

Behaviour of consumers of conventional and organic flowers and ornamental plants in Italy

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Abstract

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The paper analyses preferences and motivations of Italian consumers of flowers and ornamental plants, both conventional and organic. The results helped to outline their profile. Purchases are still done in the traditional places (flower shops for cut flowers and plant nurseries for potted plants), however positive trend is found for potted plants purchases at large distribution chains. Some differences came out as to purchase motivations: cut flowers are mainly bought in special occasions whereas potted plants purchases are linked to personal use. The results confirm a positive relationship between the purchase of flowers and plants and the age of the interviewees, besides showing that women are interested on purchases. The information we obtained is relevant not only for the sector's operators in order to define effective managerial strategies, but also for the policy maker to address new market and consumption policies.

Keywords: floriculture and nurseries products; purchase motivation; consumer profile; Probit regression; direct survey; organic products

In the past few years important changes took place in the profile of the consumers of agri-food products, especially in Western countries. Such changes also concern flowers and ornamental plants. The demand of the latter is influenced, besides traditions and special calendar occasions, by wider needs linked to amusement, improvement in the quality of life, and positive values plants and flowers communicate (ISMEA 2005). As a consequence, in the present phase the purchases of such products constitute a telling indicator of the level of development of a society.

In Italy, floriculture and plant nurseries represent an important productive sector, with a strategic role for the primary sector in terms of employment and income in those areas where it takes places and in the areas that host its many satellite activities (SCHIMMENTI 2009). According to the 6th Agricultural Census in Italy in 2010, floriculture covered an area of 46,353 hectares, 27,577 of which were constituted by plant nurseries (10,844 firms), 12,724 by flowers and ornamental plants (14,093 firms) and 6,052 by saplings and seedlings production (5,110 firms) (ISTAT 2013a). In terms of value,

the production at base prices for the year 2011 is around €2,670 million (M), 5.4% of Italian agriculture (INEA 2012). Also, floriculture and plant nurseries are one of the few sectors within agriculture that has an active balance of payments, worth around €118 M in 2011, especially due to the good performance of ornamental plants (ISTAT 2013b). The latter also present a high level of competitiveness, especially in some Central and Eastern European markets (ASCIUTO et al. 2008). As to purchases, in the year 2010 the families' average expenditure was around €2,182 M, 58.8% of which being the purchase of flowers and 41.2% of plants (ISMEA 2012). The same ISMEA research shows that flowers and ornamental plants are mainly bought by female buyers older than 55, retired people, employees, and housewives of an average or lower than average income household. They buy flowers mainly on some special occasions and plants for purposes of house or open spaces furnishing (ISMEA 2012).

Due to the economic and social importance of floriculture in Italy and in order to improve knowledge of the behaviour of the consumers of flowers and ornamental plants – conventional and organic – the present paper analyses, through a sample research, the preferences and motivations of Italian consumers.

We believe that the knowledge of consumer behaviour is of crucial importance for both the firms' marketing managers and the policy makers, for it leads to define effective consumption policies. The knowledge of consumer behaviour can in fact contribute to build and consolidate the success of firms both in the domestic and in foreign markets and lead to have a good command of efficient methods of influencing it to reach benefit (LUŠŇÁKNOVÁ et al. 2010).

Analytical approach. Faced by the continuous changes in society brought about by the globalization of markets, the evolution of life styles, etc., the approaches to the study of consumption models have witnessed a profound evolution. We moved from strongly reductionist models based on a "rational" consumer interested only in his/her own welfare (DEATON, MUELLBAUER 1980; HEAP et al. 1992; PAAVOLA 2001; SCHOTTER 2002) to approaches that seek to capture the emotions and the values that are perceived through the product, and its capacity to mark the belonging to a given social group (FABRIS 2003; STÁVKOVÁ et al. 2008; SCHIMMENTI et al. 2010). Obviously, in particular in the recent economic and financial crisis, the basic func-

tion of the product and of the market continues to have, according to the literature, an important role (CARRIGAN, ATTALLA 2001; SOLOMON 2004).

