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Contribution to the Sustainability Challenges of the Food-Delivery Sector: Finding from the Deliveroo Italy Case Study

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Received: 8 August 2020; Accepted: 27 August 2020; Published: 29 August 2020



Abstract: The food delivery sector is assuming increasing importance in the distribution of food products and meals as it is becoming an ordinary component of consumption habits. However, the growth of the sector has inevitably affected the demand for freight transport, especially in urban areas. The aim of this study was to investigate the main enabling factors affecting the adoption of sustainable strategies, among which the electro-mobility, in the food delivery sector and what obstacles to dissemination can be seen. Deliveroo s.r.l. was chosen as case study. Results show that Deliveroo undoubtedly represents a good example of sustainable logistics and the dissemination of good practices among the key players of the food delivery sector. However, if on the one hand there is a strong commitment on the part of Deliveroo to find solutions that encourage the use of these means, on the other hand, there is the need for a greater commitment on the part of the institutions to create infrastructure conditions that facilitate the diffusion of these means.

Keywords: electro-mobility; sustainability; e-grocery shopping

1. Introduction

Several companies (restaurants, fast-food, super and minimarkets, etc.) today offer their customers the opportunity to buy food products online and have them delivered to their homes through food delivery distribution systems [1,2]. The food delivery sector, which is the most visible manifestation of the digitalization of society [3], is assuming increasing importance in the distribution of food products and meals as it is becoming an ordinary component of consumption habits [4]. Some data confirm the growing worldwide trend of this sector with a revenue that stands, in 2020, at US\$136,431 m, of which US\$70,741 m is attributable to the platform-to-consumer delivery segment; a value that should reach US\$182,327 in 2024 [5]. This growing demand for food delivery is driven by changes in consumption habits due to less time available to visit the physical shops and for family meal preparation [3,6–8], resulting in greater consumer attention on the purchase of ready-made food using food delivery systems. However, the growth of the sector has inevitably affected the demand for freight transport, especially in urban areas, affecting road safety; operator factors, leading to an intensification of flows; and deliveries and returns, with negative inevitable consequences on air quality and the environment [9–12]. Some authors have pointed out that although urban transport of food products has a lower environmental impact than that generated along the supply chain, consequent to the lower number of trips to shops and car trips of consumers, the frequency of flows, characterized by large empty return flows or by failed delivery attempts, cause higher emissions per unit of product [13–15].

This impact grows further in the case of perishable products, such as fresh or frozen products, whose transport requires an even greater consumption of energy, and consequently an increase in CO₂ emissions [16].

Several studies have been carried in order to verify the impact of home delivery services on pollution, and in particular on reducing emissions [17,18]. However, very few studies have focused on food delivery in urban areas, and especially on sustainable companies operating in the sector. The concept of sustainability in this case refers not to all processes of the food supply chain but only to the distribution phase, with the aim of ensuring a socioeconomically and ecologically sustainable recovery [19]. The sustainability of the food delivery sector, as Henriksson and colleagues [20] emphasized, depends, on the one hand, on the replacement of personal travels to restaurants, fast food, and supermarkets, with home delivery of e-groceries, and, on the other hand, on the energy efficiency of vehicles used for transport. Consistent with this, empirical findings have revealed that food home delivery involves a reduction in the duration of trips, which can reach rates of 93% [21]. However, as Heldt and co-authors [16] found, when food cooling is necessary, the total CO₂ emissions are much higher, emphasizing the need to identify more efficient solutions, such as less polluting vehicles for home delivery. In this respect, Hhrler and co-authors [9] showed that electric vehicles can be a viable alternative to increase sustainability of e-grocery home delivery, even if they involve additional costs for logistics service providers, and at the same time underline the need for broader base data to identify best practices for food distribution logistics to reduce emissions. In line with this, it becomes essential to adopt more sustainable transport systems for food delivery in order to reduce the carbon footprint [22], but this depends on the type and energy efficiency of the vehicle used [20]. The introduction of electric vehicles for food delivery, such as e-bikes, e-scooters equipped with an insulated storage, and e-cars could undoubtedly contribute to reducing the environmental impact of the distribution of food purchased online [23–25]. However, the spread of sustainable vehicles is hindered in some areas by infrastructure delays related, for example, to the low density of charging stations that limit driver access [9,26]. For this reason, as Bjørgen and co-authors [3] pointed out, institutions must promote more environmentally friendly vehicles through regulatory incentives, including free charging stations. Results of these studies reveal some of the challenges that the sector will have to face in the future in order to ensure greater sustainability, which can be summarized as follow: (i) identifying and encouraging the spread of more sustainable practices and highly energy-efficient vehicles for the home delivery transport; (ii) constantly acquire and monitor information related to the market and the sector for the definition of best practices aimed at guaranteeing greater sustainability; (iii) identify solutions and strategies aimed at encouraging the adoption of sustainable practices, and in particular of electric and sustainable vehicles promoted by both the public and private sectors; (iv) creating the conditions that favor a greater diffusion of recharging infrastructures in urban areas as a consequence of greater demand for sustainable mobility.

Nevertheless, the introduction of sustainable mobility in the food delivery sector must necessarily be part of a broader strategy. It is, in fact, through efficient management of materials, information, operations, and relations with stakeholders that it is possible to achieve the three dimensions of sustainable development (economic, environmental, and social), satisfying the expectations of the market and society in general. The knowledge of sustainability-oriented strategies adopted by food delivery companies, also through the implementation of electric mobility, is essential for policymakers and the main players of the food delivery system in order to fully understand the companies' vision and the obstacles encountered in the process of implementing these mobility systems and to promptly prepare for these new market trends, incorporating them into transportation planning. This obviously requires a multistakeholder approach in the different phases of identifying the problem, defining alternatives, and evaluating the effects aimed at building sustainable business models [27–29].

