Understanding the relationship between green approach and marketing innovations tools in the wine sector

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Abstract

Over the last years, research about sustainability has been interesting due to growing importance of green orientation in the consumer purchasing process. In particular, in the wine industry producers’ environment-friendly behaviour, in terms of organic winemaking, agricultural waste recovery, efficient water use, can represent a high-powered chance to differentiate products and to face new market challenges. Understanding consumer expectations and new purchasing trends by means of marketing tools leads the wine producers to adopt green oriented innovations. Therefore, this research sought to investigate the relationship between marketing innovation tools and green firm approach. Structured on-line questionnaires were used to ascertain the views of 280 wineries in Apulia region, in South Italy, that has a very long history as a wine producer. Findings of this study indicate that wineries with marketing innovative tools seem to have a more eco-friendly approach, since the sustainability orientation can be considered a crucial issue in the framework of the new firm competitiveness challenges. Finally, implications shed some light on the importance of adopting suitable marketing and communication tools to address wineries towards sustainability based trends.

Keywords: sustainability, green orientation, marketing innovation, wine sector, Apulia region

1. Introduction

The agri-food system has recently experienced significant changes in production, trade, and distribution systems: over the last decade, public attention has focused on the quality and environmental issues surrounding food products (Giacomarra et al., 2016). Given the economic and cultural significance attributed to wine production across many of the world’s regions, it is vital that research is undertaken in order to understand and minimise the negative environmental impacts associated with the industry’s activities (Christ and Burrill, 2013). It is important to share new
innovative marketing knowledge and effective marketing policies to build sustainable competitive advantage in international markets of wine (Felzensztein et al., 2014; Mazzetto et al. 2013; Cotarella, 2013; Vrontis et al., 2011). For this reason, innovative marketing strategies should be combined with “exclusive” and “secret” recipes (Dries et al. 2014). According to Cristofi et al., (2015), the sustainability can advance firm financial performance, minimises business risks because and maximises market opportunities. The highly competitive environment of marketing alcoholic drinks in the international market is shifting the features of the wineries and their wine marketing strategies. As a matter of fact, wineries are increasingly required to get better marketing policies all together with their production capacity (Azabagaoglu et al., 2006). Moving from these assumptions, the hypothesis of this paper aims to verify if a correlation exists between the use of innovative marketing tools and the implementation of environmental friendly actions (use of renewable resources, adoption of organic certifications, emissions monitoring, bottle recycling and optimizing of water resources). If marketing innovation strategies in the wine supply chain are effectively introduced, a green approach seems to be a logical consequence since marketing helps firms to address processes towards new trends oriented to sustainability. According to Kuosmanen and Kuosmanen (2009) the sustainability is acknowledged as one of the key success factors in the long term business strategy of the firm. By means of Survey Monkey – an online survey software - a survey was submitted to a sample of 280 wineries, located in Apulia region (Southern Italy): data analysis was carried out by using the Statistical Package for Social Science (SPSS) software. A Pearson’s Correlation matrix was performed to investigate whether the sustainability orientation affects marketing innovation in the wine sector: a positive correlation was expected to be found. A similar result might lead to the consideration that small and medium sized enterprises (SMEs) involved in wine supply chain, should shift towards greener business oriented models in order to sustain their market competitiveness.

The explorative study has been designed and carried out within the following Integrated Projects of Food Chain (IPFs) of the rural development programme of Apulia region – measure 124 (funded by European Agricultural Fund for Rural Development) in the wine sector: being Vitis, North wine and South wine.

The remainder of this paper is arranged as follows: section 1 provides an overview of background research on business sustainability orientation and marketing innovation in the wine sector; in the section 2, material and methods are presented. Section 3 shows results. Discussion and conclusions close the paper. This study is addressed to owners, stakeholders and partners of wineries; furthermore we dedicate the results of this study to academics that are already working on this
2. Material and methods

This paper is an exploratory research as it seeks to provide insight in the wine sector and to fill the scientific gap on relationships between orientation to sustainability and green marketing innovations as well as suggestions for further analysis and research.

Our study takes into account as case study the Apulia region (South of Italy) that has a very long history as wine producer (Contò et al., 2014; 2015), as well as Apulian wines are very well known for their physical and organoleptic characteristics all over the world. Due to the current global economic, financial crisis and challenges in a highly competitive scenario characterized by new non EU competitors, Apulian producers are searching for new markets, although their fragmentation and small average size. European policy has crestfallen smaller wineries whose only lifeline is to bet on a niche strategy. Apulian wine sector represents for all the reasons above described a fascinating case to be investigated, and therefore, an explorative case study is here presented.

