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Wine supply chain organization and bottling strategic decisions: evidences from the Italian Appellations of Origin

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Structural changes characterizing international wine market raise new questions and challenges for wineries, related to the optimal strategy to get and preserve market share. On the demand side, consumers are oriented to a wide quality concept, which covers final product's characteristics, inputs quality, process attributes, environmental characteristics, product's safety, etc. On the supply side, facing an increasing competition at international level, firms have to develop a competitive advantage increasingly based on product's quality differentiation strategies. Furthermore, it is noteworthy that modes of supply chain organization and types of vertical relationship among supply chain participants are likely to affect final product's quality. More specifically, in the wine sector, product's range and product's quality are influenced, in the long term, by the coexistence of several types of vertical relationship and buying-selling alternatives, notably between vine growers, wineries and bottling firms. Different selling-buying trade-offs may thus arise, for the grower/winery, grape or wine sells to the spot markets or bottled wine sells to the final market, for the bottling company, the trade-off between Appellation of Origin (AO) and private brand strategy (Giraud-Héraud et al., 1998).

Several studies recognize the links between supply chain organization and final product's characteristics, notably the effects on product's quality and quantity/price as well as on long-term quality investments and maintain of product reputation (Giraud-Héraud et al., 1998; Fernández-Olmos et al., 2009; Goodhue et al., 2004). Structural characteristics (as size, juridical status, entrepreneur' age, etc.) and types of vertical relationship between the vine growing and the grape processing stages are likely to affect the strategic choice of volumes to bottle and sell on the final market (market orientation) and the strategic bottling decisions related to the vertical and horizontal product quality differentiation. Moreover, as far as AO are concerned, several additional factors may affect the bottling strategic decisions (the stringency of the minimum quality standard of the AO, the level of AO collective reputation, the effectiveness of the quality signal, etc.).

Given these premises, the aim of this paper is twofold. After having identified and characterized the main typologies of agents and the types of vertical relationship along the Italian wine supply chain, notably focusing on AO wines, we identify the types of AO bottlers according to upstream structural and organizational characteristics, downstream final product and prevalent AO characteristics and investigate factors having an influence on bottling strategic decisions (wineries market orientation, vertical and horizontal product quality differentiation and main AO's characteristics).

The analysis is based on wine production declarations data provided by the Italian Ministry of Agriculture as regards to vine growing and processing stages and Italian Union of Chambers of Commerce data as regards to wine bottling stage and refers to the 2008 wine campaign. A unique database is thus created and managed to classify the entire population of Italian wineries according to both structural and organizational characteristics and identify the types of supply chain participants (grape growing, processing and wine bottling).

Notably, we follow a bottom-up approach starting from the *wine bottling stage*, focusing on the AO wines, notably Geographical Indication of Origin (IGT) wines, Controlled Designation of Origin wines (DOC) and Controlled and Guaranteed Designation of Origin wines (DOCG), which correspond to successive degrees of minimum quality standard (MQS) stringency. Then, wine bottling companies are classified according to the type of vertical relationship with upstream supply chain stages, in the following four categories: “vertically integrated bottlers” that operate at all the successive stages (grape production and processing and wine bottling), “industrial bottlers” that operate at the grape processing and wine bottling stage, thus only process grapes acquired through market transactions and bottle wine (either own-produced or bought from upstream agents), “cooperative bottlers” that acquire grapes either from associated growers or through market transactions and bottle wine (either own-produced or bought from upstream agents). Finally, “pure bottlers” only operate at the bottling stage and thus acquire wine from upstream agents. For each bottler’s typology we analyse two sets of characteristics: (i) “bottler downstream characteristics”, as for example, bottled volumes, product range vertical quality differentiation, measured by the share of each type of AO (IGT, DOC and DOCG) on the total bottled volume, product range horizontal quality differentiation, measured by the heterogeneity within each type of AO (number and share of different AOs within each type, number and share of production regions concerned), territorial distribution of wine procurement; (ii) “bottler upstream characteristics” related to grape processing stage for industrial and cooperative bottlers and to both vine growing and grape processing stage for vertically integrated bottlers (firm’s size, juridical status, entrepreneur’s age, types of wine and/or grapes). Crossing the two sets of characteristics makes it possible to investigate the links between downstream traits (volumes, product range quality differentiation and territorial distribution of wine procurement) and the upstream structural and organizational characteristics.

Then, given the wineries population, we investigate, through a regression model, the degree of wineries “market orientation”, considering the proportion of bottled wine with respect to produced wine as a proxy. We thus identify the structural and organizational characteristics that determine whether and to what extent a winery is market oriented (firm’s size, type of grape and wine produced, juridical status, types of vertical relationship between vine growing and grape processing stage, etc.). Furthermore, given the set of bottling wineries, we investigate the factors affecting the relative importance of DOCG and DOC with respect to IGT in the product range (vertical quality differentiation), the product range heterogeneity (horizontal product differentiation) and the strategic choice to orient the bottling activity to a well-defined prevailing AO.

This paper contributes to the existing literature in several ways. First, it provides a descriptive analysis of the Italian wine supply chain based on the entire population of declaring vine growers, wineries and (Appellations of Origin) bottlers and classify and characterize the different typologies of supply chain participants. All supply chain stages are covered and described according to both structural and organizational characteristics. Second, the bottling stage analysis makes it possible to identify the existing “types” of AO bottlers characterize them according to the sets of analysed variables, notably bottlers’ upstream and downstream characteristics and types of vertical relationship along the production/processing/bottling supply chain. Third, the paper provides a microeconomic analysis of the factors affecting bottling strategic decisions. Notably, we investigate, first, the structural and organizational factors affecting the degree of wineries "market orientation" and, second, the factors related to both bottlers and Appellations' characteristics affecting product range strategic decisions.

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