The modern approaches to consumer behaviour seek to account for the fact that the consumer pays attention not only to the satisfaction of his/her own needs but also to the effects of his/her decisions on the community and on the environment, with the objective of not compromising the needs of future generations (HANSEN, SCHRADER 1997). In other words the altruistic and ethical aspects of consumption choices are considered (ROBERT 1995) as well as the awareness that such aspects can represent an engine of social change (WEBSTER 1975) in the direction of social and environmental sustainability (PRIEWASSER 1999).

In general, as is well known, it is possible to distinguish three main approaches to the study of consumer behaviour. The first one, the cognitive approach, considers that consumers' individual actions are the result of a process of intra-personal elaboration (DALLI, ROMANI 2009) which starts from the perception of an information stimulus on the part of the consumer who interprets and stores it in his/her memory, ready to be used to shape his/her own behavior to obtain specific goals. On the contrary the behaviourist approach gives no importance to mental and individual aspects, individuating in environmental stimuli the factors that can condition the purchaser's behaviour therefore excluding that internal cognitive factors can determine the consumer's behaviour. Finally, the more recent experiential approach hypothesizes that the consumer acts driven by his/her emotional states, which constitute the motivational bases for the processes of purchase and consumption (SOLOMON 2004). The traditional focus placed on the purchase has been moved to the consumption experience. According to this approach the experience that the consumer makes getting in touch with the purchased good expresses a relationship that is not solely rational, but implies an involvement dictated also to the symbolic representation that the consumer has of the good consumed.

As to ornamental floriculture and its characteristic nature, traditional approaches can explain the consumers purchasing behaviour only in part, for this is conditioned more and more by ethical values, the affiliation to a social group, the emotional state, subjective welfare, the increasing attention to social and environmental dis-equilibriums (SCHIMMENTI et al. 2010).

There are very few studies in the literature that analyse demand and consumer behaviour in floriculture and plant nurseries. The main aim of these studies is to identify the various market segments in function of some endogenous (motivations, habits, etc.) and exogenous variables (social and demographic characteristics, life styles, etc.) in order to outline the profile of the consumer.

In general, the results of these studies show attitudes and motivations that are profoundly different according to the context and to the maturity of the market (BATT, POOL 2004). Among the purchase motivations, special occasions may be prevalent (DE KLEYN, DE HAAN 1983; LAMB et al. 1992; BATT, POOL 2004; YUE, BEHE 2008), or purchases for personal use (BEHE, WOLNICK 1991; BEHE et al. 1992; YUE, BEHE 2008). In the latter case, IMANISHI et al. (1992), for instance, show that in the Japanese market floriculture products are bought for the tender feeling of nature or sense of season, or, as found by OPPENHEIM (1996), for the homely atmosphere created by their colour. On the other hand, YUE and BEHE (2008) find that a relation exists which ties the purchase motivations and the location where the purchase takes place. In particular, they show that traditional freestanding floral outlets and direct-to-consumer outlets are especially frequented by demanding consumers, who ask for high quality standards and extra-services embodied in the product. On the contrary, impulsive consumers tend to purchase mainly in box stores or in general retail outlets, possibly attracted by special offers and cheap prices. Some research also shows that the frequency of purchases is positively correlated to the age of the purchaser, to the knowledge of flowers and plants, or to the presence of plants in the house (BAOURAKIS et al. 2001). In particular, age, as discussed by VIERHELING and VAN ALVENSLEBEN (1986), is one of the most influential factors on the type of product bought; according to these, young consumers prefer simple flowers, such as instance daisies, differently from more mature consumers who purchase roses, lilies and orchids. The price variable exerts a significant influence on the motivations, frequency and type of purchases, negatively tied in many cases to the purchase itself (DE KLEYN, DE HAAN 1983; GIRAPUNTHONG 2003). In any case, a different attitude is shown, according to the motives that lead to the purchase; the expenditure increases in particular occasions such as anniversaries and holidays (SCHIMMENTI et al. 2010). Furthermore, some authors investi-

gated the awareness of consumers of flowers and ornamental plants towards environmental sustainability as well as their willingness to pay (WTP) for environmental-friendly products. The results highlight that WTP increases for plants labelled as non-invasive, native, or sold in biodegradable or low-carbon packages (YUE et al. 2010).