The exploratory nature requires researchers to deal with a hybrid research designs (Harrigan, 1983), for this reason, the present research approach has been structured to track the principles by eminent scholars (Eisenhardt, 1989; Eisenhardt and Graebner, 2007). Firstly, evidences and insights were provided for defining and listing variables to investigate. After that, the survey questionnaire was structured, previously testing it through a pre-validation step with 25 selected respondents (wine experts, international entrepreneurs, oenologists, wine routes responsible, eminent academic scholars etc.). In order to investigate the existence of the relationship between green firm approach and marketing innovation tools, the survey questionnaire was structured with several questions. Some of these questions were built with binary options, some others were developed to scaling responses; for these latter questions seven Likert Scales items have been adopted. In this regard, the authors used the following Likert rating scales (Allen and Seaman, 2007): Not a priority; Low priority; Somewhat priority; Neutral; Moderate Priority; High priority; Essential priority. The survey was structured in several sections: 1. general information; 2. firm activities; 3. competition; 4. innovation; 5. the firm and the future.

By means Survey Monkey software, a web based survey (Gilinsky et al., 2008) has been submitted to a random sample of 280 wineries that was extracted from the population of wineries involved in 3 Integrated Projects of Food Chains (IPFs) in Apulia region. These wineries were considered representative in order to provide suggestions and insights. Data collection was carried out during
the period September - November 2013. A ‘recall survey’ step and on-site visits were also performed in order to increase the number of respondents: in particular, 204 responses have been collected, out of the 280 wineries contacted. Data analysis has been performed by using Statistical Package for Social Science software.

Within this research framework, it is hypothesised that wineries using innovative marketing tool seem to be more interested and inclined to the implementation of environmental friendly actions (use of renewable resources, adoption of organic certifications, emissions monitoring, bottle recycling and optimizing of water resources): this insight could derive from the existence of a correlation between these two analysis areas. In order to investigate our research hypothesis, we selected variables (in a dummy variable format and in a Likert Scale format) as proxies to be used to evaluate the relationship between innovative marketing choices and the green firm approach. From the 36 questions, corroborated by eminent scholars studies, more suitable questions related to our 2 research areas were selected. They are as follows:

1. Marketing innovations choices (Naidoo, 2010):
   - \textit{NewMark} variable, the importance that is assigned to new marketing tools (QR code, website, newsletter, wine club, training course etc.) [Likert rating scale variable];
   - \textit{NewTecn} variable, the importance that is assigned to new technologies implementation (use of organic, chemical and innovative substances) for reaching new market segments [Likert rating scale variable];
   - \textit{R&D} variable, if Research and Development Area is structured in the firm [Dummy variable];
   - \textit{WhWinTec} variable, if innovative techniques for white wines (e.g.: reduction in winemaking, selective cryoextraction) and relative stabilization are implemented [Dummy variable];
   - \textit{RedWinTe} variable, if innovative techniques for processing red wine are implemented [Dummy variable];

2. Orientation to sustainability (Gabzdylova et al., 2009; Zucca et al., 2009):
   - \textit{EnvRes} variable, the importance that is assigned to the concern for the natural environment [Likert rating scale variable];
   - \textit{GreenAct} variable = the importance that is assigned to the implementation of green activities promotion [Likert rating scale variable];
   - \textit{OrgCer} variable, if organic certification is adopted [dummy variable];
   - \textit{SustPrac} variable, if sustainable practices (emissions monitoring, bottles recycling,
optimizing the use of water resources) are implemented in the wineries [dummy variable];

- GIS_IT variable, if GIS and IT technologies are adopted in the winery [dummy variable].

The selected variables seems to be consistent with the research objectives anyway try to fill the current gap in the literature related to the main framework of this study. Figure 1 describes the flow chart related to the methods by highlighting research questions, hypotheses, main assumptions and general structure: in red the path to be followed for understanding the general methodological structure of the paper.

**Fig. 1**

From the analysis of the figure 1, a correlation analysis was performed in order to highlight significant relationships between the variables selected in considering of the paper research framework (Hinkle et al., 2003; Lane, 2015). Correlation between sets of data is a measure of how well they are related. The Pearson Product Moment Correlation or PPMC highlights the strength of the linear relationship between two sets of data: it is used when both variables being studied are normally distributed. Pearson's correlation coefficient (r) can range from -1 (perfect negative linear relationship) to 1 (perfect positive linear relationship); 0 indicates no linear relationship between variables. Then, Pearson's r was calculated in order to measure the strength of the association between the above selected variables so to prove or reject our hypotheses. The correlation coefficient formula is specified as follows:

![Pearson correlation's r](1)

where:

- \( x \) are the variables related to Marketing innovations choices; \( y \) are the orientation to sustainability variables. This study is not investigating the issue of spurious correlations as it lacks control variables.

