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The Value of Networks Against Food Waste: The Case of “Too Good To Go”¹

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Abstract

The article addresses the issue of food waste through the study of the Too Good To Go (TGTG) movement and the contribution that the app has made to raising user awareness in the fight against food waste. After highlighting the phenomenon at European and national level, the article focuses on the awareness and motivation of the users of the TGTG app through the analysis of the discussions in two Facebook groups, among the most numerous in Italy, supported by some data from a qualitative survey conducted on a sample of Italian consumers. The analysis highlights a large presence of the TGTG initiative on the national territory in different Italian regions. The growing number of users of the app shows that the initiative is also successful in Italy. However, users seem to place more emphasis on saving money and the quality of food than on the joint project to combat food waste.

Keywords: food waste, sustainability, online consumption.

¹ This paper is a joint work by the authors. However, in line with standard academic practice, we indicate that Stefania Fragapane wrote the paragraphs 1, 3, 4 e 7; Ariela Mortara wrote paragraphs 2, 5 and 6.

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1. Introduction

In the last decade, the problem of food waste has attracted considerable attention worldwide (Aschemann-Witzel et al., 2015; Gollnhofer, 2017). It is an issue associated with significant economic losses, ethical and social concerns, negative environmental impacts, and significant nutritional consequences, and poses a threat to global sustainability. Globally, it is estimated that \$2.6 trillion worth of food is thrown away each year, of which 39% is in North America and 31% in Europe (Tarabini, 2021), where approximately 87.6 million tons of food is lost or wasted each year (Consiglio dell'Unione Europea, 2020). As to Italy, in 2020, almost two million tons of food have been wasted (Cacciolatti, 2021). So far, from an institutional point of view, there are no measures suitable to effectively reduce the large amount of food waste, especially among family members, even though since 2014 the Minister of Environment has established a dedicated day - February the 5th is the National Food Waste Prevention Day - along with the International Food Waste Day promoted by the United Nations (Tarabini, 2021).

Waste prevention is closely linked to the concept of the “circular economy”, which plays a central role in European policy, including to address the environmental impact of consumption. The Circular Economy Action Plan (European Commission, 2015) clearly states that food waste prevention is a priority area (Hebrok, Heidenstrøm, 2019).

Food waste is a very sensitive issue, a challenge for both the demand and supply sides. So far, the complexity of this issue has hindered the search for sustainable solutions, apart from often short-term and mostly local measures (Ciulli, Kolk, Boe-Lillegraven, 2020). Recently, however, companies have begun to see food recovery as an opportunity, offering possibilities for simultaneous growth in sales and market share and the promotion of sustainable development through business model innovation (Bruno, 2019).

Although food waste is largely blamed on retailers, as Gaiani et al. (2018) suggest, at least in developed countries, food is predominantly discarded at the consumption stage of the supply chain. However, on the consumers side some factors help in preventing waste, such as knowledge and abilities related to meal and food planning (Aktas et al., 2018; Quested et al., 2013), information about proper storage of food, especially the fresh one (Porat et al., 2018), environmental worries (Quested et al., 2013), saving money (Falcone, Imbert, 2017; Quested et al., 2013;), and attitudes or values towards the topic of food waste such as guilt, ethical considerations, strong personal norms (Quested et al., 2013; Schanes, Dobernig, Gözet, 2018). Although, according to literature, there are several other factors encouraging people to waste food, such as, established (bad) habits (Quested et al., 2013), lack of appropriated motivation

in saving food (Quested et al., 2013), concerns about food safety and the expiring date of food (Aschemann-Witzel et al., 2015; Parfitt, Barthel, MacNaughton, 2010), the choice to buy cheap food that somehow let people feel less guilt if it is wasted (Aschemann-Witzel et al., 2015), a scarce planning in what to buy leading in overbuying or in impulse buying (Parfitt, Barthel, MacNaughton, 2010) or even the incapacity to storing food correctly (Schmidt, Matthies, 2018). Such a diversity of drivers suggests that food waste is best understood as the result of a complex interaction of multiple factors and that these factors are closely interrelated.

Contemporary cities represent political and cultural arenas where networks and practices openly oppose traditional food industry dynamics and propose new values (Tucci, 2016). These movements of resistance to the standardised food system are critical in supporting the needs and practices of communities and subverting current patterns of food circulation in urban environments (Pericu, 2020). The importance of creating linkages is recognized in the existing sustainability literature, which argues that the lack of adequate connections between retail outlets and consumers (i.e., supply chain partners) hinders more sustainable food management (Schanes, Dobernig, Gözet, 2018).

