overall interest in COOL the most. Additionally, animal welfare was the most important value when choosing Swedish products among those who identified as female. Since the aim of COOL is to provide consumers with more information by clarifying where a product is produced [49], and good animal welfare is a key focus of Swedish food production [5] and the Swedish model [42], a high regard for animal welfare makes it logical for Swedish consumers to choose Swedish produce.

### 5.5 The "Från Sverige" label

The method for collecting respondents, largely done through Svenskmärkning AB's channels, could have an effect on the results, specifically regarding the "Från Sverige" label. However, as the results also, to some extent, can be grounded in previous similar research, they still offer interesting insights into the Swedish consumers who have high interest in country of origin information and labels.

The results of the current study suggest a very high familiarity with the "Från Sverige" label among Swedish consumers. Additionally, the themes identified among the responses to what the label meant to the respondents show that the perception of the label is in line with the definition. The most common theme identified was that the products were fully produced in Sweden. The "Från Sverige" label requires that products should be wholly grown or born and raised, refined, packaged and controlled in Sweden [7], which provides the consumer with additional information about the *whole* process method for the product, on top of Sweden's regulations [30] and other labels on the product. Additionally, the results showed that quality, safety, good animal welfare and few pesticides were common themes amongst the respondents' answers. As Sweden has strict regulations regarding these aspects [30], and as the "Från Sverige" label also represents these qualities [5, 7], this is in line with both the label and the law.

The positive correlation between the familiarity with the label and the perception of seeing it in the online stores indicates that those who were more familiar with the "Från Sverige" label tended to see it more than those who were more unfamiliar. This reflects the similar results regarding perception of availability of information and general interest in COOL: those who were familiar with the label also had a higher general interest in COOL and, as such, a higher tendency to look for, and notice, country of origin information and labels.

Sweden has a high level of trust in institutions and the government, and a trust in higher institutions generally also increases the trust for food-labels [73, 74], such as the "Från Sverige" label. The results of the study, where the trust in the label was high amongst the respondents, suggest the same. Unsurprisingly, a higher general interest in COOL had a positive impact on the familiarity with the "Från Sverige" label and, similarly, a higher awareness of the label also led to a higher level of trust in it. Those who identified as female amongst the respondents reported, on average, a higher trust in the label than those who identified as male. This can be related to the higher general interest in COOL by women than men in other studies [32, 36, 42], as well as within the current study.

Though research shows that producers are positive towards COOL [18, 35], when they are to prioritise one label to put on their products, it tends to be eco-labels, as they are believed to be more well-known [35]. The results of the study, on the other hand, indicate that Swedish consumers choose the “Från Sverige” label above other labels. Although the sample could be skewed, much research also suggests that COOL is valued above eco-labels among the Swedish population (e.g., [41, 75]). This suggests that Swedish producers should actually re-examine how they choose to label their produce.

## 6 CONCLUSION

The aim of this study was to investigate how Swedish consumers perceive and value COOL products and information in online grocery shopping environments. This was done in order to fill the research gap and build on the body of knowledge on the topic, but also to inform producers, labels and the online stores, about how COOL online is perceived by Swedish consumers and influence online grocery shopping from the perspective of consumers. The results suggest that the general interest in COOL is high among Swedes, and that it is higher among those who identify as female than those who identify as male, those who live in smaller cities or rural areas, and those with a lower educational level.

Swedes with a higher individual interest in COOL noticed country of origin information and labels to a higher extent when browsing grocery products online. However, displaying COOL is still likely to have a positive impact when consumers are to evaluate products, regardless of level of interest, as other inaccurate and vague indications could misinform them. Although the main method for browsing products online is to use the available menus, the study shows that there are extensive opportunities for online stores to use consumer data to design general menu items personalised filtering options, which actually appears to be insufficient according to consumers who value country of origin labelling and information.

The study further suggests that Swedes tend to value country of origin information above ecological information, as well as many other extrinsic cues, and the “Från Sverige” label above other labels. Furthermore, Swedes who value COOL actually pay less attention to price and, regardless of income level, appear to be willing to pay more for COOL products, should they cost more. The participants’ values had a positive impact on their general interest in COOL, suggesting that Swedes choose Swedish produce because they trust it to live up to their standards of animal welfare, sustainability, and food safety. Participants with a higher general interest in COOL displayed higher levels of ethnocentrism, implying that ethnocentrism is, indeed, a factor among Swedes who value COOL. Those with a higher general interest in COOL also reported a higher familiarity with, understanding of and trust in the “Från Sverige” label.