### 3. Results

The correlation matrix in Table 1 shows Pearson's Correlation values among different variables selected for testing the paper research questions. Then, the variables were split into two groups: the first group gives evidence of the wineries approach to marketing innovations (in columns); the second group of selected variables represents as a proxy for a green approach and orientation of
considered firms (in rows).

**Tab. 1**

Results show that most of the variables are significant at the 0.01 level (2-tailed) so enabling confirming the initial hypothesis. The correlation matrix shows that 12 of 25 originated values are significant; amongst them, there are seven that present a positive correlation.

The highest correlation value (+0.493) is found between *NewTecn* and *SustPrac*. The lowest significant value (+0.143) is found between *NewMark* and *GreenAct*. The most negative significant value of correlation (-0.289) is between *NewTecn* and *OrgCert*. The correlation among the variables *EnvRes*, *SustPrac* and marketing innovation group variables is still significant; while the correlation among the variable *GIS_IT* and marketing innovation group variables is still no significant.

4. Discussion

Regarding the significance of the research design, findings confirm the main hypotheses on which this study was based upon and are supported by theoretical implications shown in the literature review. As shown in table 1, the application of new technologies in order to reach new market segments is related to an environmentally friendly approach as reflected in the highest level of significance (+0.493) and the positive correlation between the *NewTecn* and *SustPrac* variables. Sustainable Agriculture Promotion, Green Action Promotion and Environmental Respect are becoming marketing innovation tools, that might be enable in turn firms to penetrate new market segments in order to sustain their competitiveness for SMEs in the wine sector. A negative correlation between the use of new technologies and Organic Certification adoption was found, probably due to the use of traditional and conservative agricultural practices of Italian firms being far from adopting new technologies. So, it could be argued that orientation to sustainability is shifting manufacturers to a strategy which remains rooted to the old farmer traditions (negative correlation with organic agriculture) and is increasingly creating the foundation for more technology-based sustainable innovation. Indeed, wineries with a Research and Development area are sure conscientious and skilled of new environmental challenges on ethically correct consumption. It might induce firms to develop process and production innovations primarily through sustainable agricultural and winemaking practices, such as efficient use of water for irrigation operations and the reuse of washing water. The positive correlation between the following variables:
1. NewMark and EnvRes (0.240);
2. NewMark and GreenAct (0.143);
3. NewTecn and EnvRes (0.313)

highlights how orientation to sustainability is taking a central and crucial role in the operational and strategic choices of wineries thanks to the marketing innovative strategies and tools. The environment respect can be interpreted as a crucial driver to connect firm strategies to market: it becomes an economic need as well as a moral obligation for the wineries. This approach allows to optimise operating costs and to increase the company's reputation (Cristofi et al., 2015). In this sense, environmental respect can be understood as a factor that affects the innovative marketing approach and vice versa. The promotion of green activities within the company raises awareness in the importance of adopting an innovative approach (environment friendly) aimed to environmental protection and food safety. Consistent with the first two correlations, the adoption of sustainable agricultural and industrial technologies and practices can take the role of real distinctive communication lever useful to penetrate in different market segments (especially upper segments).

The use of GIS and IT technologies can be functional in order to monitor the production cycle, energy efficiency, quality certification of products and cycles, and land protection. However, the correlation among the variable GIS_IT and marketing innovation group variables is still not significant. This is an unexpected result because GIS technology allows to visualize and to disseminate the results of the analysis, enabling it to be easily accessible by researchers, professionals, workers within the sector. This free availability of information represents a starting point to promote Italian wines. GIS fundamental tools are able to provide accurate climate, soil type and geomorphology information. The innovative techniques for obtaining white wines are particularly powerful as shows the negative correlation between the variables EnvRes and WhWinTe. Wine-making with the reduction of oxygen, selective cryoextraction and the relative stabilisation are so techniques that require high energy levels. The same observations could be made after reviewing the results obtained from the correlation between EnvRes and RedWinTe. Indeed, the grapes processing, cleaning and sanitizing processing monitoring in order to obtain healthy grape are particularly impacting actions.

5. Conclusions

Wine consumers are becoming increasingly interested in green issues so that the concept of environmental sustainability can act as a relational channel between wineries and customers: the environmental policy of firms positively influences consumer purchasing behaviour, therefore
marketing strategies can help wineries to address firm green choices for, improving financial performance, minimising costs and business risks and maximising market opportunities (Cristofi et al., 2015). Considering this background, the paper investigated the correlation between the orientation to sustainability and marketing innovation tools in the wine industry.

The analysis of paper dataset collected among the population of Apulia wineries shows that the orientation to the sustainability of the observed wineries is positively correlated to the adoption of innovative marketing tools and actions. It emerges that the use of new technologies to penetrate new markets shows a positive correlation with the adoption of sustainable production practices and the environmentally-friendly approach.