As far as organic productions are concerned, WÜTHRICH et al. (1996) emphasize that in Switzerland consumption is positively correlated to the purchase of organic food, and negatively correlated to prices; also, they show that both the look of the plants and their longevity determine the purchasing decision. Also LABERENZ (1997, 1998), in two works on the German market, individuates in the look one of the characteristics that most influences the purchase of organic flowers, and finds out a WTP in the consumer as far as 15% more than the prices of conventional products.

MATERIAL AND METHODS

In studying the purchasing behaviour of the products of floriculture and plant nurseries – considering the lack of specific studies in the Italian context – we have deemed an opportunity to pursue a quantitative analysis, in order to be able on the one hand to outline the consumers profile, and on the other to acquire information on the values and ideas that influence the consumers, even in relationship to the type of productive process (conventional or organic).

In the preparatory phase of our study we produced a “preliminary” questionnaire, which was administered to a focus group in order to verify the degree of understanding of the questions and to identify errors, even in the language used. This allowed, based on the observations of the respondents, some modifications of the questionnaire, leading to its final version.

The empirical investigation was then realized administering to a sample of consumers the final version of the questionnaire. The sample was selected starting from the residing population in the 20 regional capitals, which on the 1st of January 2010 amounted to 9,594,459 (ISTAT 2011). Considering the large size of the population, and a 5% margin of error, of our sample is constituted of 400 units.

Determination of the sample size. We assume for the sake of simplicity that the sample is of the simple random type, and we assume we need to

calculate the sample size necessary to estimate the fraction of population buying flowers with a margin of ± 0.05 . Lacking more precise information, we calculate the sample on the basis of the max. theoretical variability of the correspondent Bernoulli random variable (buy/not buy), which is obtained when the proportion of population that purchases is equal to 0.5 (hence the variance is 0.25). Assuming further $z_{\alpha/2} \approx 2$ we obtain:

$$n \approx (2 \times \sigma/0.05)^2 = (2 \times 0.5/0.05)^2 = 400$$

The units were randomly sampled using a proportional stratified sampling plan, obtained dividing the resident population in a number of strata (regional capitals). To reach the size of 400, we made, in the period May–July 2011, a total of 1,398 telephone calls in 11:00–13:00 and 15:30–19:30 every day of the week (excluding Sundays and holidays). The interviewees were above 18 years old who declared to deal themselves with the family purchases.

The questionnaire comprises 23 questions, and is divided into three sections. The first contains questions on purchasing and consumption behaviour (purchase propensity, purchase frequency, purchase motives, factors that influence purchase, purchase occasions, average expenditure for each purchase, and places of purchase); the second section includes questions aiming to understand the propensity to the purchase of organic floriculture and nursery products (but also agri-food products) (awareness of the existence of such products, purchase and lack of purchase motivations, WTP, and, with reference to agri-food products, propensity and frequency of purchase); finally, in the third section we put questions useful to understand the profile of the interviewee (age, gender, education, components of the family, job held, income).

The information gathered has first undergone a descriptive statistical analysis. Then we selected a number of variables through which we reached an inferential model capable to explain the role of the main social and economic characteristics of the buyers in deciding the purchase of floriculture and nurseries products.

RESULTS

The purchase of flowers and ornamental plants

Table 1 gives the complete demographics of the total sample. Our sample is formed by 69.50% women