The identification of the main enabling factors of the implementation of sustainable distribution systems, through the use of electric vehicles in the food delivery sector, is of strategic importance in order to encourage the spread of these sustainable choices, while contributing to reducing emissions

in urban areas. With this in mind, the aim of this work was to investigate the main enabling factors affecting the adoption of sustainable strategies in the food delivery sector through an analysis of the Deliveroo case study. In detail, the study aimed to understand the decision-making process that leads to the implementation of sustainability-oriented strategies and what obstacles to dissemination can be seen. Deliveroo s.r.l. was chosen for two main reasons. First, the growing importance of the company in the food delivery market, with an annual turnover increase of +120 million euros in 2017, becoming the major national player in food delivery. Second, the company recently adopted sustainability-oriented strategies, among which is the adoption of electric mobility for home delivery.

2. Conceptual Framework

The adoption of new ideas, services, products, and processes based on the sustainability principles depends on several factors and has been studied in the literature using different theoretical approaches. In the context of this study, in order to explore and describe the main enabling factors affecting the adoption of sustainable practices and in particular of the electro-mobility in the food delivery industry, a conceptual framework based on three theoretical lens has been developed. In particular, this study investigated the role of managers and their proenvironmental behavior using the dominant logic theory [30], the theory of planned behavior (1991), and the absorptive capacity (ACAP) of the firms [31,32]. The growing demand for sustainability by economic institutions, along with customers, has profoundly affected the dominant logic of the decision-making process of companies and of the company managers who can perceive these new domains in a profoundly different way [33]. As Prahalad and Bettis [34] p. 490 asserted, the dominant logic refers to “the way in which managers conceptualize the business and make critical resource allocation decisions—be it in technologies, product development, distribution, advertising, or in human resource management”. The dominant logic can be described as a scheme used by top managers as a guide in the strategic decision-making process, based on the filtering of relevant information from the external competitive external environment, which are then incorporated into new business strategies [33,35]. In this respect knowledge, exploration, and exploitation can be used by managers to create new knowledge and reconfigure firm’s resources establishing new projects and initiatives [36]. In line with this, the absorptive capacity (ACAP), of which Cohen and Levinthal [37] were the precursors, has been included in our conceptual framework, since it is seen as the “ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends”. In other words, the company implements a sequential process based on exploratory learning, linked to external knowledge, of exploiting the acquired knowledge, through the transformation of the same knowledge [38]. The firm’s ACAP, as emphasized by Zahra and George [39], is closely connected with innovation, promoting its speed of introduction, frequency, and size, and above all contributing to creating new knowledge, which becomes an integral part of future absorption capacity. Finally, the intention to adopt sustainable behavior and what individual drivers guide this behavior has been explored in the theory of planned behavior (TPB). According to this theory, the managerial intention to exhibit specific behavior, in this context related to proenvironmental behavior, is influenced by its (i) social norms associated with the behavior, (ii) attitude towards performing the behavior, and (iii) perceived behavioral control [40]. In particular, the attitude is a predisposition to adopt a specific behavior, the subjective norms or social norms refer to the need to meet the expectations of external and internal stakeholders who approve or not of the managers’ decisions, while the perceived behavioral control indicates ease or the manager’s difficulty in performing the behavior [41]. Several studies in the economic literature adopted this theoretical lens in order to identify the main factors affecting the choice of managers to adopt sustainable practices, confirming the usefulness of the theory in explaining this behavior [42,43]. Some of these empirical studies emphasized that the main drivers are the managers’ attitudes and the ability to manage the sustainable practices introduced [42–44]. While other studies [45,46] have revealed the crucial role of social norms.

Following the above discussion, we suppose that the choice of managers of the food delivery industry to introduces ideas, projects, and initiatives related to the sustainability is strictly linked to

the dominant logic of the managers, to their ability to filter and capitalize external information, and to their proenvironmental behavior.

3. Materials and Methods

3.1. The Case Study Approach

In order to explore and describe the main enabling factors affecting the proenvironmental behavior of a company operating in the food delivery industry, a case study approach was employed. Case study research is “an empirical inquiry that investigates a contemporary phenomenon within its real-life context, when the boundaries between phenomenon and context are not clearly evident, and in which multiple sources of evidence are used” [47]. Indeed, this research strategy is suitable for explorative qualitative research [48] and is based on a detailed examination of a phenomenon little explored, complex, contextual, and too context-sensitive to be studied through other approaches and especially using quantitative methods [49,50]. In the current situation, and taking into consideration the aim of this study, the case study method seemed the most appropriate to explore this phenomenon and understand or discover specific mechanisms and facets [51–53]. If, on the one hand, the case study method provides detailed qualitative information, is useful for further research, and permits exploration of impractical phenomena, on the other hand, it provides little basis for the generalization of results, little scientific rigor, and it is affected by the researchers’ own subjective feelings. To overcome these limitations and ensure the validity of the research, a triangulation technique was adopted, collecting data from multiple sources, helping to remove any biases due to research subjectivity in the data interpretation [54].

