



Research article

Evaluation of consumers' purchasing process for organic food products

Alessandro Scuderi¹, Claudio Bellia^{1*}, Vera Teresa Foti¹, Luisa Sturiale² and Giuseppe Timpanaro¹

¹ Department of Agricultural Food and Environment (Di3A) University of Catania, Italy

² Department of Civil Engineering and Architecture (DICAR) University of Catania

* **Correspondence:** Email: c.bellia@unict.it; Tel: +390957580336.

Abstract: This research analyzes consumers' different purchasing attitudes in traditional and on-line markets. Italy's on-line direct selling process for organic farm products is still in its formative phase, and the prospective developments mark an interesting research area, not least because it may represent a tool to integrate the relationship with customers and improve companies' marketing strategies. The research carried out on the direct selling on-line channels allowed the authors to prove a direct and indirect utility for the choice of organic food products. Information obtained with word-of-mouth among consumers seems to be playing an increasingly relevant role in the purchasing process of the virtual community, representing a strong generator of messages and experiences both in virtual and traditional markets. This paper analyzes the behavior of consumers to understand whether it is conditioned more by off-line than on-line channels and which parameters condition the purchasing process. The research confirms that off-line channels for organic products condition the consumers' choices, linked to traditional word-of-mouth as well as to experiential and sensory direct marketing contact with the producer. An inverse behavior was observed with positive conditions that mostly emanate from on-line channels in the process of buying organic products. The on-line purchasing process involves the system of information linked to the product, i.e., the e-community, which allows the product to be shown together with the comments, evaluations, and recommendations of consumers on the net, reducing the effects generated by the packaging and the brand.

Keywords: electronic word-of-mouth; information and communication technology; e-commerce; experiential marketing; fruit and vegetables; organic produce

1. Introduction

The consumption of agri-food products has undergone a profound change in the last century in relation to the evolution of consumption patterns and the needs of society [1–3]. There is a growing personalization in the purchasing and consumption processes, with renewed attention on the price factor, the selection of the places of purchase, and the choice of products. Related to these changes, there has been a reduction in the effect on consumption of “traditional” variables (price and income) and an increase in the influence on consumption by “non-traditional” or “qualitative” variables. The loss of the direct relevance of traditional explanatory factors is, to a large extent, connected to the “quantitative saturation” of individual consumption [2,4–7].

The shift from an “emulative” behavioral model to a “matrix” model, from which we derive segmentation of consumption, is directly related to variables whose field of inquiry pertains to sociology and psychology [6,8–10]. They represent a growing attention to one’s own self, reemphasizing values based on individualism and revitalizing personalization, values that had lost some of their worth in the industrial society, which can be seen as an expression of the manifestation of consumption [11–13].

The customer acquires the good, above all, to make explicit the adherence to a certain system of values of which the company becomes the bearer [14–16]. The company is concerned with understanding the needs of the client, which, in post-industrial society, are attributable to the needs of self-esteem and self-fulfillment, and tries to realize them by not selling goods but by creating an image that the customer can recognize and with which he/she feels in tune. The good, in these cases, represents the mere support to involve the individual on a physical, emotional, intellectual, and even at times a spiritual level [17].

We can highlight two important phenomena: The first concerns the growing interest in the emotional component following empirical evidence that the customer’s behavior in the purchasing process is not solely rational but, above all, emotional.

Consumers are, therefore, increasingly looking for emotions and experiences rather than products that can meet only their primary needs. This requires new forms of marketing alternatives that succeed by acting directly on the senses of the modern consumer to orienting their choices. In this context, sensorial marketing is defined by Mac Filser [18] as “overall variable actions controlled by the producer and/or the distributor to create around the product or the service a specific multisensory atmosphere, through the product’s characteristics, or through its communication, or through its in store environment.” Marketing is reorienting and tending to favor an experiential conception, i.e., exposing the consumer to physical and emotional sensations during the experience with the product, and this approach can be seen as the basis for word-of-mouth.

Today’s consumer no longer believes in traditional marketing, promotions, and advertising, but relies on “word-of-mouth” (WOM) from other consumers [19,20], believing that it is the most credible form of advertising. This may prove to be extremely important for a sector as sensitive as agri-food to direct appropriate marketing actions to reach users and propose an offer that meets their needs [21–23] in addition to representing a useful means of acquiring information. For the modern consumer, the role of sources of information acquires even greater significance and this is even true for products belonging to the category of experience goods, i.e., those that cannot be appreciated before the act of consumption, or even for convenience goods, i.e., products for which the consumer may not appreciate the quality even after consumption [24]. In these cases, in fact, the consumer

faces an increased risk of making incorrect purchase choices, which means that, in situations where it is difficult to appreciate the characteristics of the product *ex ante*, there is an increase in the need for information to decrease the perceived risk [25].

Thus we can perceive the importance of WOM as an information channel (off-line and/or on-line); it is considered by several scholars as one of the most powerful means of communication and one of the main sources of influence in the purchasing behavior of individuals.

WOM has been defined as “an oral, person-to-person communication between a receiver and a communicator, the receiver perceives as non-commercial, relating to brand, product, or service” [1], i.e., an interpersonal communication that is received by the recipient as non-commercial, albeit referring to a brand, product, or service [26]. Despite the different channels through which a person can receive information about a brand or product, interpersonal communication, representing a marketing channel managed by the consumer, is perceived as more reliable and credible than promotional and advertising marketing that is issued and managed by companies [1,19].