However, the current study had limitations, affecting the results. Firstly, the quantitative results rely on self-report by the respondents, rather than observation. There are likely differences between individuals’ intention and actual behaviour, which the method and current study does not account for. Secondly, the sample was in large part collected from Svenskmärkning AB’s channels, which may skew the sample results in comparison to the general population. Finally, the sample size was not large enough to ensure statistical reliability, and the results cannot be applied on the general Swedish population without consideration of this.

Future research on similar issues, with bigger samples that is more representative of the Swedish population, would provide further understanding and confidence in the preferences and intentions of Swedish consumers. Studies into the willingness to pay in relation to the supply of COOL products within the categories would offer deeper knowledge and understanding of how availability of COOL products affect the willingness to pay for them. Additionally, a qualitative study of how consumers navigate and act in the online environment could bridge the intention-action gap.

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## A SURVEY QUESTIONS

- Hur ofta handlar du matvaror online? [single choice]
  - Oftare än en gång per vecka
  - Ungefär en gång per vecka
  - Några gånger per månad
  - En gång per månad
  - Mer sällan än en gång per månad
  - Har endast testat någon enstaka gång
  - Har aldrig handlat mat online men har kollat runt på hemsidorna
  - Har aldrig handlat online eller kollat på butikernas hemsidor

### A.1 Del 1 av 4: Online-shopping och butiker

1 Varför väljer du att handla matvaror online?
   [text answer]

2a Med vilken/vilka av dessa butiker har du testat handla online minst en gång? [multiple choice]
   Mathem
   Mat.se
   Ica
   Coop
   Willys
   Hemköp
   City Gross
   Annan

2b Om annan, vänligen ange (flera kan separeras med kommatecken):
   [text answer]

3a Vilken butik handlar du oftast hos online? [single choice]
   Mathem
   Mat.se
   Ica
   Coop
   Willys
   Hemköp
   City Gross
   Annan

3b Om annan, vänligen ange:
   [text answer]

**OBS: Följande frågor på denna sida appliceras på den butik du brukar handla i**

*Du har nu valt en butik du brukar handla i. När du svarar på resterande frågor i denna del, svara den utifrån en butik du just valde.*

4 Varför väljer du att handla med den butik du valt?

[text answer]

5 När du handlar mat, hur intresserad är du generellt av ursprungsmärkningar? [Likert scale]
Med "ursprungsmärkningar" menas en tydlig markering som förtydligar ursprungsland (alltså INTE produktinformationen på förpackningen)

Helt ointresserad 1 2 3 4 5 6 7 Väldigt intresserad

Vet ej

6a Enligt din uppfattning, erbjuder butiken information om vad olika märkningar, till exempel ekologiskt och ursprung, innebär? [single choice]
*Med märkning menas en tydlig markering som förtydligar produceringsmetod, ursprung eller annat (alltså inte produktinformationen på förpackningen)*

Ja

Nej

Vet ej / osäker

6b Om du svarade ja på föregående fråga, förklara gärna vad och hur:

[text answer]

7 När du shoppar online hos butiken du brukar, hur lätt anser du att det är att... [Likert scale]

...generellt se ursprung på produkter?

Väldigt svårt 1 2 3 4 5 6 7 Väldigt lätt

Vet ej

...filtrera produkter efter ursprungsland?

Väldigt svårt 1 2 3 4 5 6 7 Väldigt lätt

Vet ej

...se att produkter är märkta med "Från Sverige"?

Väldigt svårt 1 2 3 4 5 6 7 Väldigt lätt

Vet ej

...filtrera efter produkter med märkningen "Från Sverige"?

Väldigt svårt 1 2 3 4 5 6 7 Väldigt lätt

Vet ej

8 Anser du att butiken erbjuder något speciellt som underlättade att välja produkter märkta med "Från Sverige" och i så fall vad?

[text answer]

9 Anser du att butiken erbjuder något speciellt som inspirerade att välja produkter märkta med "Från Sverige" och i så fall vad?

