RESR Revista de Economia e Sociologia Rural
ISSN 1806-9479
ARTICLE

Configuration of strategic resources in the face of governance structures: a study in the Parana wine chain

Configuração de recursos estratégicos frente a estruturas de governança: um estudo na cadeia vitivinícola paranaense

Adriana Comini da Silva Santana[1], Cleiciele Albuquerque Augusto[1]

[1]Programa de Pós-graduação em Administração, Universidade Estadual de Maringá (UEM), Maringá (PR), Brasil. E-mails: adrianacomini23@gmail.com; caaugusto2@uem.br

How to cite: Santana, A. C. S., & Augusto, C. A. (2025). Configuration of strategic resources in the face of governance structures: a study in the Parana wine chain. Revista de Economia e Sociologia Rural, 63, e287444. https://doi.org/10.1590/1806-9479.2025.287444en

Abstract: This article aims to understand how human, physical, organizational, and financial resources, of a strategic nature, are configured in face of governance structures adopted in the Paraná wine chain. For that, Transaction Cost Economics theory was used in conjunction with the Resource-Based View, focusing on the complementary analysis of governance structures with the firm's resources, classified as human, physical, organizational, and financial, of a strategic nature. As a method, a qualitative and descriptive research was used, through semi-structured interviews with agents in the wine sector. As a results, it was identified that the vertical integration was the governance structure with the most strategic resources, due to its protection capacity, quality and process control. However, in contracting, strategic resources were also identified, especially human (workforce), physical (structure, location), and financial (investments in wine production). The reasons for contracting included the inability to develop internal resources related to grape production and the reduction of internal fixed costs. Resources such as culture and reputation were found to be essential in maintaining long-term relationships with suppliers. It is concluded that this investigation provides a deeper insight into how each type of resource is represented in the face of governance structures.

Keywords: transaction costs economics, governance structure, resource based view, strategic resources, wine chain.

Resumo: O presente artigo busca compreender como os recursos humanos, físicos, organizacionais e financeiros de caráter estratégico se configuram diante das estruturas de governança adotadas na cadeia vitivinícola paranaense. Para tanto, utilizou-se a teoria da Economia dos Custos de Transação aliada à Visão Baseada em Recursos com foco na análise complementar das estruturas de governança com os recursos da firma, classificados como humano, físico, organizacional e financeiro de caráter estratégico. Como método, utilizou-se uma pesquisa qualitativa e descritiva por meio de entrevistas semiestruturadas com agentes do setor vitivinícola. Como resultados, identificou-se que a integração vertical foi a estrutura de governança com mais recursos estratégicos, devido a sua capacidade de proteção, qualidade e controle dos processos. Contudo, na contratação, também foram identificados recursos estratégicos, especialmente humanos (mão de obra), físicos (estrutura, localização) e financeiros (investimentos na produção vitivinícola). Os motivos para a contratação foram a incapacidade de desenvolvimento interno de recursos referentes à produção de uvas e a diminuição de custos fixos. Recursos como cultura e reputação apresentaram-se como essenciais na manutenção das relações de longo prazo com fornecedores. Conclui-se que a presente investigação trouxe um olhar mais profundo sobre como cada tipo de recurso é retratado frente às estruturas de governança.

Palavras-chaves: economia dos custos de transação, estruturas de governança, visão baseada em recursos, recursos estratégicos, cadeia vitivinícola.

1 Introduction

Viticulture is characterized as a productive activity involving the cultivation of grapes for wine production. In 2021, Brazil produced approximately 1.6 million tons of grapes (Mello &

Machado, 2022). From this yield, the country manufactured around 217 million liters of wine, of which 20% corresponded to fine wines (Mello & Machado, 2022). In 2022, wine production in Brazil increased, reaching a total of 242 million liters (Protas et al., 2024). As a result, the fine wine segment also experienced growth, with a 9.3% increase in production compared to 2021 (Protas et al., 2024).

Given these facts, and as a segment of agribusiness still undergoing development in Brazil, viticulture is seeking consolidation within the domestic wine value chain (Cella et al., 2021; Hoeckel et al., 2017). This is evidenced by the investments made by several Brazilian regions to expand their wine production. One example is the state of Paraná, located in the southern region of the country.

