

## Extended Abstract

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<b>Paper/Poster Title</b>	<b>Food traceability in the eyes of German consumers</b>
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<b>Abstract</b>	<i>200 words max</i>
<p>The increasing urbanization of society combined with the globalization of food production has caused consumers to lose touch with agriculture and its producers. At the same time, consumers are showing an ever-increasing interest in their food. Food traceability systems could be a solution to meet this growing demand for information and improve consumers' knowledge of food production. However, food traceability systems are still a rather unusual information option for consumers in Europe. Using a survey of German consumers (n=680), we therefore investigated how food traceability systems are generally perceived among them and what factors influence their usage intention. From our results, we find that especially study participants who reported having no contact with farmers perceive a food traceability system as beneficial, as well as study participants who frequently buy food locally. Accordingly, food producers for whom the local origin of their food is central should consider implementing a traceability system for their products, as should food producers targeting a mainly urban customer segment that has little to no personal contact with food production. In this way, they could gain a competitive advantage by providing insights into food production that their customers often lack but consider important for their purchasing decisions.</p>	
<b>Keywords</b>	food traceability, transparent supply chains, QR code, digital food labelling
<b>JEL Code</b>	M31, O33, Q18, Q13
<b>Introduction</b>	<i>100 – 250 words</i>
<p>The increasing urbanization of society combined with the globalization of food production has led to consumers losing touch with agriculture. Due to this, but also because of serious food scandals in recent years, the food system has a serious image and credibility problem (Creydt &amp; Fischer, 2019; Pfeiffer et al., 2021; Zhang et al., 2020). This contrasts with the fact that consumers become increasingly interested in knowing where and how their food is produced (Kraft et al., 2018). The consumers' increased information demand is also addressed in the European Commission's farm-to-fork strategy. Accordingly, over the next few years, new (digital) possibilities will be explored to improve people's access to food information (European Union, 2020). So</p>	

far, however, there often exists information asymmetry between consumers and producers regarding food product features (Ortega et al., 2011; Tessitore et al., 2020; Zecca & Rastorgueva, 2016). Food traceability systems can help reducing information asymmetry by providing transparency on the supply chain and origin of the food products (Anastasiadis et al., 2021; Yacoub & Castillo, 2021). Apart from the meat industry, though, studies on food traceability systems that investigate the acceptance and usage intention from a consumer perspective are still scarce, especially in the European context (Chrysochou et al., 2009; Kim & Woo, 2016; Yuan et al., 2020; Zhang et al., 2020). Consequently, this study aims to contribute closing this research gap by answering the following research questions: How are food traceability systems perceived by consumers in Germany? What factors influence the usage intention?

### **Methodology**

*100 – 250 words*

Our survey was set up in German language with the survey software Unipark (QuestBack GmbH, 2019). To reduce possible effects of social desirability, participants were assured that their data would be collected anonymously and used for research purposes only. The questionnaire was part of a larger study on consumer perception and evaluation of food traceability. Since the questionnaire was positioned at the end of the study, it was ensured from the preceding questions and tasks that participants had a common understanding of the term traceability system.

For our analysis we had a sample of 680 participants. Overall, 42.44% of respondents were female. With 42.14% the largest group of the respondents were younger than 25 years, 32.89% of the sample were between 25 and 34 years of age. In addition, 35.30% of the participants grew up in a large city with more than 100.000 inhabitants. Being asked if they knew someone who is a farmer, or is employed on a farm, 64.12% (n=436) said yes, while among these 7.94% (n=54) also stated, that they grew up on a farm. Having already experience with using a QR code to get information about product origin was affirmed by 46.47%.

### **Results**

*100 – 250 words*

Although only 46.47% of the survey participants had experience scanning a QR code or barcode to inform themselves about product origin, the mean value ( $M = 3.884$ ,

$SD = 1.065$ ) for the general attitude towards barcodes and QR codes was quite positive. However, when differentiating between participants having had already experience using QR codes/barcodes and those who have not, there was a significant difference in the general evaluation of QR codes and barcodes (Mann-Whitney result for means  $z = 7.044$ ;  $p < .01$ ), and with respect to displaying them on food products (Mann-Whitney result for means  $z = 7.120$ ;  $p < .01$ ).

An OLS regression shows that the coefficient *dummy\_qr\_experience* has a significant positive influence on our dependent variable *trace\_increase\_share\_fut* ( $\beta=0.124$ ,  $p<0.01$ ), thus, confirming that individuals who have experience with using a QR code/barcode have also a higher intention to increase the percentage of food with a food traceability system in the future. Also, the variable *local\_food\_frequ* has a significant positive influence ( $\beta=0.128$ ,  $p<0.01$ ), which measures participants' shopping frequency of local food products. Knowing a farmer, or someone working on a farm, has a significant negative influence ( $\beta=-0.119$ ,  $p<0.01$ ) on *trace\_increase\_share\_fut*. By contrast, for individuals with an agricultural family background the coefficient was significantly positive ( $\beta=0.078$ ,  $p<0.05$ ). We also note that *trace\_f2* ( $\beta=0.209$ ,  $p<0.01$ ) is the most important influencing factor for *trace\_increase\_share\_fut*, that measures the degree to which a traceability system is considered to help mitigate information asymmetry in the supply chain. Finally, *trace\_f1*, which captures the perceived information reliability of the traceability system has as well a significant positive influence on *trace\_increase\_share\_fut*, although to a minor extent ( $\beta=0.106$ ,  $p<0.01$ ).

**Discussion and Conclusion**

**100 – 250 words**

Our study aim was to answer the research question of how food traceability systems are perceived by consumers in Germany and what factors influence their usage intention. Therefore, we conducted a survey among consumers in Germany.

In sum, we learn that firstly, the influence on one' s future purchase intention of traceable food is greater for self-made experiences with scanning a QR code than for just having a positive attitude towards such traceability systems. Accordingly, it is crucial for the success of the digital offensive of the European farm-to-fork strategy that the corresponding campaign motivates consumers to test these traceability systems and gain experience. Second, because consumers who frequently buy their food locally show a higher intention to increase the amount of traceable food in future



purchases, it is worthwhile for food producers who offer and market their products as "from local origin" to consider implementing a traceability system. Thirdly, especially consumers without a personal connection to agriculture can imagine using a traceability system for their future food purchases. A food producer who focuses on an urban customer group that has little personal contact with agriculture could thus use a traceability system as an information tool on the one hand, but also as a marketing tool on the other (Wu et al., 2021; Yuan et al., 2020).

Ultimately, such a traceability system could evolve into a new, dynamic information and dialogue platform that facilitates information exchange between consumers and producers (Tanner et al., 2019; Yacoub & Castillo, 2021).

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