[text answer]

## A.2 Del 2 av 4: Produkter

10 När du handlar mat online, vad är viktigt för dig av följande... [Likert scale]

Ekologiskt

Inte alls viktigt 1 2 3 4 5 6 7 Väldigt viktigt

Vet ej

Ursprung

Inte alls viktigt 1 2 3 4 5 6 7 Väldigt viktigt

Vet ej

Produktens hållbarhet ur miljösynpunkt

Inte alls viktigt 1 2 3 4 5 6 7 Väldigt viktigt

Vet ej

Priset

Inte alls viktigt 1 2 3 4 5 6 7 Väldigt viktigt

Vet ej

Varumärke

Inte alls viktigt 1 2 3 4 5 6 7 Väldigt viktigt

Vet ej

Förpackningens utseende

Inte alls viktigt 1 2 3 4 5 6 7 Väldigt viktigt

Vet ej

Förpackningens materialanvändning

Inte alls viktigt 1 2 3 4 5 6 7 Väldigt viktigt

Vet ej

Smak

Inte alls viktigt 1 2 3 4 5 6 7 Väldigt viktigt

Vet ej

Kvalitet

Inte alls viktigt 1 2 3 4 5 6 7 Väldigt viktigt

Vet ej

Fräschhet

Inte alls viktigt 1 2 3 4 5 6 7 Väldigt viktigt

Vet ej

Det är sådant jag är välbekant med

Inte alls viktigt 1 2 3 4 5 6 7 Väldigt viktigt

Vet ej

11 Vilka produkter är viktiga för dig att de kommer från Sverige, när det är möjligt? [Likert scale]

Bröd

Inte alls viktigt 1 2 3 4 5 6 7 Väldigt viktigt

Äter ej

Frukt och grönsaker

Inte alls viktigt 1 2 3 4 5 6 7 Väldigt viktigt

Äter ej

Mejeriprodukter

Inte alls viktigt 1 2 3 4 5 6 7 Väldigt viktigt

Äter ej

Konserver och inlagd mat

Inte alls viktigt 1 2 3 4 5 6 7 Väldigt viktigt

Äter ej
Flingor och müsli
Inte alls viktigt 1 2 3 4 5 6 7 Väldigt viktigt
Äter ej
Nötter
Inte alls viktigt 1 2 3 4 5 6 7 Väldigt viktigt
Äter ej
Pasta och gryn
Inte alls viktigt 1 2 3 4 5 6 7 Väldigt viktigt
Äter ej
Kött och charkuterier
Inte alls viktigt 1 2 3 4 5 6 7 Väldigt viktigt
Äter ej
Fågel
Inte alls viktigt 1 2 3 4 5 6 7 Väldigt viktigt
Äter ej
Fisk och skaldjur
Inte alls viktigt 1 2 3 4 5 6 7 Väldigt viktigt
Äter ej

12 När du handlar online, hur vet du vilket ursprung en produkt har? [single choice]
*Med ursprung menas geografiskt område där varorna är helt framställda*
Jag känner till varumärket väl
Jag ser ett märke på förpackningen / produkten
Jag ser någon annan indikation (flagga, landskapsbilder, produktdesign)
Jag kollar efter märkning intill produkten
Jag läser noggrant på produktsidan
Jag kollar inte märkningar alls
Vet ej

13 Väljer du aktivt produkter som kommer från Sverige, även om de skulle kosta mer, från dessa kategorier... [single choice]
Bröd
Ja
Ibland
Nej
Äter ej
Frukt och grönsaker
Ja
Ibland
Nej
Äter ej
Mejeriprodukter

Ja
Ibland
Nej
Äter ej
Konserver och inlagd mat
Ja
Ibland
Nej
Äter ej
Flingor och müsli
Ja
Ibland
Nej
Äter ej
Nötter
Ja
Ibland
Nej
Äter ej
Pasta och gryn
Ja
Ibland
Nej
Äter ej
Kött och charkuterier
Ja
Ibland
Nej
Äter ej
Fågel
Ja
Ibland
Nej
Äter ej
Fisk och skaldjur
Ja
Ibland
Nej
Äter ej

14 Om du väljer produkter som kommer från Sverige, varför? Hur mycket stämmer påståendet in på dig? Jag anser... [Likert scale]

... det viktigt att Sverige är självförsörjande
Instämmer inte alls 1 2 3 4 5 6 7 Instämmer helt
Osäker / Vet ej
... det viktigt att stötta den svenska ekonomin
Instämmer inte alls 1 2 3 4 5 6 7 Instämmer helt
Osäker / Vet ej
... det viktigt att stötta arbetstillfällen det skapar
Instämmer inte alls 1 2 3 4 5 6 7 Instämmer helt
Osäker / Vet ej
... att svenskproducerad mat är bra ur miljö- och hållbarhetssynpunkt
Instämmer inte alls 1 2 3 4 5 6 7 Instämmer helt
Osäker / Vet ej
... att svenskproducerad mat är bra ur djurhållnings-synpunkt
Instämmer inte alls 1 2 3 4 5 6 7 Instämmer helt
Osäker / Vet ej
... att svenskproducerad mat är bra ur djurhållnings-synpunkt
Instämmer inte alls 1 2 3 4 5 6 7 Instämmer helt
Osäker / Vet ej
... att svenskproducerad mat är trygg och säker för mig
Instämmer inte alls 1 2 3 4 5 6 7 Instämmer helt
Osäker / Vet ej