3.2. Company Description

Deliveroo is a food delivery company founded in 2013 in London (UK) by Will Shu and Greg Orlowski, and today it is present in 12 countries and more than 800 cities. Customers place an order through the application or the website and the riders transport the product purchased from the restaurant to the address indicated by the customer. In Italy, the company was born in 2015 and today is led by Mr. Matteo Sarzana. It is present in 200 cities and collaborates with more than 13,000 restaurants throughout the territory, from large catering chains to independent restaurants. It has 160 employees and 13,000 drivers working there. Home delivery takes place mainly through the use of bikes (49% of the vehicles as a whole), e-bikes (6.5%, the number of which has increased in absolute terms and in percentage terms), scooters (24%), and cars (20.5%); the latter being most prevalent in smaller urban centers where home delivery does not affect city logistics. In 2018, the company had a turnover of 21.9 million euros, generated by restaurant and customer commission on delivery, marking a 97% increase compared to the previous year and generating a turnover for the catering sector of around 70 million euros.

3.3. Data Collection and Analysis

This study took place between May and July 2020 and multiple data sources were employed. As a primary source, we conducted in-depth interviews via Google Meet with organizational managers of Deliveroo Italy. In particular, four in-depth interviews were carried out separately with Mr. Matteo Sarzana, General Manager; Mr. Martino Madelli, Head of Operations; Mr. Federico Scarsi, Head of People; and Mr. Gian Luca Petrillo, Head of Corporate Affairs. Each interview lasted approximately 30 min, and was recorded and transcribed verbatim. Respondents received a copy of the manuscript in order to validate the contents of the study. The interviews focused on several topics, mainly related to the sustainability choices of Deliveroo Italy, and in particular: the innovative sustainability-oriented projects and initiatives adopted, the competitive environment in which the company operates, the approach towards sustainability, the choice to encourage the use of electric vehicles for the distribution of food products, the acquisition of knowledge and the capitalization of information for the adoption of

sustainable strategies, and the collaborative strategies adopted to create a more sustainable environment. A semi-structured interview was adopted for the study using a single set of open-ended questions for all interviewees whose wording changed in relation to the situation and opinion of the participants [55]. Furthermore, in order to achieve data triangulation, we collected secondary data, such as media articles published online, newspapers, documents published on the official Deliveroo website, in order to capture other dimensions of the studied phenomenon.

4. Results

4.1. *The Competitive Environment and Sustainable Choices*

As emerged from the interviews, all respondents exhibited the same vision of the delivery sector in terms of competitive positioning and strategies addressed to introduce product and service innovation, mainly in the sustainability field. As asserted by Mr. Matteo Sarzana, General Manager of Deliveroo Italy, “we were the first to create this type of market that did not exist before, offering restaurants a service that they did not offer to their customers, that of the food home delivery”. Furthermore, Deliveroo was the first company to launch the cloud kitchen, i.e., kitchens dedicated exclusively to delivery from which it is possible to order only online, or the pick-up service during the Covid-19 pandemic, which lets users place an order then go to the restaurant and get the food themselves, or the service that offers the possibility to order from inside the restaurant through the app by eliminating payment to the restaurant. For these reasons, all interviewees considered Deliveroo a forerunner compared to the main competitors.

Strategies and initiatives, those promoted by Deliveroo, are the result of a continuous sharing of ideas and information on the environment in which the company operates among employees and managers. Indeed, for a company leader in the sector, and one who does not want to lose the competitive advantage gained, the acquisition of information, the analysis of data, and the capitalization of knowledge have a strategic value. For this reason, as Mr. Gian Luca Petrillo said, it is necessary to prepare quarterly or monthly plans, as in the case of the Covid-19 pandemic, built after an assessment of the previous period and taking into consideration the market trends. Therefore, information from the market is acquired daily, feedback is requested from employees, and meetings are periodically organized to share the information acquired and intervene promptly to solve specific problems. From this point of view, Mr. Gian Luca Petrillo underlined that the monitoring of the data is constant to evaluate company performance, the impacts of the choices made, and the economic sustainability of the proposed initiatives.

Commitment towards sustainability and respect for the environment characterize the platform’s activities, being part of the corporate culture, which is entirely new for the very nature of the sector. From this perspective, and as emphasized by Mr. Federico Scarsi, Head of People of Deliveroo Italy, an internal committee called ‘Deliveroo Goes Green’ was created and self-managed by the internal staff, which aims to propose sustainable initiatives to top management and spread a culture of sustainability in the workplace. Those and other initiatives are examined by a specific committee. As Mr. Federico Scarsi, said, “at the beginning of the year, each department proposes to the top management initiatives and projects with the relative costs, which are subsequently assessed and must fall within the budget assigned to the initiatives themselves”. With specific regard to sustainable choices, several initiatives were developed by Deliveroo Italy, underlying the company’s strong commitment in environmental and social fields. Among the main projects and initiatives, the company encourages the use of public transport by its employees by reimbursing almost all subscriptions. Indeed, for Deliveroo it is important both to bring the customer high quality food and also the sustainability of the delivery service. For this reason, the company continues to work to improve their app and product packaging to answer the customers needs and expectations [56,57]. In line with this, other good empirical examples include the plastic free campaign that was launched within the offices, eliminating the use of plastic coffee cups, replacing them with ceramic cups with the

Deliveroo logo, leading to savings of around 50 thousand plastic cups in a year. Furthermore, the company, to celebrate World Environment Day 2020, established a partnership with AMSA, a municipal company in Milan that deals with waste management, by launching an awareness campaign to support restaurants and citizens to correctly differentiate food packaging and support restaurateurs in choosing sustainable and compostable packaging [58,59]. Deliveroo is increasingly committed to the fight against plastic consumption, as emerged with the introduction of the “no cutlery” option in the app, giving customers the opportunity to choose not to receive plastic cutlery together with the food ordered. This initiative led to a drastic contraction in the demand for plastic cutlery, 85.6% less in the first months of 2020 [60–62]. The strong environmental commitment, as shown by the initiatives undertaken, is the result of a constant and growing company commitment in the diffusion of an increasingly widespread environmental and social culture. In line with this, Mr. Matteo Sarzana asserted that “We want our presence in the territories and communities in which we operate to create value not only from an economic and employment point of view but also socially and environmentally” [60].