Table 1. Socio-demographic characteristics of the sample ($n = 400$)

| | | Frequency (%) |
|------------------------|--------------------------------|---------------|
| Gender | male | 30.5 |
| | female | 69.5 |
| Age (year) | 18–24 | 0.75 |
| | 25–44 | 13.00 |
| | 45–64 | 47.25 |
| | 65–74 | 25.75 |
| | more than 74 | 13.25 |
| Education | primary school | 11.25 |
| | lower secondary school | 19.50 |
| | upper secondary school | 41.75 |
| | university and master's degree | 27.50 |
| Occupation | employee | 21.25 |
| | housewife | 12.75 |
| | self employed | 7.25 |
| | retired | 46.75 |
| | unemployed | 0.05 |
| | other | 11.95 |
| Average monthly income | < €1000 | 17.00 |
| | €1,001–€2,000 | 23.75 |
| | €2,001–€3,000 | 10.50 |
| | €3,001–€5,000 | 3.25 |
| | > €5,000 | 1.00 |
| | does not respond | 44.50 |

and 30.50% men. Prevalently they are individuals in between 45 and 64 years of age (47.25%) who have a high school education (41.75%), live in a family of two persons (34.00%), and are mainly retired people and housewives (59.50%), with a monthly income between €1,001 and €2,000 (23.75%).

73.00% of the individuals interviewed (292 units) purchases cut flowers and/or ornamental plants, whereas the remaining 27.00% (108 units) declare not to purchase mainly because they are not used to do so (52.78%) and for the difficulty of caring for potted plants (26.85%). The segment with the highest number of purchasers is that of potted plants (65.75% of the total); the remaining respondents buy both potted plants and cut flowers (25.00%)

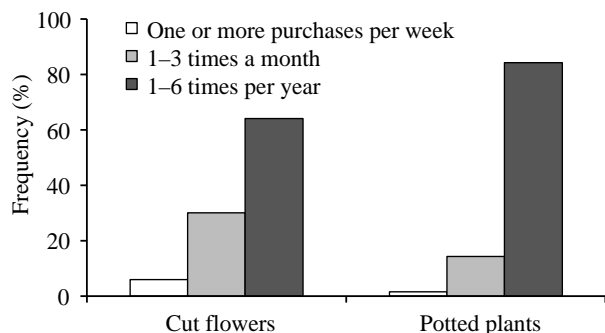


Fig. 1. Frequency of purchase of cut flowers and potted plants

or exclusively cut flowers (9.25%). Our research shows the relevant presence of individuals who buy such products yearly (1–6 times per year; Fig. 1). However, in the sector of cut flowers the percentage differences between who makes purchases yearly (64.00%) or monthly (1–3 times per month; 30.00%) are much lower compared to the sector of potted plants (84.15% and 14.34%, respectively). Weekly buying (1 or more per week) are not frequent in both segments.

The purchase motivations of the interviewees are very different in relation to the segment considered. In particular, whereas for potted plants the personal use is prevalent (41.50%), for cut flowers the number of people who buys them as a present is relevant (37.00%). The factors that most affect the floral buying decisions are imperfections (50.34%) and price (33.22%); certifications (1.03%) and the origin of the product (1.37%) are instead of very little importance. Also the place of purchase is different, dependently on the segment considered. In particular, while specialized traditional retail shops are the preferred place to buy cut flowers (48.68%

of the expressed preferences), nurseries are more frequently chosen for potted plants (55.85%). As to the average expenditure, the interviewees plan to spend for each purchase of cut flower a sum below €10 in 38.3% of the cases (56.6% for potted plants), in between €10.01 and €20 in 36.3% of the cases (32.1% for potted plants) and beyond €20 in 25.5% of the cases (18.9% for potted plants; Fig. 2).

Purchases per macro-area

The data analysis was also disaggregated at the regional level, considering four geographic macro-areas. These were: North-West (Piedmont, Valle d'Aosta, Lombardy and Liguria), North-East (Trentino Alto-Adige, Veneto, Friuli-Venezia Giulia and Emilia-Romagna), Centre (Tuscany, Umbria, Marche and Lazio), South and Islands (Abruzzo, Molise, Campania, Apulia, Basilicata, Calabria, Sicily and Sardinia).

At that level some differences are relevant in the percentage of purchasers – penetration index – of flowers and ornamental plants. In particular, such index is more modest in the regions of the South and in the Islands (Mezzogiorno). More specifically, a higher expenditure for cut flowers can be noticed in the North-West, with a yearly frequency, while in the Centre and in the Mezzogiorno potted plants expenditure is higher, and monthly purchases higher. Cut flowers are in all cases prevalently bought for specific occasions; ornamental plants instead are bought for personal use in the North, whereas in the South and Centre they are bought for special occasions.