Traditional WOM is described as a “fleeting” phenomenon, which disappears as soon as it is emitted, as it appears spontaneously and then fades away. This characteristic is lost in the digital age, in which WOM does not disappear instantly and is not necessarily spontaneous. In fact, the non-commercial connotation of the communicator cannot always be perceived or whether he/she is a real consumer. For these reasons, the internet has contributed to changing the definition of WOM and the way in which marketing experts manage this important tool of the marketing mix [26–30].

The transition from the WOM electronic WOM (e-WOM), or word-of-mouse, began in the 1990s, “but it is only in the last decade that this topic is tackled at an academic and study level in a marketing optics” [31]. Although it maintains the characteristics of traditional WOM, e-WOM shows some peculiarities and, therefore, existing theories for traditional WOM may be inappropriate to describe the phenomena of e-WOM and its influence on the consumer. First, it is necessary to point out that e-WOM represents most on-line interactions between consumers and can take place between people who do not know each other or who have established relationships in the virtual environment and yet can remain anonymous.

Moreover, an aspect that in some cases leads to more attention being paid to e-WOM rather than WOM is the written form of on-line, asynchronous information, which allows it to be archived, compared, and available for a very long time [32,33].

Another factor contributing to the transition from the WOM to e-WOM is the network of interactions that can be created among consumers in the virtual environment (a network the size of which would be difficult to achieve in a traditional environment) that triggers feedback mechanisms related to products, experiences, and relationships, while costing very little and making the most of the bidirectional communication capacity of on-line platforms [17,34–37].

There are four aspects that should be considered in relation to WOM in the virtual environment and, more specifically, in virtual communities pertaining to the agri-food sector, in order to direct appropriate marketing actions to reach users and propose an offer that meets their needs [20,30]:

- (1) “*Narrative characters*”: Refers to the personal stories and characteristics of the people participating in a community rather than a blog, but also reflects the way in which the consumer wants to appear before the members of the group.
- (2) “*Communication forum*”: The place where communication (WOM) takes place, which can vary (forums vs other platforms, social networks vs blogs, etc.).
- (3) “*Communal norms*”: The rules that govern the communication, transmission, and reception of a

message and its meaning. They vary according to the type of community, the size, type of product, and service or brand around which these communities are created, as well as the interests and social and political orientations of the members.

(4) “*Marketing promotion elements*”: Promotional characteristics of a marketing campaign, which vary depending on the type of product or service, the objectives set, and the originality or non-conventionality of the campaign.

These four factors contribute to alter the nature of the WOM message (WOMM), or the “marketing applied to WOM,” and influence its expression, its meaning, and the way in which it is received by the interlocutors [9,10]. Ultimately, WOM is particularly significant within the virtual world, providing various ways for consumers to share their opinions, preferences, and experiences, while also offering opportunities for agri-food companies to gain competitive advantage through WOMM [29]. For this reason, it is necessary to understand whether this tool adopted in the virtual environment is effective. What are the means in which the exchange of information between consumers takes place, and how they influence the choice of purchase?

The research analyzes the evolving purchase process for organic agri-food products and how this can be influenced by off-line and on-line WOM.

2. Materials and methods

2.1. The on-line scenario of organic agri-food products in Italy

Globally, the value of the retail e-commerce market in 2017 was estimated at US \$ 2290 billion, 23.2% more than the previous year and equal to 10% of the total value of retail sales (+ 1.3% compared to the previous year). It is assumed that the share of total retail sales will increase, reaching 16% in 2021, representing US \$4479 billion according to the data of Emarketer 2016 Worldwide E-Commerce Report.

The value of Italian e-commerce had an average annual growth rate of 23% between 2007 and 2017 but, in the same period, the value has increased more than sevenfold (from €4.9 billion in 2007 to €35.1 billion in 2017), with an increase of 19% from 2016 to 2017. The digital economy is thus growing at considerably faster pace than the real one [38]. Italian internet users seem to be web users, demonstrating maturity and more confident characteristics for this channel. In 2017, the number of Italian web shoppers, i.e., consumers who had made at least one on-line purchase in the year, grew by 7.2% from the previous year to reach 19.3 million, equal to about 62.0% of internet users. In 2017, there were 12.9 million frequent on-line shoppers in Italy, who spent on average €1382 over the year. The 6.1 million infrequent on-line shoppers spent on average €290 per year. The report also showed that people between 35 and 44 years of age were the largest group shopping on-line, predominantly using smartphones for this activity.

There are, however, differences between diverse product sectors. Tourism and consumer electronics have traditionally been important in Italian e-commerce in terms of services and products, respectively. But today there are many product categories that make up the on-line shopping basket and the composition (by 2017) is as follows: tourism (33.6%); computer and electronics (12.3%); clothing (9.0%); insurance (5.8%); publishing (4.0%); furnishings and home living (3.0%); and food and grocery (2.7%).

The contribution of emerging sectors (food and grocery, furniture and home living, beauty, and

toys) is becoming increasingly important, with €0.95 billion in value and growing at rates ranging between 20–30% for the sectors expected to record the highest growth rates in the future. Food and grocery is one of the sectors that today is generating more interest in the B2C e-commerce landscape in Italy, both because of the enormous unfulfilled potential and because of the turmoil shown in the offer in the last two years, with the forecast that, in 2018, there will be growth of 43%.

These data, on the one hand, point to the still limited use of e-commerce in the Italian agri-food sector, while on the other hand highlight a huge area for potential growth on the basis of what is already happening in other European countries, such as France, the UK, and Germany, as well as the USA and Japan.