Paraná produces approximately 57 thousand tons of grapes per year, accounting for 3.6% of national production (Mello & Machado, 2022), and is responsible for around 1% of the country's total wine output (Agência de Notícias do Paraná, 2021). Although the state holds a modest share in the national context and scholarly studies remain scarce, Paraná's wine sector boasts a new terroir, traditional wineries, and award-winning wines. Moreover, the state government, along with other organizations involved in the wine production chain, has proposed the development of the sector in order to enhance its production capacity and market participation (Agência de Notícias do Paraná, 2021).

In this context, Paraná faces both challenges and growth opportunities in the production of table and fine wines. This study focuses on the fine wine value chain in Paraná, aiming to understand the challenges and the need for sectoral development, given its distinct characteristics when compared to table wine production.

In light of the sector's potential and the need for efficient growth in fine wine production, it is essential to examine the factors that influence its performance and competitiveness. Among these, particular attention is given to the transactions between the various actors in the chain and the different forms of coordination employed, as the organization of the value chain significantly impacts its efficiency (Cunico et al., 2020; Guimarães et al., 2022; Zylbersztajn, 1995, 2018). In addition to the pivotal role of coordination relationships in enhancing sectoral efficiency (Ménard, 2004, 2018; Williamson, 1985), a competitive analysis of the resources (Barney, 1991; Barney & Hesterly, 2017) available in Paraná's wineries and exchanged among the actors may offer valuable insights into their competitive potential within the national fine wine market.

Theoretically, Transaction Cost Economics (TCE) and the Resource-Based View (RBV) can be employed to identify and analyze, respectively, the forms of coordination and the strategic resources present in the wineries. In terms of TCE, coordination forms are analyzed based on the governance structures adopted, which may involve markets, hybrid arrangements, or vertical integration (Ketokivi & Mahoney, 2020; Ménard, 2004, 2021; Williamson, 1985). Regarding RBV, according to Barney and Hesterly (2017), Barney (1991), and Barney et al. (2021), firms' resources and capabilities classified as human, physical, organizational, and financial can serve as sources of competitive advantage.

Together, these theories provide a robust theoretical foundation for understanding how strategic resources can be coordinated through governance structures. Thus, by analyzing a firm's resources and how they may be allocated within an organization through the adoption of different governance structures it becomes evident that a detailed examination of each type of resource, individually, can support wineries in identifying which of these resources may serve as sources of competitive advantage. It is worth noting that the analysis of strategic resources in conjunction with governance structures has already been discussed in the literature (Argyres & Zenger, 2012; Augusto et al., 2017, 2018; Crook et al., 2013; Cunico et al., 2020; Perito et al.,

2017; Saes, 2009; Watanabe et al., 2016). However, previous studies have generally addressed this topic without differentiating among the specific types of firm resources.

This gap gives rise to the question of what implications may emerge from a more in-depth examination of each type of resource physical, human, organizational, and financial considering their strategic potential and how they are to be leveraged depending on the governance structure adopted. It was found that neither the analysis of coordination forms nor the types of resources involved in the activities and transactions of wineries in Paraná has been thoroughly explored in existing studies, thus creating an opportunity for the present research.

Therefore, this study is guided by the following research question: how are human, physical, organizational, and financial resources configured in relation to the governance structures adopted in Paraná's wine value chain? Based on this research problem, the guiding objective is: to understand how human, physical, organizational, and financial resources are configured in relation to the governance structures adopted in the vitiwinerie chain of Paraná. To achieve this, the study initially aimed to identify the governance structures present between the production and processing segments in the wineries analyzed. Following this identification, the next step was to assess the competitive potential of the different types of resources present in these wineries. Finally, the core analysis consisted of understanding and mapping how each type of firm resource those with strategic relevance behaves in the context of the governance structures initially identified in the wineries under study. In other words, the article seeks to understand the nature of strategic resources in light of the governance structures already adopted by these wineries.

This study is theoretically justified by its attempt to understand the influence that specific types of resources exert on the choice of governance structures—or, conversely, whether these structures foster the development of certain types of resources over others. From a practical standpoint, the study aims to offer wineries, rural producers, and institutions in the sector a perspective on how to coordinate the strategic resources within the value chain in order to enhance efficiency and competitive capacity.