In this scenario, according to Ciulli, Kolk, and Boe-Lillegraven (2020), digital platforms can help reduce food waste by creating the necessary connections, particularly by linking retail stores and consumers, which play a critical role in improving the effectiveness of last-minute discounts, thus helping to reduce waste (Mullick et al., 2021). Indeed, Mummah et al. (2017), highlight that apps may present a low-cost, scalable, and effective approach to change consumer behaviour. Nowadays, most consumers have a smartphone, or a tablet and apps are often free, so a high number of consumers can be reached, and they can be selected as the target of relevant communication forms.

The paper aims to highlight the characteristics of the Too Good To Go network, created with the aim of combating food waste, and nowadays worldwide diffused.

The article is divided into three parts: the first is dedicated to the reconstruction of a general framework of the TGTG platform; the second to the identification of the peculiarities of the movement in the Italian context, its ability to activate networks and involving users participating in other sustainable practices, but also its limits in engaging businesses and consumers; the third part is dedicated to the results of the analysis conducted among the users in order to capture the knowledge, the methods of using the tools that have emerged around TGTG, and the reasons for using the platform.

2. Method

The authors applied a qualitative approach using different techniques: for the case history, they used data from the website and the official Facebook page, as well as information obtained through an interview with a privileged witness, a contact person of the Italian TGTG network.

The interview, aimed at reconstructing the characteristics of the network in Italy, analysed the following dimensions: TGTG's contribution in the fight against food waste; the functioning of the network; the objectives achieved in the four pillars (people, companies, schools, policies); the management of the social channels; the difficulties encountered in raising awareness among companies and consumers; the role of institutions in supporting and expanding TGTG; the Italian specificities (the most active territories and companies); the demographics of the most active users; the influences of the Covid 19 pandemic on TGTG; forecasts on the development of TGTG.

Users' study has been conducted through content analysis and narrative interviews. Indeed, to better understand the characteristics of the Italian movement, authors decided to analyse the posts appearing, in the period January 1st to March 31st, 2022, in two of the most numerous groups, one in the North of Italy "Milano e provincia" (7,722 members) and one in the South and Isles, "Catania e dintorni" (6,238 members) (see Table 1). The content analysis was carried out manually and the data have been interpreted following a grounded theory approach (Glaser, 2001), according to the conceptual categories that emerged from the existing literature.

Moreover, the authors, while conducting a research project on the use of second hand and sustainable consumptions apps¹, have also explored knowledge and use of TGTG through online face to face narrative interviews.

3. Too Good To Go in Europe

The Too Good To Go (TGTG) platform, founded in 2015 in Copenhagen, is aimed at building a global anti-waste movement, indeed fighting food waste by inspiring and empowering everyone to work together. The platform connects consumers with small and large stores or businesses whose products would otherwise go unsold and then be discarded. At the end of the day, retailers advertise through the app the presence of one or more "magic boxes" containing products that are near the expiration of their shelf life, which

¹ The 20 interviews have been carried out in March 2022. The sample of two male and 18 female users of the app Vinted was aged between 19 and 61 years, people living in different Italian regions.

consumers will pick up at the store they choose. The content is always a surprise, because it is not possible to predict which products will remain unsold at the end of the day. Booking and payment is done through the application, which using the smartphone’s GPS displays the boxes of nearby retailers, divided by price and category. Usually, prices range from 2.99 to 4.99 euros, generally one third of the products original value as indicated by the retailer.

From Denmark the model spread first to France, Norway, and the United Kingdom, then to Poland, Austria, Switzerland, Portugal, Belgium, and the Netherlands, and now it includes 15 countries.

The movement is based on four pillars: People, Business, Schools, Policy, for which some goals have been defined². As to the first pillar, people, TGTG aims to “inspire” them to take a stand and take concrete actions against waste. Actions include raising awareness of the phenomenon and providing information on how to contribute to waste reduction through daily actions. To do this, TGTG uses its own website and blog, but also social channels (Facebook, Instagram, and Twitter) and the app through which it connects consumers and businesses. As stated on the official website³, the goal of reaching 50 million people has been 100% achieved so far (number of users registered in the app).

As to the second pillar, businesses, TGTG targets restaurants, bakeries, supermarkets, and hotels and has gained 75,000 partners. The goal for businesses is to involve them in reducing waste throughout the life cycle of the product, from production, storage, processing and packaging to retail and consumption.