Italy is trying to fill the gap in the agri-food sector and especially in the fresh produce sector. The offer has increased in all areas, supported by innovative marketing methods, very often linked to the idea of producers and territory.

The new frontier of e-commerce for agri-food products, and especially organic fresh produce, is represented by the integration of the physical and virtual worlds, with marketplace examples that in recent years have developed new forms of multichannel integration, in which the physical environment of the store has been integrated into the digital ecosystem [23].

The traditional physical sales space and the one dedicated to customer care are expected to shrink, leaving more physical space dedicated to delivering products purchased on-line (according to the “pick & collect” model) and the “experimental” physical space, aimed at creating a relationship with the client (such as “experiential rooms”). They will also soon be able to take on other physical space functions, including the creation of on-line showroom products/services, or “temporary experimental” spaces [39–42].

The delivery of products purchased on-line is one of the most interesting challenges of the future of e-commerce, especially for fresh agricultural products: There is the possibility of delivering to alternative places (either automated, like lockers, or manned by human personnel) that are open 24 hours a day and to which customers can be directed when notified of delivery. To date, 94.0% of deliveries take place at home or in the office, while only 6.0% are collected in a designated place [43].

In Italy there were 16,000 companies involved in e-commerce in 2016, and this is expected to reach 50,000 in 2025. In the food sector, e-commerce is slowly beginning to close the gap with other European countries. This is thanks to the growth of local players, but especially the arrival of international players that have entered the market through acquisitions. Just Eat for example, a London-based company, has acquired Click and Eat in Milan, DeliveRex in Rome, as well as HelloFood and PizzaBo [44].

Therefore, we are developing e-commerce models in Italy where virtual and physical space is integrated, even for fresh agricultural products. This particularly involves the on-line to off-line (O2O) channel, alongside the well-known “click and mortar” model.

In these multichannel and customer-centric approaches, mobile will become increasingly crucial. Mobile has generated an ecosystem that enables increasingly large portions of the economy and helps to break down the digital divide. The funds dedicated by companies and Public administration (PA) for the development of mobile solutions to support business processes has grown by 24.0% and those oriented to marketing and communication on smartphones and tablets by 41.0%. The development of mobile commerce and mobile payment will bring the total value of the mobile economy to over €37 billion in 2017 (2.3% of GDP).

Agri-food enterprises will have to consider the mobile channel as a potentiator and amplifier at

other points of contact throughout all stages of the buying process. All of this requires a transformation of business models into a logic of multichannel transformation, mobile marketing, and service.

2.2. Methods

The analysis was carried out in 2017 for organic agri-food companies using the e-commerce channel. It aims to investigate the interaction among web consumers, measuring consumers' intention to tell others about their experience concerning a product, and the intention to buy using WOM [31,35].

The objective of this study is to verify how this may vary, according to the opinion of consumers regarding their referrals to others, i.e., whether positive, negative, or neutral [40].

A questionnaire with ten questions was used to measure purchase intentions. A total of 500 followers of several companies with a Facebook account were interviewed.

The analysis aimed to investigate consumers' intention to tell others about their experiences concerning an organic agri-food product and the relative intention to buy on the basis of suggestions or comments from other consumers [27,45,46]. The first phase focused on factors driving consumers of organic agri-food to on-line channels (service, country of origin, quality, price) in order to better understand the activity of consumers as a source of messages that integrate or replace those of the company itself. Note again that it is important to differentiate between the intention to talk about a personal experience with friends in a traditional (off-line) environment as opposed to with unknown people in (on-line) virtual communities via e-WOM [29,47].

The second phase of the survey aimed to identify purchasing intentions and the influence of on-line and off-line sales channels for organic products. Its main aim was to establish exactly how the suggestions and comments, and whether they came from off-line or on-line sources, affected the final choice to look for a specific product (fruit and vegetables, wine and oil, cheese, processed meat, and canned food) [48].

The relationship between one or more independent variables (x_1, x_2, \dots, x_n) and one dependent variable (y) was random. The supply side was given three scenarios characterized by three experiences (positive, negative, neutral) for organic products.

Each interviewee answered questions for one product category, while the value of the experience was randomized. On the demand side, each interviewee answered one question and the experimental design was built on aligning the three value conditions of the on-line experience with the three off-line ones (awful, ok, or great) [35]. It was possible then to explore the existence or not of a relation among the variables observed as well as the strength of the relation among the dimensions, that is, its statistical significance.

This study utilized the R Stats Package for data analysis and to verify the hypotheses. Estimation of parameters was carried out by minimizing the distances between data included in the model and those observed. Functions of estimation were different; linear mode (lm) was used to study the relation between a dependent variable (y) and a series of independent ones (x_1, x_2, \dots, x_n) in order to understand the impact of such variables on the subject under examination. Concerning the "supply side," the dependent variable y was the probability to tell others about a personal experience concerning a product, both to friends in an off-line context, and to on-line communities.

This study also allowed the authors to understand the capacity of this model to represent the

phenomenon under examination as realistically as possible by reading the coefficients of the independent variables, i.e., the variation of the dependent variable according to the varying of the independent ones.

This model highlighted the logic scheme of variables that were related with the dependent variable BUY-WOM prob, i.e., the probability of telling others about the personal experience of the purchase. BUY-WOM prob was a function of a series of independent variables, such as PRODUCT CATEGORY, i.e., the category of products that in this case were five, and the experience value, POS (positive), NEG (negative), or MED (neutral).