To address the research objective, in addition to this introduction, the article includes a theoretical framework section, which presents the foundations of Transaction Cost Economics (TCE) and the Resource-Based View (RBV), followed by a complementary analysis of these theories. The third section outlines the methodological procedures employed, followed by the analysis of the results. Finally, the article presents concluding remarks and the references used.

2 Theoretical foundation

This section presents the theoretical framework related to Transaction Cost Economics (TCE) and the Resource-Based View (RBV), as well as their complementary relationship. This relationship is important as it enables a more detailed understanding of governance structures in conjunction with firm resources.

2.1 Transaction Cost Economics (TCE)

Transaction Cost Economics (TCE) was developed from the studies of New Institutional Economics (NIE). More specifically, Coase's (1937) seminal work The Nature of the Firm argued that firms face costs beyond those associated with production (i.e., fixed and variable costs), which are typically considered the operational costs of a firm in the market. The costs addressed by Coase (1937) in his article are the same ones that were later termed transaction costs by Williamson (1985).

Williamson (1985) sought to develop a theoretical framework to analyze coordination aspects of both intra-firm and inter-firm relationships. From this effort emerged Transaction Cost Economics (TCE), which encompasses discussions on behavioral assumptions, transaction attributes, and governance structures inherent to organizational coordination relationships.

Bounded rationality and opportunistic behavior are key behavioral assumptions influencing transactions, as identified by Williamson (1985). Bounded rationality refers to the notion that while individuals are rational and seek to maximize profit in negotiations, they do so within the limits imposed by informational constraints (Ketokivi & Mahoney, 2020; Saes, 2009; Williamson, 1985). Opportunistic behavior, in turn, can be described as the pursuit of self-interest with guile within the context of a negotiation (Williamson, 1985, 1991).

With respect to transaction attributes, Williamson (1985) identifies uncertainty, frequency, and, notably, asset specificity as determinants in the selection of governance structures. According to Williamson (1985) and Schnaider et al. (2018), uncertainty is always present whether to a greater or lesser extent and arises from the complexity of changes in the economic environment. Uncertainty is characterized by the inability to make accurate assessments about a given field and the imprecision of information available in the sector (Williamson, 1985).

Frequency, on the other hand, refers to how often assets are transacted. Transactions may occur as one-time, occasional, or recurring purchases (Williamson, 1985). Depending on how frequently the transaction occurs, opportunistic behavior may be reduced through the relationship established between the parties involved (Kosaka et al., 2019; Ménard, 2004), thereby lowering costs related to contract design (Ménard, 2004, 2021; Williamson, 1985).

According to Williamson (1985, 1991) and Oliveira et al. (2019), assets may be tangible or intangible, and their specificity refers to the degree to which an asset can be redeployed for an alternative use without sacrificing its productive value. Specific assets are those that lose value when transacted through the market (Cunico et al., 2020). Based on this, Williamson (1985, 1991) proposes six types of asset specificity, as presented in Table 1.

Table 1. Types of Asset Specificity

Type of Asset Specificity	Description
Site	Specific location of a given activity, offering advantages such as cost reduction and lower transportation expenses.
Physical	Specialized equipment or materials.
Human	Specialized workers and managers.
Dedicated	Investment is dependent on returns linked to a particular agent or a specific activity.
Brand	Represents distinctive importance for the activity.
Temporal	Refers to the perishability of the product or the depreciation of the asset over time.

Source: elaborated from Williamson (1985, 1991).

Behavioral assumptions and transaction attributes directly influence the choice of governance structures, which are classified as market, hybrid forms, and vertical integration (Schnaider et al., 2018; Williamson, 1985; Zylbersztajn, 2018). The free market structure is more suitable in contexts of low asset specificity, as transaction costs are lower in such cases, the identity of the transacting parties is irrelevant, and price is the determining factor in carrying out the negotiation (Williamson, 1985, 1991).