On the website, it is also possible to track the number of participating companies (as of April 2019): 15,848 restaurants across Europe, with 9,375,193 meals saved, equivalent to 23,438 tons of CO₂ emissions saved. There are 7,805 bakeries with 7,840,955 meals saved, equivalent to 19,602 tons of CO₂ emissions saved. As to supermarkets, there are 6,900 with 5,380,705 meals saved, equivalent to 13,452 tons of CO₂ emissions saved. Finally, the movement involved 1,083 hotels across Europe, with a total of 739,459 meals saved and 1,849 tons of CO₂ emissions.

As for the third pillar, schools, TGTG has so far involved 500 schools through seminars, classes and information sessions on waste and the right suggestions to reduce it.

Finally, as to the last pillar, politics, the goal is to help governments establish policies to reduce food waste along the entire food chain through ad hoc regulations, both at national and international levels. Indeed, TGTG has

² <https://toogoodtogo.it/it/movement>

³ Last checked on 23.02.2022

sought to highlight the link between labelling and waste, which accounts for 10% in Europe.

4. To Good To Go in Italy

In Italy TGTG began its activity in March 2019⁴ involving 60 retailers in the metropolitan city of Milan (Balboni, 2020). The success of the initiative was stalled by the outbreak of the Covid 19 pandemic. As the TGTG speaker explained, the pandemic affected the market especially during its first wave (March-May 2020) imposing the closure of many partners such as restaurants, pizzerias, delis, hotels, etc.

Nevertheless, after this initial standstill, the activity started to grow rapidly, reaching, and even surpassing pre-pandemic levels in the last months of 2020. The steady growth has reached, in 2022, 5.7 million users and 21,384 partners as bars, restaurants, supermarkets, bakeries, and hotels, saving 7 million meals⁵

As of 2022, users and partners are mainly distributed in large cities with the aim of being present throughout the Italian territory. The average age of the users is between 25-40 years and 60% are women. The main partners belong to the independent segment: bakeries, pizzerias, delis, bars, restaurants, sushi, fruits, and vegetables, etc., but there is also no lack of large distributors such as Carrefour, Decathlon and Flying Tiger.

At the base of the anti-waste movement lies the Pact against Food Waste aiming at creating a community of great partners who join TGTG to fight food waste by raising awareness and educating consumers, but also by taking concrete actions that have a real impact on the problem⁶. The pact includes several actions: 1) create a conscious label that more clearly explains and lets consumers be aware of the correct interpretation of the product label; 2) support a conscious company that effectively communicates the company's commitment to food waste to its employees while holding them accountable; 3) educate conscious consumers who disseminate information and raise awareness of the food waste problem; 4) support supermarkets in their fight against waste by sustaining major retailers at the point of sale; 5) promote factories against waste by reducing food waste from products that remain in storage and would otherwise be discarded⁷.

Among other consumer education initiatives, in line with actions carried out at the global level, the movement is particularly committed to raising

⁴ <https://toogoodtogo.it/it/>

⁵ <https://toogoodtogo.it/it/>

⁶ <https://toogoodtogo.it/it/campaign/commitment/commitments>

⁷ <https://toogoodtogo.it/it/campaign/commitment/commitments>

consumer awareness about the lifespan of products. An example of this is the “conscious label” campaign, based on the message “Often well beyond. Smell – Observe – Taste”. It aims to raise awareness of the difference between “to be consumed by” (expiration date) and “preferably to be consumed by” (best before date), which, as the Italian TGTG speaker pointed out, is very subtle and often leads to confusion. In fact, 63% of Italians misunderstand the expiration date and best before dates on food products (Altroconsumo, 2020). This misinformation has a huge impact on our planet: In Europe, 10% of food waste is due to misinterpretation of expiration date information on product labels.⁸

In addition to the app, TGTG managers also use social media (Instagram, Facebook, YouTube) to educate people about the problem of food waste and its consequences, and to share tips and best practices, for preventing food waste, that consumers can use at home.

4.1 The To Good To Go Italian Facebook page

The Italian official Facebook page, created in the first months of 2019⁹ has 591,484 followers. The communication focuses on the theme of changing eating habits and style, comparing an “old” way of consuming food, typical of those who prefer its aesthetic value, with a “new” style, characteristic of consumers who appreciate food beyond aesthetics and have taken advantage of suggestions to use all parts of a food product.

Community members are referred to as “waste warriors”. Most posts aim to raise awareness of issues related to territory and respect for the environment, and to suggest how food can be used beyond its pure purpose (recipes and videos with famous chefs as testimonials).

Beside the official pages, Facebook hosts numerous groups present throughout the national territory (see table 1). These groups are freely managed by citizens and are not directly connected to TGTG. The group administrators, while not working for the platform, try to guide and intervene when users behave in a way that does not comply with the regulation (among other things, it provides for groups to be used exclusively to comment on users' experiences with the TGTG app and to avoid inappropriate language).