4.2. Sustainability Orientation and Electro-Mobility

The idea to introduce electro-mobility for home delivery arose from the need to satisfy the demands of customers and institutions. On the one hand, the growing environmental awareness of consumers and, on the other hand, the need to reduce urban transport pollution and emissions, have led the food delivery company to adopt more sustainable practices, making it more sustainable than competing companies. This is even more true, as affirmed by Mr. Scarsi, for multinationals, which are asked for a greater commitment in the environmental field. The company does not have a fleet of vehicles, since it is the rider who chooses the vehicle to be used for food home delivery in relation to its environmental sensitivity, but Deliveroo supports this initiative, promoting the use of sustainable vehicles and trying to identify solutions that could favor the spread of sustainable and electric vehicles, leading to establishing partnerships with companies that could offer particularly advantageous solutions for riders. In line with this, Deliveroo recently launched a new partnership with Go-Volt, a start-up that offers sustainable micromobility sharing services, through which riders can obtain some exclusive rental offers for the purchase or rental of e-bikes and e-scooters [63]. As Mr. Sarzana said: “this is an ethical choice linked to the context in which the company operates, in fact the company cannot fail to take into account not only the economic, but also the environmental and social impact of the choices in the context in which it operates”. From the riders’ point of view, the adoption of electric vehicles means they can make more deliveries, travel more miles than they can with a normal bike without getting tired, and work longer [64].

However, the choice of light vehicles, such as bikes, e-bikes, or scooters, is not only an environmental choice but also a necessary choice for the type of delivery. It is, as Mr. Gian Luca Petrillo pointed out, a match between operational needs and environmental sensitivity. Some data released by Deliveroo revealed the effectiveness of the sustainable mobility strategy adopted that resulted in a reduction of 6400 tons of CO₂ not emitted into the atmosphere thanks to the use of bikes, and of these, 700 tons only in Italy, equal to that absorbed by 20 thousand plants [65,66]. Mr. Matteo Sarzana asserted that “This initiative is part of a broader strategy, which looks to the future, in which we are committed, in the medium term, to promoting electric mobility, the reduction of emissions and eco-sustainable packaging” [60]. This is in line with what Mr. Scarsi said, according to which the choice to adopt sustainable vehicles and in particular electric ones is a virtuous behavior that has positive implications for the market, also influencing the choice of other companies in the sector, and is the result of a concrete commitment of the top management to do something for sustainability. Undoubtedly, there is a return of image, especially for customers who are more attentive and sensitive to environmental issues, who consider these choices as an ethical and social value. The implementation of this new distribution system has not encountered any internal obstacles, both for the training of staff, which is medium–high, and for the age of the same staff, on average 27 years. The main complexity, as Mr. Scarsi said, is linked to the diffusion of the green culture among drivers, despite this initiative being

created with the aim of giving a signal for changing consumption and life habits. Through this choice, as Mr. Madelli said, the company became a catalyst for a message of sustainability. Furthermore, the diffusion of these vehicles, as emphasized by respondents, is today hampered by various factors, and in particular by the cost, which remains too high despite environmental awareness; by the limited diffusion of charging stations; by the autonomy of the vehicles; and by technological obsolescence.

5. Discussion and Conclusions

This study explored the proenvironmental strategies adopted by one of the most important food delivery companies in the international arena. A special focus was, in particular, on sustainable mobility, as today, more so than in the past, it has become a priority to respond to the environmental pressures in various economic sectors, among which food delivery is one. The findings provide insights and hints to the local authorities and managers of companies operating in the food delivery sector interested in adopting more sustainable strategies contributing to reducing the environmental impact of their activity and the emissions involved in transporting in urban areas, one of the most relevant of today's problems [9,10]. As discussed earlier, the results of the interviews show that a company working in a highly dynamic and competitive market, such as that of food delivery, invests daily in the acquisition of information from the market, managing to capitalize on it, thanks to a young, dynamic, and competent working environment. In particular, the information translates into projects and initiatives, which, examined by a specific committee, become operational and effective, since they are the result of a shared project that takes into account the expectations of all potential internal and external stakeholders. This ability of knowledge acquisition, assimilation, transformation, and exploitation, which emerged from the analysis conducted, ensures that companies can reconfigure new operational capacities oriented towards superior performance [39,52,67]. The acquisition and management of information from the external environment, as well as the constant monitoring of the goals achieved, allow both definition of best practices oriented towards sustainability, and, at the same time, the satisfaction of the information needs for a rapidly growing but little-explored sector. The results also show that numerous initiatives and choices are the result of a corporate culture of sustainability, which integrates social, environmental, and economic concerns into corporate culture, decision-making strategies, and operations [68]. The numerous sustainability-oriented initiatives undertaken by the company, including the use of sustainable and electric vehicles, is the result of an ethical company choice aimed at responding to the expectations of institutions, politicians, citizens, and operators in the sector in the environmental field. Indeed, as emphasized by Borza [69], the optimization of the efficiency of logistics services simultaneously requires the satisfaction of consumer needs and the need for institutions to reduce the environmental impact of distribution. An interesting outcome from the survey was the company's commitment in the social field. Through the initiatives promoted, Deliveroo aims to promote ethical and social values, educating citizens and sector operators to adopt more environmentally responsible behavior, which can become a competitive lever of the company. In this way, Deliveroo becomes a social company that aligns market logic and social logic, seeking self-support for the sale of products and services together with the generation of social value [70,71].