### A.3 Del 3 av 4: Märkningen "Från Sverige"

*Frågorna på denna sida (15 till 19) gäller din kunskap och uppfattning märkningen "Från Sverige", inklusive "Kött Från Sverige" och "Mjölk Från Sverige" (se bilder nedan).*

15 Hur bekant är du med märkningen "Från Sverige"? [Likert scale]
Helt obekant 1 2 3 4 5 6 7 Välbekant
16 Om en produkt har märkningen "Från Sverige", vad betyder det för dig?
[text answer]
17 Hur stor tillit har du för märkningen "Från Sverige"? [Likert scale]
Väldigt liten 1 2 3 4 5 6 7 Väldigt stor
18 Väljer du aktivt produkter med märkningen "Från Sverige" över andra märkningar? [Likert scale]
Instämmer inte alls 1 2 3 4 5 6 7 Instämmer helt
Vet ej
19 Om du beställt en vara med "Från Sverige"-märkning, har det hänt att du har fått en ersättningsvara som inte har svenskt ursprung? [single choice]
Ja, jag blev informerad om detta och hade möjligheten att välja ersättningsvara
Ja, jag blev informerad om detta men hade inte möjligheten att välja ersättningsvara
Ja, men jag blev inte informerad om detta
Nej, inte som jag är medveten om

Osäker / Vet ej

### A.4 Del 4 av 4: Demografi

*Denna sektion handlar om vem du är.*

20 Hur gammal är du? [single choice]
18-29
30-39
40-49
50-59
60-69
70+
Föredrar att inte svara

21 Vilket kön identifierar du dig med? [single choice]
Kvinna
Man
Icke binär
Annat
Föredrar att inte svara

22 Vilken är din högsta utbildningsnivå? [single choice]
Ingen gymnasial utbildning
Gymnasial utbildning (högst 2 år)
Gymnasial utbildning (3 år)
Eftergymnasial utbildning (3 år eller mindre än 3 år)
Eftergymnasial utbildning, längre än 3 år
Föredrar att inte svara

23 Vilken är din nuvarande sysselsättning? [single choice]
Studerande
Arbetande
Arbetslös
Pensionär
Annat
Föredrar att inte svara

24 Ungefär hur stor är ditt hushålls totala inkomst före skatt en vanlig månad? (SEK) [single choice]
0 – 19 999
20 000 – 39 999
40 000 – 59 999
60 000 – 79 999
80 000 – 99 999
Över 100 000
Föredrar att inte svara

25 I vilken region bor du? [single choice]
Region Blekinge
Region Dalarna
Region Gotland
Region Gävleborg
Region Halland
Region Jämtland Härjedalen
Region Jönköpings län
Region Kalmar län
Region Kronoberg
Region Norrbotten
Region Skåne
Region Stockholm
Region Sörmland
Region Uppsala
Region Värmland
Region Västerbotten
Region Västernorrland
Region Västmanland
Region Örebro län
Region Östergötland
Västra Götalandsregionen
Osäker / föredrar att inte svara

26 Hur bor du? [single choice]
Stad över 200 000 invånare
Stad med 100 000 - 200 000 invånare
Stad med 50 000 - 100 000 invånare
Stad med 10 000 - 50 000 invånare
Stad under 10 000 invånare
På landsbygd
Osäker / föredrar att inte svara

27 Är du den som huvudsakligen ansvarar för matinköpen i ditt hushåll? [single choice]
Ja
Nej
Delat ansvar
Osäker

28 Hur många barn (under 18 år) finns i ditt hushåll? [single choice]
0 1 2 3 4 5 eller fler
Föredrar att inte svara

29 Hur många vuxna (över 18 år), inklusive dig själv, finns i ditt hushåll? [single choice]
1 2 3 4 5 eller fler

Föredrar att inte svara

30 Vilken mathållning har du och ditt hushåll främst? [single choice]

Allätare

Flexitarian

Vegetarian

Vegan

Annat

Föredrar att inte svara