

## Extended Abstract

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<b>Paper/Poster Title</b>	<b>Towards sustainable e-grocery delivery: investigating consumer's preferences in an Italian region</b>
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<b>Abstract</b>	<i>200 words max</i>
<p>Covid-19 pandemic, and its related restrictions, represented an opportunity for e-grocery growth in Italy, leading to a rethinking of the current purchasing and consumption patterns. On particular concern is the last-mile delivery, when food is delivered to the final consumer, representing the most impactful stage of the entire food supply chain. Where many studies focused on economic and environmental externalities produced by the delivery, a much debated and under-analysed question is the working conditions of operators engaged in the food delivery sector. More precisely, this contribution aims at analysing consumers' perceptions towards the economic, environmental, and social sustainability of the different food delivery options. We used a computer-assisted telephone interviewing (CATI) on a sample of 385 respondents in the Province of Trento (North-East Italy) to explore the e-grocery purchasing behaviour and the preferred delivery options. The results reveal that the socio-economic variables and geographical elements are explanatory of the consumers' sensitivity towards the sustainability of delivery options, as well as the likelihood of making online food purchases. This work includes suggestions for local policy makers and insights for future work.</p>	
<b>Keywords</b>	e-grocery, sustainability, food delivery, working condition, Italy, last-mile logistics, CATI
<b>JEL Code</b>	Marketing and Advertising: Other M39 Agriculture: Aggregate Supply and Demand Analysis Q11 Agriculture: Food Policy Q18 Environmental Economics: Sustainability Q56
<b>Introduction</b>	<i>100 – 250 words</i>
<p>In the last few years, e-commerce and e-grocery have experienced rapid growth worldwide. In Italy, preventive measures due to the coronavirus pandemic led to a further increase in digitalisation, changing food purchasing behaviour (Alaimo et al., 2020). In fact, e-grocery experienced a growth of +55% in 2020 (Osservatori.net, 2020). This rapid growth has caught the attention of policy makers and civil society, who are now considering how to rethink current purchasing and consumption patterns.</p>	

Last-mile food delivery, which is the process of delivering food purchased online to the final consumer, is the most costly, polluting and socially impactful stage of the food supply chain (Saad & Bahadori, 2018). While many studies have focused exclusively on the economic and environmental externalities produced by the delivery of B2C e-commerce (Siragusa & Tumino, 2021), this paper enlarges the analysis to include also the impact on the working conditions in the food delivery sector. This study specifically aims to analyse consumers' perception towards the economic, environmental, and social sustainability of the different food delivery options in the Autonomous Province of Trento (North Italy).

This region is characterised by a special autonomous statute which confers to the local government ample powers for intervention for implementing innovative local policies fostering, among others, innovative solutions for e-commerce and e-grocery supply chains. By choosing such a regional area, we expect to target, as respondents, consumers with a relatively high awareness of the economic, environmental, and social sustainability of various distribution options. In addition, we expect the findings of this study to provide concrete local policy guidelines for implementing effective and sustainable changes in local food supply chains.

<b>Methodology</b>	<b>100 – 250 words</b>
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The research method employed in this research involved the procedure for sample construction, developing a 25-items survey, and conducting 385 interviews with computer-assisted telephone interviewing (CATI).

For this study, a quota sample of 385 individuals was extracted from the population, with a confidence level of 95% ( $p=0.05$ ). The quotas were selected based on three main variables: gender (190 females and 195 males), residence area, and age classes (20-29,30-49,50-64, 65-74). The Province of Trento is characterized by several rural and peripheral areas and two main urban centres that attract citizens from the region. For the purposes of this research, the sixteen areas of the Province of Trento were divided into 3 main macro-areas due to densities and geographical dispersion of population: Adige Valley (which includes the two main urban centres), Western Valleys, and Eastern Valleys. Due to the need to reach elderly people, the survey was submitted via CATI, preferred to the online mode, to avoid the risk of self-selection of the sample. An online pilot test was conducted on sixty respondents before the start of the survey. After that, CATI was chosen as the more suited method to reach the selected population groups. The questionnaire included 25 questions divided into five parts; the first covers issues on shopping online, the second on food habits, the third on online food purchases and the fourth on preferred delivery options. The final part includes six questions to collect the socio-demographical characteristics of the participants. Data were collected from November to mid-December 2022.

<b>Results</b>	<b>100 – 250 words</b>
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The survey's main results reveal that the respondents' socio-economic variables and geographical elements are related to a greater or lesser sensitivity to the sustainability of delivery options, as well as the likelihood of making online food purchases. The results show that younger age groups are more willing to buy food online than older ones. However, the latter are more likely to choose a sustainable delivery method and demonstrate a higher degree of awareness of the impact of delivery when purchasing food online. The educational level was found to have a positive relationship with the likelihood of choosing environmentally, economically, and socially sustainable

methods of delivery. People with a higher level of education are more likely to consider sustainable options in delivery when purchasing food online. Furthermore, the survey results highlight that individuals with higher incomes are less likely to buy food online, and among those who buy food online, higher incomes are less willing to take into account the working conditions of delivery workers in their consumption choices. Moreover, living in marginal areas (Western and Eastern valleys) affects the willingness to buy online and to buy food online, due to the partial lack of services. For all respondents, the evidence reveals that 79% of the sample is not sensitive to the price variation of foodstuffs, given that a reduction in food prices does not result in an increase in the quantity purchased. Finally, in contrast to the existing literature, the Covid19 pandemic did not cause an increase in e-commerce and e-grocery, leaving them mostly unchanged with respect to the pre-pandemic levels.

### **Discussion and Conclusion**

**100 – 250 words**

The current study allows to characterise online food purchase habits and their related awareness in terms of sustainability in the Province of Trento. The survey involved several purchasing scenarios and showed that respondents' socioeconomic and geographical variables affect the preferred delivery option and the degree of awareness toward sustainability.

This contribution can help local policy makers define successful strategies to strengthen local food production chains and to find a trade-off between the stated preferences of consumers and the sustainability attributes of food delivery. This could lead to a mitigation of negative externalities of food delivery, considering at the same time environmental protection, enhancement of the local economy and improvement of the working condition of delivery workers.

In the future, this research will provide further development by using the Discrete Choice Model methodology, which estimates the willingness to pay and participate of consumers in sustainable food last-mile logistics.

Furthermore, a comparison between Italy and another EU country could be considerable to analyse differences in online purchasing behaviour and consumers' awareness towards sustainability of delivery options.

The present research could be extended to other Italian regions to inspire policy makers to implement initiatives for sustainable global goals at a national and regional level using a consumer and people-oriented perspective.