The adoption of electric vehicles, as highlighted by the interviewees, has had and will have a strong impact on improving air quality and reducing emissions. This is in line with what has been shown empirically in many studies, according to which the adoption of electric vehicles is the suitable solution to reduce the environmental impact related to food delivery in urban areas [9,21,23]. The sustainability of the transport system and the diffusion of sustainable vehicles, however, clashes with some problems related to vehicle cost, and above all, with infrastructure problems, such as the lack of recharging stations that politicians and institutions must address, in line with European policies aimed at sustainability. These obstacles have also been found in other research on home food delivery [9]. This underlines how a multistakeholder approach is needed, which, through the involvement of all key players in the sector, in the different planning stages, can create social and environmental value [3,28,72]. In this respect, the creation of partnerships with service companies

that deal with electro-mobility can represent an optimal solution, contributing to the creation of value in the territory. This demonstrated how it is possible to encourage the use of electric vehicles through strategic partnerships, and above all, that there is a demand for sustainable mobility driven by the environmental awareness of operators in the sector and their need to meet the expectations of consumers who are more attentive to environmental issues. Findings must represent an input for institutions at the local level, who may use this information to promote infrastructural policies aimed at encouraging the adoption of sustainable vehicles. Furthermore, Deliveroo, through the strategies adopted, faces the challenge of reconciling the growing demand for home food delivery with issues related to sustainability, and in particular, the impact of distribution in urban areas on air quality and the environment. From this point of view, the latest Italian Relaunch Decree (Decree 34/2020) [73], according to which a mobility bonus was provided for the purchase of bicycles, including pedal-assisted bicycles, as well as vehicles for personal mobility with mainly electric propulsion, can be a lever to encourage the spread of sustainable mobility systems in urban areas, including for home delivery of food products. Finally, as revealed by interviewees, Deliveroo is a precursor of virtuous behavior oriented towards sustainability. The “no cutlery” campaign, launched in 2018, is in line with the EU 2019/904 directive, regarding the reduction in the use of disposable plastic from 2021 [74].

Our results represent a good example of environmentally, socially, and economically responsible behavior for other companies in the sector, in order to respond to growing environmental and social concerns of citizens and institutions.

6. Practical Implications, Limitations, and Future Research

As previously highlighted, the transport of goods is today responsible for emissions and problems related to air quality, especially in urban areas. Deliveroo undoubtedly represents a good example of sustainable logistics and the dissemination of good practices among the key players of the food delivery sector. It is evident, in fact, that the adoption of sustainable means, including e-bikes or e-scooters, can contribute substantially to the reduction of emissions of polluting substances into the atmosphere. However, if on the one hand, there is a strong commitment on the part of Deliveroo to find solutions that encourage the use of these means, on the other hand, there is the need for a greater commitment on the part of the institutions to create infrastructure conditions that facilitate the diffusion of these means. From this point of view, the information collected through the analysis of the Deliveroo case study, with reference to the sustainable mobility choices adopted, can be incorporated into the decision-making process aimed at making the logistics system in urban centers more efficient and shared with all players of the food delivery system.

Despite the results being interesting, this study shows the limitations associated with the choice to adopt a case study which prevents generalization, allowing us, however, to enrich the literature in this research field and provide new insights for future research. In particular, taking into consideration this limitation and the scarcity of studies in this research field, new empirical research could be carried out in order to evaluate the impact of proenvironmental initiatives and projects based on quantitative methods.

Author Contributions: A.G. conceived and designed the research; A.G. and D.S. drafted the manuscript; A.G. revised the manuscript; D.V. and M.C. discussed the results. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded under the EnerNETMob project, Cod. 4MED 17_2.3.M123_040, co-funded by the European Regional Development Fund, INTERREG Mediterranean program. The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

Acknowledgments: Special thanks to the managers of Deliveroo Italy.

Conflicts of Interest: The authors declare no conflict of interest.