Hereafter is the base model with all the variables analyzed:

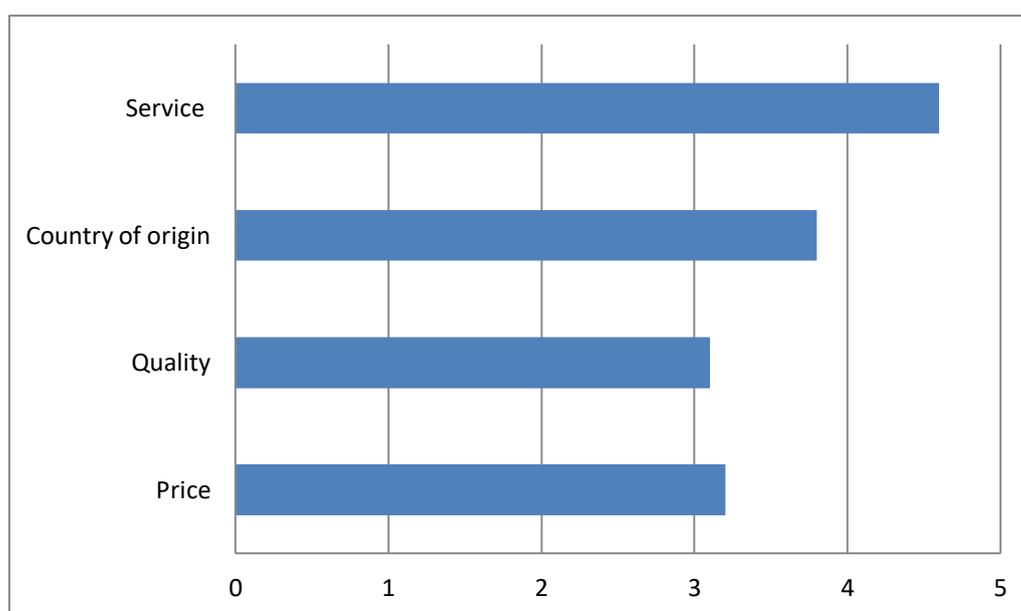
$$[\text{SOCIAL prob}_i = \beta_0 + \beta_1\text{PRODUCT} + \beta_2\text{POS} + \beta_3\text{NEG} + \beta_4\text{MED} + \beta_5\text{POST}_i + \beta_6\text{WHY}_i + \epsilon_i] \quad (1)$$

where “SOCIAL prob_i” is the probability of reporting to others about the experience of a purchase, where *i* stands for individual, PRODUCT for the typology of product, POS for the positive experience, NEG for the negative experience, MED for the neutral experience, POST for the on-line posting activity by interviewees, WHY for the motivation of the on-line posting activity, and, finally, ϵ_i is the error of prediction/residue.

3. Results and discussion

This research aims to analyze the evolution of the purchase process for organic agri-food products and the decisive factors influencing the buying process.

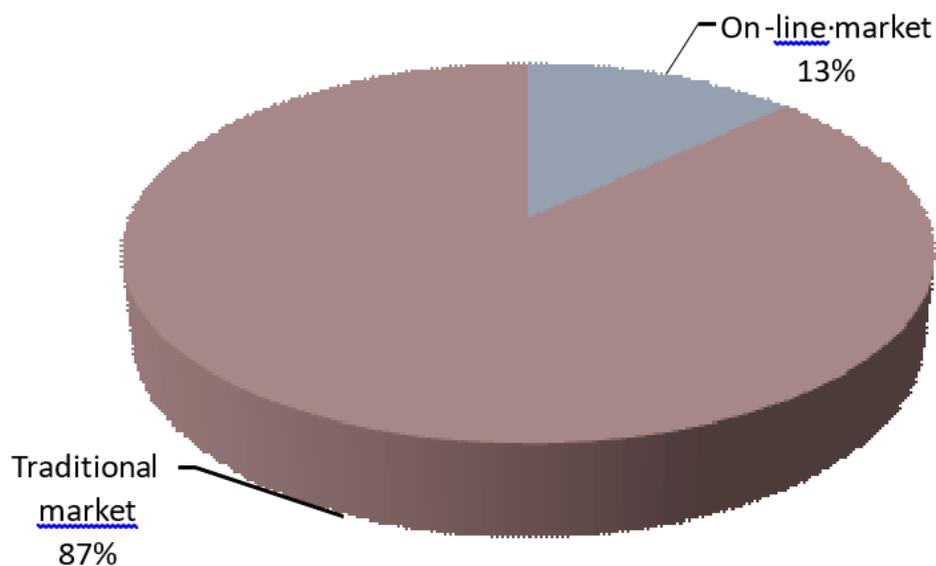
The results of the first phase showed that the main factor driving consumers of organic agri-food to on-line channels (Figure 1) was service, which was a discriminating factor in the choice of purchase for organic agri-food products as a sum of services related to the comfort of payment, purchase, and delivery of the product.



*Note: Source: Direct survey.

Figure 1. Factors driving consumers of organic agri-food to on-line channels.

We then asked which shopping channel they preferred, assuming the same quality, price, country of origin, and packaging of organic agri-food products. It turns out that 87% of consumers interviewed still preferred the traditional channel; they saw buying fruit and vegetables as part of their normal shopping habits they see and included it in the act of daily food expenditure made through traditional channels (supermarket, local shop, local market). However, 13% represents a significant amount of people who preferred on-line channels, which shows that current behavioral barriers are being overcome, confirming that there are growing spaces for appealing organic agri-food on-line markets (Figure 2).