In general, the occurrence of TGTG on the national territory is quite fragmented. As Table 1 shows, there are 5 generic groups and different groups belonging to neighbouring areas or to the same city, which in some cases have two or more groups of different size. In these cases, there is a larger group and one with a smaller number of members and with an almost identical name (this

⁸ <https://toogoodtogo.it/it/campaign/best-before>

⁹ The data comes from the transparency information of the Facebook page created with the name of “Too Good To Go Italy”, then modified to “Too Good To Go”.

is the case of the cities of Turin, Rome and the region of Sardinia). However, this overlap has decreased during the period considered, as many of the duplicate groups have disappeared and have been absorbed into the larger group. It should also be noted that some groups disappear, and new ones emerge within a few days, just as some groups absorb large numbers of members, especially in large cities. This is obviously related to the same functioning of Facebook, which can expand its community thanks to the user networks.

FIGURE 1. *Do you know other ways to make the most of these parts of broccoli? (Too Good To Go Facebook Page, February 24 2022).*



Looking now at the distribution on the territory, in the northern area the largest group in terms of participants is “Too Good To Go Milan and its Province” with more than 7,000 members, closely followed by “Too Good To Go Rimini” with more than 2,300 members and “Too Good To Go Veneto” with about 2,400 members.

In the centre, the largest group is “Too Good To Go Rome and Surroundings” with over 11,000 members and “Too Good To Go Latina and Surroundings” with about 4,000 members.

In the South, the most consistent groups are those of “Too Good To Go Bari and Province” and “Too Good To Go Naples and Province” with more than 3,400 and about 2,200 members, respectively.

On the islands, the largest group is “Too Good To Go Catania and Province” with over 6,100 members, followed by the group “Too Good To Go Palermo and Province” with about 2,700 members.

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TABLE 1. *A Too Good To Go Facebooks groups – 31.03.2022¹⁰.*

Area	Number of members	Group type
Generics		
TooGoodToGo	410	Public
TOO GOOD TO GO	211	Private
TooGoodToGo	152	Public
TooGoodToGo	14.652	Public
toogoodtogo	16.788	Public
North West		
Too Good To Go Milano e provincia	7722	Private
Too Good To Go - Monza e Brianza	1.768	Private
Too Good To Go VARESE e provincia	502	Private
To good to go Bergamo e provincia	184	Private
Too Good To Go Pavia e provincia	470	Private
Too Good To Go Piemonte	285	Private
Too Good To Go Torino	639	Public
Too Good To Go – Torino	2.047	Private
Too Good To Go - Liguria	1199	Private
Too Good To Go Genova	117	Public
Too Good To Go Imperia e provincia	834	Private
To Good To Go Novara/Verbania e Vercelli e provincia	215	Private
North East		
Too Good To Go VENETO	2.450	Private
Too Good To Go Verona	147	Private
TooGoodToGo Udine	126	Private
Too Good To Go Bologna	1.118	Private
Too Good To Go – Ferrara e provincia	125	Public
Too Good To Go Cesena e dintorni	1.787	Private
Too Good To Go – Parma e provincia	189	
Centre		
Too Good To Go ROMA e dintorni	11.463	Private
TOO GOOD TO GO ROMA	743	Public
Too Good To Go – RIETI e dintorni	1.604	Private
Too Good To Go - L'ATINA e dintorni	4.240	Private
Too Good To Go Umbria	868	Private
Too Good To Go – Firenze	1202	Private
Too Good To Go Livorno	725	Private
Too Good To Go Prato	268	Private
South		
Too Good To Go Lecce e provincia	314	Public
Too Good To Go Bari e provincia	3.715	Private
Too Good To go - Caserta e provincia	168	Private
Too Good To Go - Napoli e provincia	2.293	Private
Too Good To Go Pescara	1.190	Private
Too Good To Go Chieti	89	Public
Too good to go L'Aquila	38	
Too Good To Go Salerno e provincia	284	Private
Too Good To Go Taranto e provincia	70	Private
Too Good To Go Puglia	374	

¹⁰ The authors chose to consider only groups that officially refer to the TGTG movement or use the official logo.