References

- Pan, S.; Giannikas, V.; Han, Y.; Grover-Silva, E.; Qiao, B. Using customer-related data to enhance e-grocery home delivery. *Ind. Manag. Data Syst.* **2017**, *117*, 1917–1933. [CrossRef]
- Agatz, N.A.H.; Fleischmann, M.; Van Nunen, J.A.E.E. E-fulfillment and multi-channel distribution—A review. *Eur. J. Oper. Res.* **2008**, *187*, 339–356. [CrossRef]
- Bjørngen, A.; Bjerkan, K.Y.; Hjelkrem, O.A. E-groceries: Sustainable last mile distribution in city planning. *Res. Transp. Econ.* **2019**, 100805. [CrossRef]
- Food Delivery Report. 2002. Available online: <http://fooddelivery.report/> (accessed on 20 July 2020).
- STATISTA. 2020. Available online: <https://www.statista.com> (accessed on 15 July 2020).
- Galati, A.; Moavero, P.; Crescimanno, M. Consumer awareness and acceptance of irradiated foods: The case of Italian consumers. *Br. Food J.* **2019**, *121*, 198–1412. [CrossRef]
- Galati, A.; Tulone, A.; Moavero, P.; Crescimanno, M. Consumer interest in information regarding novel food technologies in Italy: The case of irradiated foods. *Food Res. Int.* **2019**, *119*, 291–296. [CrossRef]
- Kilcast, D.; Angus, F. (Eds.) *Reducing Salt in Foods: Practical Strategies*; Elsevier: Amsterdam, The Netherlands, 2007.
- Ehrler, V.C.; Schöder, D.; Seidel, S. Challenges and perspectives for the use of electric vehicles for last mile logistics of grocery e-commerce—Findings from case studies in Germany. *Res. Transp. Econ.* **2019**, 100757. [CrossRef]
- Hesse, M. *The City as a Terminal: The Urban Context of Logistics and Freight Transport*; Series the City as a Terminal: The Urban Context of Logistics and Freight Transport; Routledge: London, UK, 2016; Volume 36, pp. 211–240.
- Galati, A.; Siggia, D.; Crescimanno, M.; Martín-Alcalde, E.; Saurí Marchán, S.; Morales-Fusco, P. Competitiveness of short sea shipping: the case of olive oil industry. *Br. Food J.* **2016**, *118*, 1914–1929. [CrossRef]
- Baldwin, C.J. *The 10 Principles of Food Industry Sustainability*; John Wiley & Sons, Ltd.: Chichester, UK, 2015. [CrossRef]
- Gevaers, R.; Van de Voorde, E.; Vanellander, T. Cost modelling and simulation of last-mile characteristics in an innovative B2C supply chain environment with implications on urban areas and cities. *Procedia Soc. Behav. Sci.* **2014**, *125*, 398–411. [CrossRef]
- Seebauer, S.; Kulmer, V.; Bruckner, M.; Winkler, E. Carbon emissions of retail channels: the limits of available policy instruments to achieve absolute reductions. *J. Clean. Prod.* **2015**, *132*, 192–203. [CrossRef]
- Visser, E.J.; Lanzendorf, M. Mobility and accessibility effects of B2C ecommerce: A literature review. *Tijdschr. Econ. Soc. Geogr.* **2004**, *95*, 189–205. [CrossRef]
- Heldt, B.; Matteis, T.; von Schmidt, A.; Heinrichs, M. Cool But Dirty Food?—Estimating the Impact of Grocery Home Delivery on Transport and CO₂ Emissions Including Cooling. *Res. Transp. Econ.* **2019**. Available online: <http://www.elsevier.com/locate/retrec> (accessed on 20 July 2020).
- Visser, J.; Nemetob, T.; Browne, M. Home Delivery and the Impacts on Urban Freight Transport: A Review. *Procedia Soc. Behav. Sci.* **2014**, *125*, 15–27. [CrossRef]
- Siikavirta, H.; Punakivi, M.; Kärkkäinen, M.; Linnanen, L. Effects of E-commerce on greenhouse gas emissions: A case study of grocery home delivery in Finland. *J. Ind. Ecol.* **2002**, *6*, 83–97. [CrossRef]
- Bloemhof, J.M.; Soysal, M. Sustainable food supply chain design. In *Sustainable Supply Chains*; Springer: Cham, Switzerland, 2007; pp. 395–412.
- Henriksson, M.; Berg, J.; Karlsson, J.; Rogerson, S.; Winslott Hiselius, L. Kopa mat online? Effekter av ökad e-handel för person-och godstransporter i ett växande e-handelssamhälle. In *VTI Report 977*; Statens Vag-Och Transportforskningsinstitut: Linköping, Sweden, 2018.
- Rotem-Mindali, O.; Weltevreden, J.W. Transport effects of e-commerce: What can be learned after years of research? *Transportation* **2013**, *40*, 867–885. [CrossRef]
- Wygonik, E.; Goodchild, A. Evaluating the efficacy of shared-use vehicles for reducing greenhouse gas emissions: a US case study of grocery delivery. *J. Transp. Res. Forum* **2012**, *51*, 111–126. [CrossRef]
- Moorman, S.; Kansen, M. *Naar Duurzaam Wegverkeer in 2050. Een Verkenning van Mogelijke Opties*; KiM: Hague, The Netherlands, 2011.
- Menge, J.; Horn, B. Das Fahrrad im Wirtschaftsverkehr. In *Handbuch der Kommunalen Verkehrsplanung 69Offenbach*; VDE: Berlin, Germany, 2014.