As some scholars suggested (Mishra and Sharma 2012), the “green marketing concept” aims at sustainable marketing and socially responsible products (non-toxic and environmentally friendly); it is increasingly becoming an important driver for management and for matching profitability and sustainability issues. Overall, the environmentally efficient technologies are positively correlated with the innovative marketing choices, because of the increasing importance of concerns regarding the environment and the efficient use natural renewable resources have in public opinion and in consumers perception. A critical success factor for the wineries becomes the ability to communicate to their target market by providing information on their degree of environmental respect. Further research is clearly necessary to test and refine these findings: the orientation to sustainability of firms can be considered a tool for reaching and maintaining competitive advantage and to face market crisis (Chen, 2006). In this context, the study carried out could be considered as the starting point to revise the policies of firms and to introduce into these latter marketing innovation tools and so the adoption of more eco-friendly processes and products, that allows to achieve a competitive advantage and to penetrate new market segments by reaching consumers’ preferences.

Finally, the drawbacks of the paper can be linked to its exploratory nature. Some limitations can be highlighted; firstly the relative small sample constrained the application of some statistical procedures (e.g., PCA procedure). Secondly, the variables selected are not exhaustive and represent only a proxy for the study’s objectives. Furthermore, the surveyed wineries belong to the IPFs: in considering the nature and characteristics of some of these projects, the participating firms can be more driven towards developing an innovative and green approach. The sample of companies could be expanded numerically, but also to include firms and wineries not participating in IPFs.

This exploratory research is ongoing and its findings are far from being final. Further empirical research is needed to test and validate the essentially preliminary framework developed and the assumptions made for the purpose of the current study. Other variables could be included regarding
the analysis of marketing innovation approach and a green orientation. Specifically, secondary data that are available through research and official statistics could also be included in order to make the current study more inclusive and robust.
Tab. 1 Pearson's Correlation values between marketing innovation variables and orientation to sustainability variables

<table>
<thead>
<tr>
<th>Green Var</th>
<th>NewMark</th>
<th>NewTecn</th>
<th>R&amp;D</th>
<th>WhWinTe</th>
<th>RedWinTe</th>
</tr>
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<tbody>
<tr>
<td>EnvRes</td>
<td>0.240</td>
<td>0.313</td>
<td>0.303</td>
<td>-0.221</td>
<td>-0.203</td>
</tr>
<tr>
<td></td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>GreenAct</td>
<td>0.143</td>
<td>0.114</td>
<td>0.053</td>
<td>0.014</td>
<td>0.043</td>
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<td></td>
<td>**</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>SustPrac</td>
<td>0.359</td>
<td>0.493</td>
<td>0.470</td>
<td>-0.226</td>
<td>-0.211</td>
</tr>
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<td>***</td>
<td>***</td>
<td>***</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>OrgCer</td>
<td>-0.263</td>
<td>-0.289</td>
<td>-0.308</td>
<td>0.196</td>
<td>0.151</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>GIS_IT</td>
<td>0.119</td>
<td>0.071</td>
<td>0.104</td>
<td>-0.081</td>
<td>0.005</td>
</tr>
</tbody>
</table>

*** significant at 99%; ** significant at 95%; *significant at 90%

Source: our processing
Fig. 1 Flow chart of methods (included research questions, hypotheses, assumptions and structure)

Research question: Is there a relationship between sustainability orientation and marketing innovation in the wine sector?

Hypotheses:

- Null hypothesis is:
  H0: There is no correlation (equivalent to saying r = 0)
- Alternative hypothesis is:
  H1: There is a correlation (equivalent to saying r ≠ 0)

Assumptions:

- data is at continuous (scale/interval/ratio) level
- data are normally distributed
- data values are independent, unbiased samples
- a linear relationship is assumed when calculating Pearson’s coefficient of correlation
- observations are random samples from normal or symmetric distributions

Structure:

Type of data?

<table>
<thead>
<tr>
<th>Continuous</th>
<th>Discrete</th>
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<tbody>
<tr>
<td>Type of question</td>
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<tr>
<td>Relationships</td>
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<table>
<thead>
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<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>Is there a dependent variable?</td>
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<table>
<thead>
<tr>
<th>Regression analysis</th>
<th>Correlation analysis</th>
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<td>Non Parametric</td>
<td>Parametric</td>
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<table>
<thead>
<tr>
<th>Spearman’s rank</th>
<th>Pearson’s r</th>
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Chi square tests one and two sample

<table>
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<tr>
<th>Between what?</th>
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Results analysis

Interpretation

Source: our processing
Highlights

- Orientation-to-sustainability were related to green marketing innovations
- Consumer purchasing and firms orientation were analyzed
- 280 wineries in Apulia region (in South Italy) were sampled
- Correlation analysis was performed considering a set of specific variables
- Study contributed to communication between the business and the final consumer