Islands		
Too Good To Go Catania e dintorni	6.238	Private
Too Good To Go Palermo e provincia	2.832	Private
Too Good To Go Sardegna!	751	Private
TOO GOOD TO GO - SARDEGNA	1.624	Private

In both territories, several companies have joined the TGTG, mainly bakeries and pastry stores, delicatessens, fruit and vegetable stores and some supermarkets, but also stores that sell gluten-free products. Decathlon, Ikea and Tiger have also joined the network with food products that are usually sold in their outlets (in the first case bars and supplements, in the second and third mainly sweets). In both groups there is a good participation of members who, when required by the group rules, follow the purchase through the app, share their experiences, comment on the magic box received and upload the photos of the contents.

5. Facebook groups analysis

Analysis of two of the most numerous Facebook groups over a three-month period reveals some specific categories.

There are a number of factors that impact consumer decision making (Stankevich, 2017), specifically sustainable consumption practices (Maniatis, 2016) that are highly determined by a social context of convenience, habit, value for money, personal health concerns, hedonism, and individual responses to social and institutional circumstances, and most importantly, they are likely resistant to change.

As highlighted by a previous study (Huidobro Giménez, 2019), TGTG's marketing efforts are not targeted and segmented specifically to a green or sustainably conscious consumer niche, but to a broader audience, regardless of their sustainability concerns, which could be driven by different motivations leading to what we define as opportunistic behaviour.

5.1 "Opportunistic behaviours" vs ethic values

According to previous research projects (Huidobro Giménez, 2019), TGTG is a company that promotes and normalizes sustainable waste prevention practices through its marketing efforts, which increases the adoption of sustainable consumption practices among consumers and reduces the negative environmental impact of food waste. The normalization of sustainable consumption practices in a society should lead to the increase of the number of consumers adopting these practices and should let perceive unsustainable consumption practices as "non-normal" (Rettie, Burchell, Barnham, 2014). The

normalization of sustainable practices emerges from the analysis of the posts, as consumers follow the platform without questioning its objective even if led by different motivations. Indeed, the analysis highlights a clear dichotomy between those that can be defined as opportunistic behaviours, that are not intrinsically unethical behaviour (Denegri-Knott, 2006), and more ethical motivations that are more consistent with the intrinsic core values of the movement.

As emerging categories of opportunistic behaviour, it is possible to highlight the concept of savings and/or convenience; the issue of the quality of the products; and the reliability of the retailer.

On the other hand, people embracing the platform's values post about saved food, solidarity and more generally commitment.

Generally, there is a strong focus on the quality, quantity, and variety of products in the box, but not always a high awareness of the purpose of the project. The users who are most aware and focused on fighting food waste are those who are less concerned about the expiration date of food or its variety and base their membership on the idea of actively contributing to the growth of the movement. They are also willing to bring the spirit of the movement back to the community when other members are more inclined to "get a bargain" and forget the main goal of the group.

The convenience variable is the one that comes up most often, an accurate representation of the value of the loot compared to what is spent, and often the request for comfort/comparison with members of the group. Saving money was particularly evident in the pandemic period, in a surprising combination with wasting food. In fact, some authors found that in Italy, the increase in the amount of food purchased by Italian families during the lockdown months did not lead to greater food waste, but rather to a reduction. In fact, Italians cooked and consumed all the food they bought, especially the expensive products, underscoring the role of price in food waste (Pappalardo et al., 2020; Rodgers et al., 2021): people are more likely to throw away cheap food than expensive one.

FIGURE 2. Too Good To Go – Milano e provincia - Coffeshop



Coffee ... 2.99-euro box. A smoothie and a mini fruit salad ... I don't know but I'm not very satisfied. I did the calculations; they sell them for a total of 8.50 euros. I think I will not take it anymore (User TGTG Milan, February 24, 2022).

FIGURE 3. Too Good To Go – Milano e provincia – Pastry shop



Pastry ... Tray with 8 paltry chocolates, 2 marshmallows (hard) and a bag of chocolate powder. Total disappointment (User TGTG Milan, February 25, 2022).

FIGURE 4. *Too Good To Go – Milano e provincial – Fruit and vegetable shop*



My first box at Fratelli Orsero in the vegetable market. Simply top!!! There is also a mango!!! (User TGTG Milan, February 26, 2022).

FIGURE 5. *Too Good To Go – Catania - Delicatessen*



This is when a shopkeeper understands what “too good to go” means ... we took two boxes for €4.99 from the bakery ... 10 fresh cannoli, 2 focaccia, 2 cartocciate, 4 pieces of bread with salami and cheese, 16 small sandwiches with milk, 8 slices of pizza with pistachio and mortadella, it is idle to talk about the freshness of everything and the friendliness of the staff. I REALLY RECOMMEND IT. We have everything for tonight, but it all went to those who do not have a plate tonight. Thank you (User TGTG Catania, January 1, 2022).