25. Rudolpha, C.; Grube, J. Cargo cycles in commercial transport: Potentials, constraints, and Recommendations. *Res. Transp. Bus. Manag.* **2017**, *24*, 26–36. [[CrossRef](#)]
26. Leyerer, M.; Sonneberg, M.O.; Heumann, M.; Breitner, M.H. Shortening the Last Mile in Urban Areas: Optimizing a Smart Logistics Concept for E-Grocery Operations. *Smart Cities* **2020**, *3*, 31. [[CrossRef](#)]
27. Dablanc, L. E-commerce trends and implications for urban logistics. In *Urban logistics. Management, Policy and Innovation in a Rapidly Changing Environment*; Browne, M., Behrends, S., Woxenius, J., Giuliano, G., Holguin-Veras, J., Eds.; Kogan Page Limited: London, UK; New York, NY, USA, 2019.
28. Giacomarra, M.; Crescimanno, M.; Sakka, G.; Galati, A. Stakeholder engagement toward value co-creation in the F&B packaging industry. *EuroMed J. Bus.* **2019**. [[CrossRef](#)]
29. Thrassou, A.; Vrontis, D.; Crescimanno, M.; Giacomarra, M.; Galati, A. The requisite match between internal resources and network ties to cope with knowledge scarcity. *J. Knowl. Manag.* **2020**, *24*, 861–880. [[CrossRef](#)]
30. Bettis, R.A.; Hall, W.K.; Prahalad, C.K. Diversity and performance in the multibusiness firm. *Natl. Proc. Am. Inst. Decis. Sci.* **1978**, 210–222.
31. Flatten, T.C.; Greve, G.I.; Brettel, M. Absorptive capacity and firm performance in SMEs: The mediating influence of strategic alliances. *Eur. Manag. Rev.* **2011**, *8*, 137–152. [[CrossRef](#)]
32. Volberda, H.W.; Foss, N.J.; Lyles, M.A. Perspective—Absorbing the Concept of Absorptive Capacity: How to Realize Its Potential in the Organization Field. *Organ. Sci.* **2010**, *21*, 931–951. [[CrossRef](#)]
33. Darkow, I.-L.; Foerster, B.; von der Gracht, H.A. Sustainability in food service supply chains: future expectations from European industry experts toward the environmental perspective. *Supply Chain Manag.* **2015**, *20*, 163–178. [[CrossRef](#)]
34. Prahalad, C.K.; Bettis, R.A. The Dominant Logic: A New Linkage between Diversity and Performance. *Strateg. Manag. J.* **1986**, *7*, 485–501. [[CrossRef](#)]
35. Bettis, R.A.; Prahalad, C.K. The dominant logic: Retrospective and extension. *Strateg. Manag. J.* **1995**, *16*, 5–14. [[CrossRef](#)]
36. Easterby-Smith, M.; Prieto, I.M. Dynamic capabilities and knowledge management: An integrative role for learning? *Br. J. Manag.* **2008**, *19*, 235–249. [[CrossRef](#)]
37. Cohen, W.M.; Levinthal, D.A. Innovation and learning: The two faces of R&D. *Econ. J.* **1989**, *99*, 569–596. [[CrossRef](#)]
38. Lane, P.J.; Koka, B.R.; Pathak, S. The reification of absorptive capacity: A critical review and rejuvenation of the construct. *Acad. Manag. Rev.* **2006**, *31*, 833–863. [[CrossRef](#)]
39. Zahra, S.A.; George, G. Absorptive capacity: A review, reconceptualization, and extension. *Acad. Manag. Rev.* **2002**, *27*, 185–203. [[CrossRef](#)]
40. Ajzen, I. The theory of planned behavior. *Organ. Behav. Hum. Decis. Process.* **1991**, *50*, 179–211. [[CrossRef](#)]
41. Fishbein, M.; Ajzen, I. *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*; Addison-Wesley: Boston, MA, USA, 1975.
42. Galati, A.; Schifani, G.; Crescimanno, M.; Vrontis, D.; Migliore, G. Innovation strategies geared toward the circular economy: A case study of the organic olive-oil industry. *Riv. Studi Sostenibilità* **2018**, *1*, 137–158. [[CrossRef](#)]
43. Fielding, K.S.; Terry, D.J.; Masser, B.M.; Hogg, M.A. Integrating social identity theory and the theory of planned behaviour to explain decisions to engage in sustainable agricultural practices. *Br. J. Soc. Psychol.* **2008**, *47*, 23–48. [[CrossRef](#)]
44. Fiore, M.; Pellegrini, G.; Sala, P.L.; Conte, A.; Liu, B. Attitude toward food waste reduction: The case of Italian consumers. *Int. J. Glob. Small Bus.* **2017**, *9*, 185–201. [[CrossRef](#)]
45. Sharma, P.; Sharma, S. Drivers of proactive environmental strategy in family firms. *Bus. Ethics Q.* **2011**, *21*, 309–334. [[CrossRef](#)]
46. Papagiannakis, G.; Lioukas, S. Values, attitudes and perceptions of managers as predictors of corporate environmental responsiveness. *J. Environ. Manag.* **2012**, *100*, 41–51. [[CrossRef](#)] [[PubMed](#)]
47. Yin, R.K. *Case Study Research: Design and Methods*; Sage Publications: Thousand Oaks, CA, USA, 1984.
48. Chetty, S. The case study method for research in small-and medium-sized firms. *Int. Small Bus. J.* **1996**, *15*, 73–85. [[CrossRef](#)]
49. Yin, R.K. Applied social research methods. In *Case Study Research: Design and Methods*, 3rd ed.; Series 5; Sage Publications: Thousand Oaks, CA, USA, 2003.
50. Stake, R.E. *The Art of Case Study Research*; SAGE: London, UK, 1995.