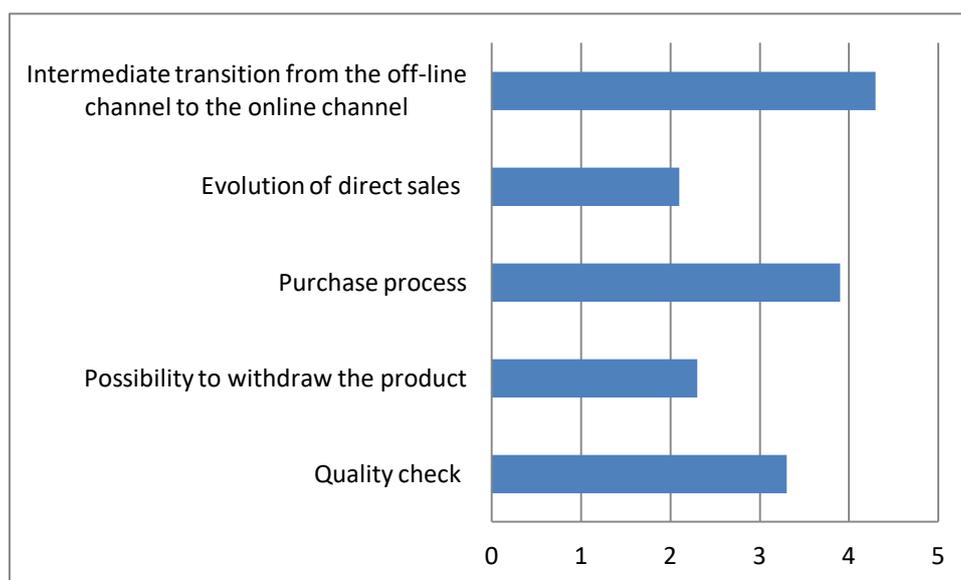


*Note: Source: Direct survey.

Figure 2. Organic agri-food channel preference index, assuming the same quality, price, packaging, and origin.

Respondents were asked whether having a physical point of sale for an on-line store would influence their purchase decision and, if so, why. The results (Figure 3) showed that a physical selling point for the e-commerce channel (and the option not to buy) would be a major strength for the consumer as it would represent a transition from off-line to on-line, a material element of the purchase process, the possibility of not buying the product, as well as a contact point both to verify the quality and to see products from farmers' markets (without having to travel to them).

Linear regression analysis for the "supply side" is summarized in Tables 1 and 2. Respondents' willingness to share their experience of the purchase off-line (Table 1) and on-line (Table 2), as well as their reasons for looking for a specific product (fruit and vegetables, wine and oil, cheese, processed meat, and canned food) are presented.



*Note: Source: Direct survey.

Figure 3. The presence of a traditional store to complement the on-line site can guide consumer choices for organic agri-food products.

Table 1. Estimated structural parameters for the sample concerning the will to share traditional BUY-WOM for organic agri-food products (off-line).

	Estimate	Std. Error	t value	Pr (> t)
(Intercept)	79.2586	6.4792	6.581	0.0072660
Meg	-13.5237	3,6897	-4.948	0.0518760
Pos	21.5471	1.6361	5.428	0.0325810
Fruit and vegetables	13.2573	2.4587	1.258	0.0081257
Wine and oil	10.5698	2.9852	3.625	0.0042190
Cheese	12.3271	2.4273	2.873	0.0056973
Processed meat	12.2195	3.8258	3.715	0.0008120
Canned food	10.7589	2.2741	3.587	0.0005874

*Note: Source: Direct survey.

Tables 1 and 2 show the coefficients of the different variables chosen to verify their possible influence on the dependent variable, or their willingness to tell others about their personal experience of the purchase, which are measured in percentage terms. Specifically, there was a significant statistical link for the product category and the relative willingness to tell others about their purchase experience (fruit and vegetables, wine and oil, cheese, processed meat, and canned food).

Considering the variables that referred to the value of the purchase experience (Pos, and Med) in the traditional market (off-line) all categories, except for fruit and vegetables, which was not significant on-line, showed a significant and positive coefficient for the willingness to share BUY-e-WOM in each category.

Another aspect that was considered in the different models of regression adopted for the analysis of the supply side was the possible impact of the on-line posting activity. Posting comments and reviews in the virtual environment in different communities regarding the product, on the

willingness to tell others about their personal experiences both on-line and off-line. A significant relationship was noted for the Pos variable, exclusively for the BUY-e-WOM of the virtual store, while no significant link was found between on-line posting activity and off-line BUY-WOM activity.

Table 2. Estimated structural parameters for the sample concerning the will to spread BUY-e-WOM of organic agri-food products (on-line).

	Estimate	Std. Error	t value	Pr (> t)
(Intercept)	58.3894	6.3128	3.258	0.006287
Med	-17.3894	3.6381	-3.257	0.058739
Pos	19.2587	2.9872	4.958	0.078512
Fruit and vegetables	3.2567	3.2347	1,027	0.000639
Wine and oil	22.7854	3.7854	5.754	0.008759
Cheese	11.6987	2.8136	4.237	0.009871
Processed meat	12.4243	5.2758	4.857	0.005871
Canned food	13.1157	3.9784	3.001	0.003987

*Note: Source: Direct survey.