Even if consumers understand the true spirit of the platform, there are few posts that really relate to the concept of food savings or the importance of the TGTG concept.

I participate in this initiative not to do business, but to help avoid food waste. Too Good To Go's philosophy should be primarily from the participating stores. (User TGTG Milan, February 16, 2022).

According to a recent study (Cammarelle, Viscecchia, Bimbo, 2021), the need to improve food safety and to reduce the amount of food waste at final stages of the supply chain has fostered a growing interest in the role of the packaging both for retailers and consumers that particularly appreciate initiatives aiming to promote sustainability, for example by fostering the recycling of packaging.

#Pastry shop... I point out a good initiative on their part. The first package they included it, next time if we don't bring the box, they will ask us for a euro. Always in the anti-waste spirit (User, TGTG Milan, February 22, 2022).

Sometimes groups' administrators recall the true spirit of the movement.

REPETITA IUVANT

When we buy boxes, especially in supermarkets, sometimes there are discount stamps (-30/-50%) ... It is not said that in the box there are only things that are about to expire, perhaps they have a dented packaging, so the action is to avoid wasting food that should be thrown away, which is the purpose of TGTG... I recommend avoiding the boxes from the supermarkets, without criticising the choices of others as senseless or otherwise, or assuming that the supermarkets in question are not behaving correctly. Thank you (Group Administrator, TGTG Milan, March 23, 2022).

5.2 The importance of experience

Experience is recognized as a valuable commodity for any consumer because shopping is not viewed as a simple act of purchase (Falk, Campbell, 1997), but as a practice associated with entertainment and/or experiential dimensions. Many authors highlight the importance of experience in food that, according to Hendijani (2016), encompasses heritage, service, food environment, variety, availability, senses, and food ingredients. Moreover, food appears crucial in experiencing local culture (Wijaya et al., 2013). A previous study (van der Haar, Zeinstra, 2019) suggests that users of TGTG were pleasantly surprised by the content of the magic boxes, both in terms of quality

and quantity. And, when the experience was not so positive, most users did not perceive this as a problem. Our analysis points out that members are very active in seeking new experiences, looking for the opportunity to try out new shops/restaurants and new types of products. They request information from other users to try more alternatives and discover new retailers in the vicinity.

Thank you for accepting me, I discovered this beautiful app about how to save food and I got carried away, because I love it! (User, February 7, 2022, Too Good To Go Catania).

It seems that some people use TGTG to try out some merchants at low cost and then decide to return as customers, even regardless of the initiative. This is consistent with the results of other research showing that users return to the store they use through the app, either to pick up magic boxes or to shop for groceries on a regular basis (van der Haar, Zeinstra, 2019).

This confirms one of the characteristics of today’s consumer, oriented towards experimentation and hedonism.

FIGURE 6. *Too Good To Go – Milano e provincial - Bakery*



Genovese focacceria ... farinata disappeared in a second and the rest was excellent too. Friendly staff, I arrived 2 minutes earlier and, in any case, they prepared the box for me. Happy to have found a place relatively close to home with a good focaccia to dip into the cappuccino. I will be back regardless of the box (User TGTG Milan, February 14 2022).

The experience value is often associated with the surprise of the box containing the products. Indeed, according to other research projects, fun and gamification are successful elements of apps able to produce behavioural change (Hamari, Koivisto, Sarsa, 2014; Hoem, 2017).

For many users, it represents the real added value, recalling on the one hand the discovery of the contents of the box (called magic), on the other hand the ability of the retailer to combine the products (sweet and salty, first and second course) and the attention to the customer, who can thus appreciate the composition he has created.

I can highly recommend the bakery Belvedere San Pietro Clarenza. The picture represents less than a third of the box I just picked up, € 3.99. Both sweet and salty, great variety. All good in appearance and taste, even the chocolate sandwiches you see here, very popular (user, TGTG Catania, March 16, 2022).

I did not like that there was only breakfast, usually there should be variety, I thought of some little things ready to eat in the evening, instead I had to cook (user, TGT Catania, March 4, 2022).

5.3 Relationship and trust between retailers and users

According to Ortiz and Harrison (2011), the relationship between retailers and consumers could evolve into a love affair that is stronger than loyalty and trust. This type of relationship is different from the object-consumer relationship because the retailer can initiate the relationship and, in a sense, reciprocate the consumer's love. In fact, the analysis points out the role of some retailers who pay the most attention to the consumer and comply with the spirit of TGTG. They have found a way to expand their customer base, publicise their specialties, build a trusting relationship with community members and, above all, help reduce waste of products they could not sell, which also gives them visibility and makes their customers feel part of a common project. In this way, they implement customer loyalty strategies, probably with the aim of building a special love relationship over time.