51. Pucci, T.; Casprini, E.; Galati, A.; Zanni, L. The virtuous cycle of stakeholder engagement in developing a sustainability culture: Salcheto winery. *J. Bus. Res.* **2018**. [CrossRef]
52. Vrontis, D.; Basile, G.; Andreano, M.S.; Mazzitelli, A.; Papasolomou, I. The profile of innovation driven Italian SMEs and the relationship between the firms' networking abilities and dynamic capabilities. *J. Bus. Res.* **2020**, *114*, 313–324. [CrossRef]
53. Dubois, A.; Gadde, L.E. Systematic combining—A decade later. *J. Bus. Res.* **2014**, *67*, 1277–1284. [CrossRef]
54. Teegavarapu, S.; Summers, J.D.; Mocko, G.M. Case study method for design research: A justification. In Proceedings of the ASME 2008 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference, Brooklyn, NY, USA, 3–6 August 2008; pp. 495–503.
55. Yin, R.K. *Case Study Research: Design and Methods*, 4th ed.; Sage Publications: Thousand Oaks, CA, USA, 2009.
56. Deliveroo Foodscene. Great Food Shouldn't Cost the Earth. 2018. Available online: <https://foodscene.deliveroo.co.uk/food-trends/great-food-should-not-cost-the-earth.html> (accessed on 14 May 2020).
57. Deliveroo Foodscene. Ever Thought About Eco-Friendly Packaging? 2019. Available online: <https://foodscene.deliveroo.be/en/restaurant-profiles/ever-thought-about-eco-friendly-packaging.html> (accessed on 14 May 2020).
58. Amsa. Milano, Deliveroo e Amsa Insieme per l'Ambiente. 2020. Available online: <https://www.amsa.it/comunicati/milano-deliveroo-e-amsa-insieme-lambiente> (accessed on 15 July 2020).
59. Il Giorno. Deliveroo e Amsa, Accordo per la Cultura Green di Ristoranti e Clienti. 2020. Available online: <https://www.ilgiorno.it/milano/cronaca/deliveroo-1.5197962> (accessed on 10 July 2020).
60. Il Gazzettino. Milano, Deliveroo le Consegne Diventano Green: Ecco i Mezzi Elettrici. 2020. Available online: https://www.ilgazzettino.it/italia/cronaca_bianca/milano_deliveroo_le_consegne_diventano_green_ecco_i_mezzi_elettrici-5186034.html (accessed on 24 June 2020).
61. Il Messaggero. Con Deliveroo Gli Italiani Diventano Più Eco: Addio Alle Posate di Plastica. 2018. Available online: https://www.ilmessaggero.it/italia/con_deliveroo_gli_italiani_diventano_piu_eco_addio_alle_posate_di_plastica_04_dicembre_2018-4150837.html (accessed on 20 May 2020).
62. Deliveroo Foodscene. Our Plan to #BeatPlasticPollution. 2018. Available online: <https://foodscene.deliveroo.co.uk/food-trends/beat-plastic-pollution.html> (accessed on 10 May 2020).
63. Deliveroo. Renting an E-Vehicle. 2020. Available online: <https://roocommunity.com/evehicle-hire/> (accessed on 22 June 2020).
64. RideElectric. DRAFT: Deliveroo eBike Trial. 2020. Available online: <https://www.rideelectric.co.uk/deliveroo-ebike-trial/> (accessed on 20 June 2020).
65. Ansa. Consegna Cibo in Bicicletta fa Risparmiare 6400 Ton/Anno CO₂. 2018. Available online: https://www.ansa.it/canale_terraegusto/notizie/cibo_e_salute/2018/02/07/consegna-cibo-in-bicicletta-fa-risparmiare-6400-tonanno-co2_a3a61248-f91e-4bed-9862-02a525cf6cdb.html (accessed on 20 July 2020).
66. Alternativa Sostenibile. La Consegna del Cibo a Domicilio fa Risparmiare 6 Mila Tonnellate di CO₂ All'Anno. 2018. Available online: <http://www.alternativasostenibile.it/articolo/la-consegna-del-cibo-domicilio-fa-risparmiare-6mila-tonnellate-di-co2-allanno> (accessed on 16 August 2020).
67. Del Vecchio, P.; Mele, G.; Passiante, G.; Vrontis, D.; Fanuli, C. Detecting customers knowledge from social media big data: toward an integrated methodological framework based on netnography and business analytics. *J. Knowl. Manag.* **2020**, *24*, 799–821. [CrossRef]
68. Berger, I.E.; Cunningham, P.H.; Drumwright, M.E. Mainstreaming corporate social responsibility: Developing markets for virtue. *Calif. Manag. Rev.* **2007**, *49*, 132–160. [CrossRef]
69. Borza, M. The connection between efficiency and sustainability—A theoretical approach. *Procedia Econ. Financ.* **2014**, *15*, 1355–1363. [CrossRef]
70. Tardivo, G.; Bresciani, S.; Viassone, M. A descriptive framework for an excellent social accountability. *Int. J. Manag. Financ. Account.* **2017**, *9*, 166–181. [CrossRef]
71. Jahchan, A.L.; Comini, G.M.; D'amario, E.Q. Negócios sociais: A percepção, a consciência e o grau de interesse pelo tema para os alunos de graduação em administração. *Adm. Ensino Pesqui. Rio J.* **2016**, *17*, 537–566. [CrossRef]
72. Lindenau, M.; Böhler-Baedeker, S. Citizen and stakeholder involvement: A precondition for sustainable urban mobility. *Transp. Res. Procedia* **2014**, *4*, 347–360. [CrossRef]

73. Decreto-IEgge Recante Misure Urgenti in Materia di Salute, Sostegno al Lavoro e All'Economia, Nonché di Politiche Sociali, Connesse All'Emergenza Epidemiologica da Covid-19. Gazzetta Ufficiale la Legge 17 Luglio 2020, n. 77, di conversione con modifiche del decreto-legge 19 maggio 2020, n. 34 (c.d. decreto Rilancio). Available online: <https://www.gazzettaufficiale.it/eli/id/2020/05/19/20G00052/sg> (accessed on 20 July 2020).
74. Direttiva UE 2019/904 del Parlamento Europeo e del Consiglio del 5 Giugno 2019 Sulla Riduzione Dell'Incidenza di Determinati Prodotti di Plastica Sull'Ambiente GUCE del 12 Giugno 2019, n. 155. Available online: <https://eur-lex.europa.eu/legal-content/IT/TXT/PDF/?uri=CELEX:32019L0904> (accessed on 14 June 2020).



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