Respondents were also specifically asked what pushed them to share their purchase experience. Six reasons were proposed in the multiple-choice question:

- Why 1: You feel free to say what you really think about the product.
- Why 2: You can share your experience to a wide range of people.
- Why 3: You wish to be recognized by others for your knowledge about the experience/product.
- Why 4: You get paid/win a reward/gift if you post your review.
- Why 5: You want the company to know what you think about its product/brand.
- Why 6: Other.

It emerged that the main motivation for the posting activity was “why3,” followed by “why2.” The third justification for undertaking the posting activity was to feel free to tell others one’s own thoughts about a product/service anonymously (“why1”).

Next, let us consider the series of regression models related to the opinions deriving from the traditional off-line environment and the on-line context of the possible impact they may have had on the intention to buy of consumers that received such information.

The first aim was that of verifying the existence of a significant statistical link among the different opinions, suggestions, and comments relative to a product proposed to the interviewees and the willingness to purchase it. Both off-line opinions and on-line reviews were considered. Off-line opinions had dummy variables [off_med (off-line opinion with mediocre value), off_pos (off-line opinion with positive value)]. On-line opinions had two dummy variables [on_med (on-line opinion with mediocre value) and on_pos (on-line opinion with positive value)].

Such relations were significant with the dependent variable concerning the category of opinions with a positive value, whether they derived from a traditional environment and from an on-line context. However, the relations among all the other opinion categories and the dependent variable were statistically significant, confirming then the lack of correlation between the two dimensions. A positive score for the relation showed a potential direct relation, so the intention to buy may rise for interviewee receiving more information.

This analysis shows the possible influence of the information deriving from the two cases, and above all understanding whether the value of such information “weighted” differently on the purchase intention. As it may be observed from Table 3, there is a statistically significant link for a combination of information, that is, whether the information deriving from the on-line context and the traditional environment were both positive.

Table 3. Estimated structural parameters of opinions deriving from the traditional (off_med, off_pos) and virtual (on_med, on_pos) and how they affect consumers on their intention to buy (buy_prob).

	Estimate	Std. Error	t value	Pr (> t)
(Intercept)	24.721	8.259	1.126	0.028871
off_med	5.684	4.783	1.325	0.251643
off_pos	11.051	5.234	2.658	0.013898
on_med	5.034	4.279	1.239	0.252321
on_pos	16.297	4.721	3.527	0.000705
no.rev	6.895	6.381	1.358	0.317370
POST	4.398	1.369	2.381	0.000715

*Note: Source: Direct survey.

Finally, a positive relation of the POST variable was found, that is to say the activity of publishing online reviews by the respondents induces the consumer to purchase the product both online and mainly off-line, with a integration between the two sales channels, becoming the first source of information and the second the place where product to be purchased. More specifically, there is a significant positive link between the positive experience (POS) and the dependent variable SOCIAL prob, though with a different intensity for the male and female sample and the kind of social network it is destined for.

The opinions from other consumers regarding organic agri-food products have a different impact on consumers’ intention to buy depending on whether they come from the on-line or off-line environment. The impact on the intent to buy from information from on-line and off-line environments varies according to the value of such opinions (positive, negative, neutral) is significant only if both opinions (on- and off-line) about a product are positive. In the case of negative opinions, the off-line channel prevails, even in the presence of positive on-line opinions. The results show that the impact on purchase intent is mainly from the off-line channel, but on-line comments have a meaning as a source of information, although they are not decisive in the final purchase choices.

Based on the results collected and recent trends, it is reasonable to assume that in the coming years there will be a growing on-line demand for organic agri-food products.

According to several pieces of research, the success factors are:

- *Shopper convenience*: On-line shopping saves time, reduces the need to make a trip to the store, and carry heavy loads.
- *Increased internet usage*: Including usage of mobile and tablet devices for on-line shopping.
- *Omni channel growth*: The complete integration of stores, e-commerce, mobile apps, and social media, which will deepen consumer experiences.
- *Changes in purchase behavior*: Consumers making bulk purchases on-line and using off-line stores to “top-up” on a daily basis.

- *Demand for organic products through on-line channels*: [49].
- *Growth in “click and collect”*: This will increase consumer participation in the on-line sales channel.

4. Conclusions

The direct evaluation of consumers' behavior has demonstrated its utility for organic agri-food products in leading towards an on-line communication strategy [47]. This research has allowed us to understand the impact of social media through consumers' e-WOM and WOM on others' purchase decisions, and also how such experience, relative to the power of the messages in the two considered environments, affects the purchase decisions differently with experiential and sensory marketing strategies [50] and direct interaction with the producer [6,48,49].

On-line commerce changed consumers' strategy and the way they receive their purchases. Consumers may start to shop for an item on-line, browsing different products and brands, finding the right style and the right price, but they may well complete their purchase in a traditional store, deciding that they want to touch and feel it just to be sure or because they want immediate gratification [3,17,21,46]. The experience needs to be seamless and connected; consumers need to be able to see their purchases [5].

For organic agri-food products, the new supply chain, including stores on-line, allows more effective responses to those consumers who prefer either “click & collect,” while also enabling same-day delivery to their homes. The stores create an opportunity, especially for fresh fruit and vegetables, to enhance the customer experience and delight shoppers, encouraging them to coming back time and time again [40,51–53].

Food is a key sector for e-commerce, with potential for growth in the next few years of 40–50% in turnover, and organic agri-food products have the major growth potential. According to various surveys, food is expected to become the most important part of e-commerce in the next ten years worldwide [9].