FIGURE 7. *Too Good To Go – Catania - Bakery*



Good morning from Bakery ... Hurry up and beware of waste. Thank you to all (Retailer, Too Good To Go Catania, January 5, 2022)¹¹.

FIGURE 8. *Too Good To Go – Catania - Delicatessen*



We are one of the best stores of 2021! Thank you for choosing us and helping us save many meals together (Retailer, TGTG Catania, February 19, 2022).

Conversely, retailers who have not understood the purpose of TGTG and use the app to dispose of expired or spoiled food risk devaluing the initiative and losing the trust of customers.

¹¹ As of March 31, the Facebook group of Milano e provincia does not host retailers' posts.

FIGURE 9. *Too Good To Go – Milano e provincial – Fruit and vegetable shop*



Supermarket ... did not convince me. I prefer to receive less food, but all of it is edible (User TGTG Milan, February 11, 2022).

I understand the meaning of an app against waste. But when you have to throw things away, you are wasting, don't fool people. I wanted to try a new store beside the one I've always been to. Nothing, apart from the pasta, which was edible, I threw everything away (User TGTG Catania, January 16, 2022).

Some users believe it is important to point out that sellers do not always act with respect for the movement and consumers but are mainly driven by profit.

I am NOT satisfied and I will not return. Not so much for the type of food, but for the attitude. The manager (maybe) told the girl that she was preparing the magic box that she was giving me too much food, then I had to go back because they gave me a burrata that expired yesterday (User TGTG Milan, February 16, 2022).

5.4 Looking for a challenge

It is well known in the literature (Bakewell, Mitchell, 2003) that smart shoppers enjoy the challenge of achieving price savings and/or product benefits, especially since price sensitivity has become a dimension that characterises today's lifestyle. Indeed, a quarter of the 611 TGTG users

interviewed by Van der Haar and Zeinstra (2019) chose ‘Scoring’ when asked about the motivations in ordering a box, which means the opportunity to be engaged in the ‘chance-element’ of TGTG and trying to win a game by succeeding to buy a magic box from a popular store. Consistently, TGTG users intercepted by our study are acutely aware of the challenge of grabbing the most coveted box, e.g., the one from the best pastry chain in town.

FIGURE 10. *Too Good To Go – Milano e provincial - Patisserie*



Finally, I did too ... I know that many photos of ... have already been shot, but I share my trophy and at least put a post that actually shows a box, which would then be the purpose of the group. However, the choice was between pastas and a blackberry tart (User, TGTG Milan, January 10, 2022).

The joy of grabbing a long-desired box is even greater if other users seem to be unable to reach the goal.

FIGURE 11. Too Good To Go – Catania – Bakery and fresh pasta shop



I have never been able to get a box here! Are there particular days and hours in which they offer the boxes? (User TGTG Catania, January 28, 2022)

6. Motivations and obstacles in using TGTG

Motivations for using or not using TGTG have been explored through online interviews. According to a previous research project (van der Haar, Zeinstra, 2019), consumers' motivations for using TGTG vary from saving money to reducing food waste to having a surprising experience. Often, these three motivations are interwoven, and respondents cannot choose a dominant one. However, Van der Haar and Zeinstra (2019) highlight that when users have to choose, they cite reducing food waste as the primary motive (35%), followed by the surprise experience (26%), saving money (20%), and being part of a movement (17%).

The data collected from the online interviews highlight that most of the subjects know TGTG, which appears as a useful initiative to access quality food at a lower price, as well as a way to meet the needs of workers who at the end of the day have the opportunity to collect a box full of delicious dishes to bring to the table.

The interviews also confirm the presence of few users who are more aware and motivated by the sustainability driver. These subjects, in fact, are also those who adopt more sustainable practices, including recycling of materials, sustainable mobility or second hand with the aim of giving a new life to objects and clothing.

Among the reasons to stop using TGTG is the low variety of foods included in the boxes. In fact, respondents complain that it could be difficult to

consume large quantities of the same type of food, which in turn would lead to waste. However, as is also evident from research in other contexts (van der Haar and Zeinstra, 2019), wasting food from the Magic Box is not a common practice, and when it does occur, it is associated with preferences for the products included in the box or spoiled food.

7. Conclusions

Food waste at the consumption level is the result of conscious and unconscious aspects. Some of these, such as knowledge about food planning or storage, sustainable thinking, saving, or ethical values, result in avoiding food waste. Instead, other factors, such as low motivation, low knowledge about proper food expiration date management, lack of knowledge about food recombination, or high food storage (van der Haar, Zeinstra, 2019) are barriers to waste prevention.