The differences in the purchasing places are instead not geographically relevant. For potted

Table 2. Willingness to pay for cut flowers and potted plants (frequency %)

| | North-West | North-East | Centre | South and Islands |
|-----------------------|------------|------------|--------|-------------------|
| Cut flowers | | | | |
| Up to €10.00 | 29.54 | 33.34 | 55.18 | 26.67 |
| From €10.01 to €20.00 | 40.91 | 58.33 | 24.14 | 33.33 |
| Beyond €20.00 | 29.55 | 8.33 | 20.68 | 40.00 |
| Potted plants | | | | |
| Up to €10.00 | 61.04 | 46.66 | 55.67 | 40.98 |
| From €10.01 to €20.00 | 25.97 | 36.67 | 31.96 | 31.15 |
| Beyond €20.00 | 12.99 | 16.67 | 12.37 | 27.87 |

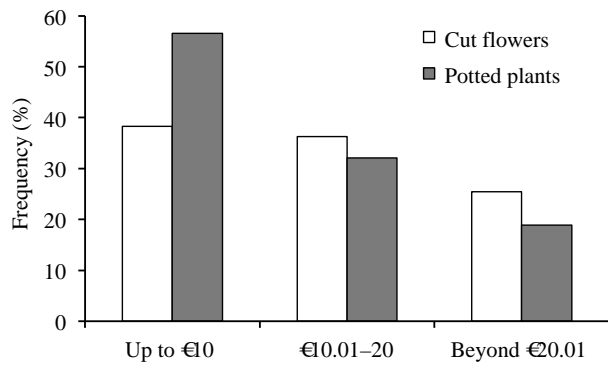


Fig. 2. Average expenditure for the purchase of cut flowers and potted plants

plants, nurseries are the privileged place in the four areas, followed by large scale retail trade, especially in the North-West. Cut flowers are mainly bought at specialized shops and street kiosks in all the four areas. Finally, the average expenditure for both cut flowers and potted plants is higher in the Mezzogiorno. Such result can be partly explained by the fact that purchases are linked to special holidays/occasions, differently from the other areas where personal use is prevalent (Table 2).

Propensity to purchase organic flowers and ornamental plant products

Among the buyers of flowers and ornamental plants (292 individuals) only 9 (3.08%) prefer products with organic certification. 5 of the 9 buyers (multiple choice) do not give a specific reason, 4 declare they buy them due to environmental awareness, 3 in order to protect family health, 2 for the natural character of such products, only 1 in order to protect the health of the community. Among the reasons for the lack of purchase the main one is the lack of knowledge of their existence (89.40%); less frequent are: difficulty to find them (6.71%), lack of specificity to the conventional product (2.47%), higher price and more frequent imperfections (0.71%, respectively).

34.98% of the respondents categorically excluded the possibility to ever purchase organic plants and flowers, 36.40% manifested the intention to buy them in the future, while 28.62% showed a degree of indecision. Among those who had not excluded the possibility to buy both organic cut flowers and potted plants in the future we found a high percentage of the interviewed WTP for organic prod-

ucts from €1 to €2 (56.4% of the respondents for cut flowers and 50.0% for potted plants) and from €3 to €5 (33.3% for the cut flowers and 43.0% for potted plants) on top of the average expenditure for each single purchase of the conventional product.

In reading these figures we must bear in mind that, answering a specific question, little more than half of the respondents (205) declared to purchase organic products, with reference to a high awareness toward environmental, health and ethical issues.

Proposed model

The database underwent an explorative analysis which has led, in constructing the model, to excluding some variables and to re-coding others. In particular, information related to the organic vs. conventional choice was not inserted in the model due to the limited number of respondents. However, all the main social and demographic characteristics of the purchasers of flower and plants were used.

Our model was built aiming to explain the role of these characteristics in the purchase decision of the products. More precisely, the model puts in relation such decision with the geographic area of residence of the respondent, with gender and age, the educational level and the professional condition.