The paper shows that consumers of organic agri-food products still base their acquisitions on the values of the traditional market, but observe with interest what is happening in the on-line market. Based on the evolution of ICT consumption models and technology platforms that will be available in the coming years, the sale of organic agri-food products through on-line channels will be an area of significant growth [24,54,55].

Consumers use on-line channels to get closer to the product and for the ease of acquiring real information about its characteristics and price, although, in the cases observed, only a limited percentage carry out the purchase directly, even if it takes longer. In fact, for convenience goods, consumers actively seek information using a plurality of information sources. For this reason, these sources have a great influence based on personal information such as WOM, whether off-line or on-line. On-line channels utilize experiential marketing strategies, which in some cases lead to purchases via the on-line channel and in others via the off-line channel, by activating sensorial marketing strategies for direct contact with the product. Through on-line channels, such as e-WOM, it is important to utilize sensory marketing that can arouse strong and engaging emotions, which may push consumers to purchase. In this regard, the cases of on-line sales are very interesting in which “experiencing” the places of production, production processes, and giving an opportunity to interact with the producer (e.g., video or on-line chat) [24,56] are activated conditions that seem to return to the real environment, deceiving the consumer in to feeling that they are in those places. This scenario allows the activation of product selection processes, through the sensation of direct contact with the producer, reproducing, in a virtual

way, smells, tastes, and colors, which can be seen as the new frontier of sensory marketing, a perhaps surreal condition but one to which we should become accustomed in the near future [24,57].

Conflict of interest

The authors declare no conflict of interest.

References

1. Arndt J (1986) Paradigms in consumer research: A review of perspectives and approaches, *Eur J Mark* 20: 23–40.
2. Baumgartner H (2010) Bibliometric reflections on the history of consumer research, *J Consum Psychol* 20: 233–238.
3. Fabris G (2003) *Il nuovo consumatore: Verso il postmoderno*, Franco Angeli, Milano.
4. Amhed SA, D’astous A, El Adraoui M (1994) Country-of-origin effects on purchase managers’ product perceptions. *Ind Mark Manage* 23: 323–332.
5. Brunori G, Rossi A, Guidi F (2011) On the New Social Relations around and beyond Food. Analysing Consumers’ Role and Action in Gruppi di Acquisto Solidale (Solidarity Purchasing Groups). *Sociologia Ruralis* 52.
6. Altamore L, Ingrassia M, Chironi S, et al. (2018) Pasta experience: Eating with the five senses-A pilot study. *AIMS Agri Food* 3: 493–520.
7. Rungsaran W, Pappalardo G, Canavari M, et al. (2015) Disponibilità a pagare per l’acquisto di alimenti funzionali: Evidenze da un esperimento di scelta non-ipotetico, *Rivista di Economia Agraria*, Anno LXX 3: 327–344.
8. Bond JK, Thilmany D, Bond C (2009) What influences consumer choice of fresh produce purchase location? *J Agri Appl Econ* 41: 61–74.
9. Scuderi A, Sturiale L, Timpanaro G (2015) The importance of “origin” for on line agri-food products. *Quality Access Success* 16: 260–266.
10. Wang C, Zhang P (2012) The evolution of social commerce: An examination from the people, business, technology, and information perspective. *Commun Assoc Inf Syst* 31: 105–127.
11. Brush GJ, McIntosh D (2010) Factors influencing e-marketplace adoption in agricultural micro-enterprises. *Int J Electron Bus* 8: 405–432.
12. Castaldo S, Botti S (1999) La dimensione emozionale dello shopping. Una ricerca esplorativa sul ruolo del punto di vendita. *Econ Manage* 1: 17–37.
13. Verdouw CN, Vucic N, Sundmaeker H, et al. (2013) Future internet as a driver for virtualization, connectivity and intelligence of agri-food supply chain networks. *J Food Syst Dyn* 4: 261–272.
14. Erikson GM, Johansson JK, Chao P (1984) Images variables in multi-attribute product evaluations: Country of origin effects. *J Consum Res* 11: 694–99.
15. Holloway L, Kneafsey M (2004) Producing-consuming food: Closeness, connectedness and rurality in four alternative food networks, In: Holloway L, Kneafsey M, *Geographies Rural Cultures and Societies*, Ashgate, London.
16. Kumar V, Rajan B (2012) Social coupons as a marketing strategy: A multifaceted perspective. *J Academy Mark Sci* 40: 120–136.