The problem of food waste is very present in Italy. Food waste is a widespread negative emotional experience. The negative effects of waste are felt most clearly at the economic level, more so than at the environmental level (Ministero delle Politiche Agricole, Agroalimentari, Forestali e del Turismo, Crea-Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria, 2019).

Apps like TGTG help reduce food waste by making it possible to save money and reach a large number of consumers who increasingly use their smartphones for information and shopping. At the same time, TGTG enable the normalization of sustainable consumption practices by presenting these sustainable practices and behaviours as normal.

The achievement of TGTG is summed up in the effective words of the representative of the Italian network:

The TGTG project shows a growing interest in environmental issues and sustainability. Saving a magic box is a simple but concrete gesture towards the environment and the resources used for the production of food, contributing to a more sustainable lifestyle, also in the daily choices.

TGTG is a simple and flexible way to concretely address the problem of food waste, both for consumers and retailers who choose to participate in the application. One of the strengths of TGTG is precisely its ease of use by users and partners, which makes the application accessible and usable by everyone.

The analysis highlights that the TGTG network is very successful in Italy, as the number of members of existing groups has increased within a few months and new groups have been created. The most numerous and active groups are concentrated in large cities, both because they are traditionally more dynamic

than small towns and, presumably, because they host a greater number of people experiencing economic difficulties, a situation exacerbated also by years of pandemic. As the movement's national website confirms, supported by information provided by the Italian referent, the initiatives launched in the various territories have contributed significantly to saving large quantities of food that would otherwise have been wasted.

The app is used by many consumers who document their personal experiences with photos and comments while giving and receiving tips on the best retailers in the area. As Mullick et al. (2021) point out, digital platforms are able to create connections between retail stores and consumers and encourage the latter to search for reduced products at the last minute, allowing retailers to increase revenue by reducing costs associated with food waste.

TGTG Italy shows a specific relational dimension: on the one hand, the community interacting in the Facebook groups has the function of providing practical support to members in the form of feedback on food quality and experiences. On the other hand, the interactions between consumers and retailers often represent added value derived from users' narratives about their relationships with shop employees. The outcome of these interactions contributes to the overall experience in terms of satisfaction or dissatisfaction, which also affects the overall Magic Box score and may lead users to visit a retailer even without the TGTG support.

The growing diffusion of the TGTG movement reinforces Hebrok and Heidenstrøm's (2019) belief that focusing solely on information and awareness campaigns will not yield large-scale results because this strategy does not target important everyday practices that influence the extent of food waste. Indeed, even if consumers are made aware of the issue and know more about it, that does not lead to major changes in practice. This is because consumers are woven into a web of interconnected practices that make up their daily activities, infrastructures, and meanings. This may partly explain the success of initiatives such as TGTG, which intervene precisely in the everyday practices of individuals and intertwine with the various consumption habits of families, who, especially in large cities, are increasingly inclined to resort to convenience and fast food in order to cope with their various daily activities. As already stated, even when users take the initiative for "opportunistic" reasons, they nonetheless contribute to the reduction of food waste by retailers.

In addition to the aspects that contributed to the success of the movement, there are some critical points that are common to both groups considered: 1) a lack of awareness of the true goal of TGTG, users are clearly focused on convenience, a good deal, winning the "coolest" box; 2) a second critical point relates to the preparation of the box itself, which often contains a large amount of food. If, on the one hand, the abundance of food satisfies the preferences of

some users, on the other hand, there is a risk that boxes containing large quantities of food, especially of scarce varieties, may nevertheless lead to food waste, which in this way is only postponed. This waste also remains invisible, hidden in the box sold by the retailer and therefore automatically assumed to be “saved”; 3) moreover, it seems important to ask if the initiative launched with the TGTG app really reaches families and, in general, those who need it most, or if it is not limited to being a tool to know and try the different specialties of retailers in a given neighbourhood; 4) finally, another aspect worth highlighting is that some users still feel a certain resistance to such initiatives. They associate the purchase of the magic box with the need to buy cheap food, typical of those who cannot afford more expensive purchases (Placzek, Ziętara, 2021).

Finally, the authors formulate some suggestions in the form of a “challenge” that the movement must still try to overcome: the need to focus on increasing consumer awareness, better coordination with the supply side, i.e., finding and selecting partners that best fit the movement's vision, and finally, a wider dissemination of TGTG outside the major urban centres (van der Haar, Zeinstra, 2019).

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