To this goal we referred to the class of model called Probit. As is well known, these models allow the researcher to deal with a dichotomous dependent variable (which can only take the 0 and 1 values), which can be represented by an underlying Bernoulli random variable whose parameter θ is a function of the explanatory variables considered.

In formal terms, we assume that the conditioned density of Y_i when the vector of the explanatory variables X takes the value x_i is:

$$(Y_i | X = x_i) \sim \text{Bern}(\theta_i)$$

where $\text{Bern}(\cdot)$ represents the distribution of the Bernoulli random variable with parameter

$$0 < \theta_i < 1, \text{ such that}$$

$$\theta_i = \Phi(x_i' \beta)$$

with Φ indicating the cumulative distribution function of the standardized normal random variable. The formulation above allows us to estimate the

Table 3. Results of the model

| | Estimate | Std. Error | z value | Pr(> z) | |
|----------------------------------|----------|------------|---------|----------|-----|
| Intercept | -3.59227 | 1.09668 | -3.276 | 0.00105 | ** |
| RIPART centre | 0.00854 | 0.16894 | 0.051 | 0.95971 | |
| RIPART south-islands | -0.23056 | 0.18229 | -1.265 | 0.20594 | |
| GEN female | 0.47423 | 0.16319 | 2.906 | 0.00366 | ** |
| AGE | 1.15010 | 0.34271 | 3.356 | 0.00079 | *** |
| AGE ² | -0.09155 | 0.02970 | -3.082 | 0.00205 | ** |
| EDUC below high school | 0.39805 | 0.25481 | 1.562 | 0.11825 | |
| EDUC high school | 0.33651 | 0.23490 | 1.433 | 0.15199 | |
| EDUC univ. degree | 0.41969 | 0.26813 | 1.565 | 0.11752 | |
| EDUC post-graduate | 0.10204 | 0.38168 | 0.267 | 0.78921 | |
| PROF clerk | 0.49720 | 0.26601 | 1.869 | 0.06161 | * |
| PROF manager/director | 0.59281 | 0.64983 | 0.912 | 0.36163 | |
| PROF professional | 0.22073 | 0.34594 | 0.638 | 0.52343 | |
| PROF shopkeeper/artisan/entrepr. | 0.69135 | 0.62002 | 1.115 | 0.26483 | |
| PROF retired | 0.11560 | 0.28021 | 0.413 | 0.67993 | |
| PROF other | 0.44103 | 0.33977 | 1.298 | 0.19428 | |

z value – asymptotic *T*-value: under the null of zero-coefficient it is distributed as a standard normal random variable; Pr(>|z|) – *P*-values of the test: low *P*-values (< 0.01) convey evidence against the null hypothesis; RIPAR – geographical area; GEN – gender; AGE – age; AGE² – age squared; EDUC – education; PROF – occupation; *** significant 0.1%; **significant 1%; *significant 10%

probability that *Y* assumes value 1 for varying values of the explanatory variables.

In our case, the estimated model determines the purchase probability ($Y = 1$) of the products considered in function of the above mentioned characteristics of the individuals interviewed.

The estimates obtained are reported in Table 3. It can be observed that the significant parameters are associated with the variables gender, age and age squared. The parameter associated with the variable “clerical profession” is also marginally significant.

On the contrary, the geographic area and the educational level do not seem to have a significant influence on purchase decisions.

In sum, our estimates confirm the higher propensity in our sample that female buyers have to purchase potted plants and cut flowers. Also age takes an important role, in the sense that the propensity to buy increases significantly with age, even though at a decreasing pace, as shown by the negative sign of the variable “age squared”.

DISCUSSION

Our research shows that the flower and ornamental plant consumption is characterized by a high penetration index that is more marked for ornamental potted plants. Purchases are still done prevalently in the traditional places, and in particular in flower shops for cut flowers and in nurseries for potted plants; in this latter case we found, compared to preceding studies, a positive trend for purchases at large scale retail trade.