17. Fritz M, Hausen T, Schiefer G (2004) Development and development directions of electronic trade platforms in US and European agri-food market: Impact on sector organization. *Int food Agribusiness Manage Rev* 7: 1–21.
18. Filser M (2002) Le marketing de la production d'expérience: Statut théorique et implications managériales. *Decis Mark* 28: 43–52.
19. Brown J, Broderick AJ, Lee N (2007) Word of Mouth communication within on-line communities: Conceptualizing the on-line social network. *J Interact Mark*: 21.
20. Nail J (2005) What's the Buzz on Word-of-Mouth marketing? Social computing and consumer control put momentum, *Viral Mark*: 3.
21. Groothuist A, Gabriner R (2016) Marketplaces. Available from: <http://www.eucommercewiki.org>
22. Hammond A, Paul J (2006) A new model for rural connectivity, World Resources Institute, Development Thought Enterprise.
23. Lehmann RJ, Reiche R, Schiefer G (2012) Future internet and the agri-food sector: State of the art in literature research. *Comput Electron Agri* 89: 158–174.
24. Fountas S, Carli G, Sørensen CG, et al. (2015) Farm management information systems: Current situation and future perspectives. *Comput Electron Agri* 115: 40–50.
25. Iuliana-Raluca G (2012) Word-of-mouth communication: A theoretical review. *Market Manage Innovations* 1: 132–139.
26. Godes D, Mayzlin D (2004) Using On-line Conversations to Study Word-of-Mouth Communication. *Mark Sci* 23: 545.
27. Huang Z, Benyoucef M (2013) From e-commerce to social commerce: A close look at design features. *Electron Commerce Res Appl* 12: 246–259.
28. Kotler P, Kartajaya H, Setiawan I (2010) Marketing 3.0, dal prodotto al cliente, all'anima. *Il Sole 24 ORE*, Milano.
29. Kozinets RV, de Valck K, Wojnicki AC, et al. (2010) Networked narratives: Understanding Word-of-Mouth Marketing in On-line Communities. *J Mark* 74: 74.
30. Misner IR (1999) *The World's Best Known Marketing Secret: Building your business with Word-of-Mouth marketing*, 2 Eds. Austin: Bard Press.
31. Hung KH, Li SY (2007) The influence of eWOM on virtual consumer communities: Social capital, consumer learning, and behavioral outcomes. *J Advertising Res* 47: 485.
32. Neilson LC, Madill J, Haines jr, et al. (2010) The development of ebusiness in wine industry SMEs: An international perspective. *Int J Electronic Business* 8: 126–147.
33. Pitt L, Berthon P, Plangger K, et al. (2012) Marketing meets web 2.0, social media and creative consumers implications for international marketing strategy. *Business Horizons* 55: 261–271.
34. Schmitt BH (1999) *Experiential marketing*, New York: The Free Press.
35. Scuderi A, Sturiale L (2014) Analysis of social network applications for organic agri-food products. *Int J Agri Resour, Governance Ecol* 10: 176–189.
36. Secondulfo D (2012) The three consumer profiles in Italy. *Ital Sociol Rev* 2: 125–136.
37. Stern B (2013) A revised model for advertising: Multiple dimensions of the source, the message, and the recipient. *J Advertising* 23: 5–16.
38. Netcomm (2018) Netcomm Global B2C Ecommerce Report 2016, Available from: https://www.consozionetcomm.it/kdocs/523625/Global_B2C_Ecommerce_Report_2018_Italy_Light_version.pdf.

39. Solima L (2010) Social Network: Verso un nuovo paradigma per la valorizzazione della domanda culturale. *Sinergie* 82: 47–74.
40. Sturiale L, Scuderi A (2016) The digital economy: New e-business strategies for food Italian system. *Int J Electron Mark Retailing* 7: 287–310.
41. Tudisca S, Di Trapani AM, Sgroi F, et al. (2014) Role of alternative food networks in Sicilian farms. *Int J Entrepreneurship Small Bus* 22: 50–63.
42. Warren MF (2002) Digital divide and adoption of information and communication technologies in the UK farm sector. *Int J Inf Technol Manage* 1: 385–405.
43. UNATA (2017) The 2017 Grocery e-commerce Forecast. The Time is Now for eGrocery. Available from: <http://www.unata.com>.
44. Casaleggio Associati (2018) E-commerce in Italia 2017. Milano.
45. Hanna R, Rohm A, Crittenden VL (2011) We're all connected: The power of the social media ecosystem. *Bus Horiz* 54: 265–273.
46. Fait M, Iazzi A, Trio O, et al (2013) Social Web Communication and CRM in the marketing strategies of wine enterprises. *J Econ Behavior* 3: 103–116.
47. Busalim AH, Che Hussin, Razak Ab (2016) Understanding social commerce: A systematic literature review and directions for further research. *Int J Inf Manage* 36: 1075–1088.
48. Chadwick R (2017) US shoppers still prefer to make most purchases In-Store. Available from: <http://www.emarketer.com>.
49. Sturiale L, Timpanaro G, La Via G (2017) The on-line sales models of fresh fruit and vegetables: Opportunities and limits for typical Italian products. *Quality Access Success* 18: 444–451.
50. Pine Ii BJ, Gilmore JH (1999) The experience economy. Work is theatre & every business a stage, *Harvard Business School Press*.
51. Scuderi A, Foti VT, Timpanaro G, et al. (2016) Economic and environmental analysis of organic early potatoes. *Acta Horti* 1142: 193–200.
52. Timpanaro G, Bellia C, Foti VT (2014) Horticultural agro-biodiversity and potential conservation: Case study in Sicily. *Quality Access Success* 15: 230–235.
53. Bellia C, Aderno C, Allegra V (2015) Economic sustainability of a niche supply chain: The case of maletto strawberry. *Quality Access Success* 16: 47–55.
54. Galati A, Schimmenti E, Ascianto A, et al. (2013) The role of information and communication technologies and logistics organisation in the economic performance of Sicilian fruit and vegetable enterprises. *Int J Bus Globalisation* 10: 185–193.
55. Bryła P (2018) Organic food online shopping in Poland. *British Food J* 120: 1015–1027.
56. Smith A (2003) Transforming technological regimes for sustainable development: A role for alternative technology niches? *Sci Public Policy* 30.
57. Chevalier JA, Mayzlin D (2006) The effect of word of mouth on sales: On-line Book Reviews. *J Mark Res* 43: 345–354.



AIMS Press

© 2019 the Author(s), licensee AIMS Press. This is an open access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>)