Similarly to the results of other research concerning the motives for buying flowers and plants, in our study it is confirmed that there are differences in both segments considered. In fact, the purchases of cut flowers are prevalently linked to special occasions, whereas for potted plants the purchase for personal use is prevalent, and in particular, as observed by IMANISHI et al. (1992) and OPPENHEIM (1996), for home aesthetic purposes. Also DE KLEYN and DE HAAN (1983), LAMB et al. (1992) and BATT and POOL (2004) noticed in their works, although

in different geographical contexts, a positive relationship between the purchases of cut flowers and potted plants and special occasions. Our result, in any case, confirms the change that has taken place in the usage of flowers and plants in everyday life that were highlighted by ISMEA (2005). In the latter an evolution is argued for such products from luxury goods destined to self-satisfaction, to goods destined to wider needs. Our study, in agreement with the ISMEA research, allows us also to consider the Italian market of flowers and ornamental plants as more or less mature, following the definition of BATT and POOL (2004).

Purchase motivations, just like purchase occasions, seem to exert a relevant influence on the consumer average expenditure for each single action, which is higher for cut flowers than for potted plants; this is in agreement with what SCHIMMENTI et al. (2010) found out in a research in the South of Italy.

The results of the econometric model also confirm, as already proposed by BAOURAKIS et al. (2001), a positive relationship between the purchase of flowers and plants and the age of the interviewees, besides showing that women are more willing to buy. As far as organic productions are concerned, on the one hand we found a negligible presence of buyers, while on the other it seems possible to hypothesize a good propensity to purchase such products. Our results show, in fact, a WTP price 32.7% higher for potted plants and 19.7% for cut flowers. The good propensity to purchase is also linked to the growing awareness consumers have towards the positive effects on the environment and on human health of organic productions. We conclude that this market segment, while not well established in Italy is nevertheless susceptible to development in the future.

CONCLUSIONS

Our results in the first place confirmed the importance of the factors found in the literature concerning the consumer purchase decision process. They also permitted us to define the specificities of the Italian market. This helped us to outline, within the limits of the representativeness of the sample, the profile of the consumer of flowers and ornamental plants, supplying a few indications on potential demand for the organic productions in Italy. The information we obtained is potentially relevant not only for the sector's operators in order to define effective

managerial strategies, but also for the policy makers to address new market and consumption policies.

Concerning the conventional productions, from our research and from comparison with other studies in the literature dealing with the same geographical area, it emerges that demand for this sector has reached its maturity, and is no longer exclusively linked to purchases for special occasions. Also the diversification of sale channels, with the coming of large scale retail trade, especially in the north of Italy, shows a growing adaptation of the firms that operate in flower production and nurseries to changes in family consumption patterns. As this type of productions mainly addresses a pleasure type of need, the purchaser shows a higher attention to the presence of possible imperfections, which in fact, as shown, represents a limiting factor in purchase decisions, unlike the certification and the origin of the product purchased, which are elements that are not presently fundamental in consumers' choice.

Organic produce purchases show instead a very small degree of penetration. Their limited demand is linked, as shown by our data, to the lack of knowledge of this market segment in the people interviewed, as well as to the limited size of supply (SCHIMMENTI et al. 2009). Nonetheless, the good responsiveness to the purchase of organic foodstuff and the significant WTP shown for flowers and plants that emerged in our research, and a higher demand for such products especially in some countries of Northern Europe, can represent strategic tools to sustain the growth of this market segment.

Organic production can therefore be seen as a concrete opportunity for firms that aim at diversification and also at the qualitative level, and at widening the types of products supplied. Yet, this being a new segment it is fundamental to individuate, from a scientific point of view, technical solutions capable to lead to high qualitative standards. Simultaneously, it is necessary to devise effective marketing policies in order to increase the level of knowledge about organic productions.

The aforementioned actions together with adequate strategies at the retail level, which at the moment is one of the main problems for the competitiveness of floro-ornamental firms, which distribute highly perishable and fragile products (SCHIMMENTI et al. 2008), can contribute to the development of the whole sector and, in the specific case of organic products, satisfy potential demand in Italy, and the actual one in other countries, of consumers aware of ethical and environmental problems.

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