Vertical integration is more efficient in situations characterized by high asset specificity, recurring transaction frequency, and high uncertainty within the sector (Caunetto et al., 2024;

Ketokivi & Mahoney, 2020; Williamson, 1985, 1991). As a way to avoid transaction costs, in vertical integration structures, transactions are carried out within the same firm in a unified manner (Crook et al., 2013; Williamson, 1985). Hybrid forms (contracts), in turn, can be understood as transactions carried out between two or more firms engaged in long-term relationships. These arrangements are employed to facilitate exchanges involving assets of medium specificity (Caunetto et al., 2024; Ménard, 2004, 2021; Schnaider et al., 2018; Williamson, 1985, 1991).

2.2 Resource-Based View (RBV)

According to Porter (1985), a firm's competitive advantage arises from performing strategic activities within the value chain more cost-effectively or efficiently than its competitors. On the other hand, while competitive advantage remains the ultimate goal for firms seeking to create greater value, the Resource-Based View (RBV) is a theory of strategic management that posits the possession of strategic resources as the key to achieving competitive advantage (Barney et al., 2021; Fortes & Souza, 2020; Haseeb et al., 2019). Therefore, RBV is grounded in the creation, development, and analysis of resources and capabilities as sources of competitive advantage (Barney, 1991; Barney et al., 2021). These resources are grouped into four categories, as illustrated in Table 2.

Table 2. Types of Firm Resources

Types of Resources	Description
Human	Training, education, experience, intelligence, relationships, and the individual vision of managers and staff.
Physical	Technology, physical infrastructure, machinery, equipment, geographic location, factory layout, and access to raw materials.
Financial	Available monetary capital, whether from entrepreneurs, shareholders, creditors, or banks, as well as investments and profits.
Organizational	Formal structure, formal and informal systems of planning, control, and coordination, coordinated systems, reporting structure, informal relationships among groups within the company, culture, and reputation.

Source: Elaborated from Barney & Hesterly (2017).

To identify the strategic potential of a firm's resources and capabilities, the works of Barney (1991) and Peteraf (1993) are particularly noteworthy. According to Barney (1991), the RBV analysis is centered on the attributes a resource must possess to be considered a source of competitive advantage. Thus, a resource must be valuable, rare, costly to imitate, and non-substitutable. Peteraf (1993), in turn, outlines the necessary conditions that resources must meet to be deemed strategic, such as heterogeneity, immobility, and ex ante and ex post barriers to competition.

In this sense, Barney's (1991) contribution lies in the "inward" perspective looking inside the firm. The source of sustainable competitive advantage, therefore, resides in the resources a firm is able to generate that are inaccessible to competitors. Peteraf's (1993) contribution, on the other hand, consists in proposing a model capable of explaining sustainable competitive advantage through heterogeneous (superior capabilities) and immobile (scarce in the market) resources).

2.3 Complementary relationship between resources and governance structures

As previously discussed, both TCE and RBV possess distinct characteristics when addressing firm efficiency and boundaries. In this regard, several authors suggest that a complementary analysis may be conducted in terms of governance structures and resources (Argyres & Zenger,

2012; Augusto & Souza, 2012; Augusto et al., 2018; Chaves et al., 2024; Crook et al., 2013; Perito et al., 2017; Watanabe et al., 2016). However, no studies were found that specifically analyze the different types of resources and their configuration in relation to governance structures. Thus, this section presents the complementarity between TCE and RBV, considering how the four types of resources identified by Barney & Hesterly (2017) are situated within different governance structures.

Resources and capabilities, classified as physical, human, organizational, and financial (Barney, 1991; Barney & Hesterly, 2017), constitute the foundation of a firm's strategic positioning (Peteraf, 1993). However, RBV does not provide mechanisms for coordinating these resources (Foss, 2005), nor does it offer tools to safeguard the value they generate (Argyres & Zenger, 2012). On the other hand, TCE offers coordination structures (Foss, 2005) that can be employed to manage and protect a firm's resources (Augusto et al., 2018; Brasil et al., 2019; Saes, 2009).

It is important to note that although RBV does not, within its theoretical framework, address governance structures as TCE does it does advocate for the internal development of resources as a source of competitive advantage. Thus, the assumption that competitive advantage is derived from resources developed within the firm suggests a rationale for adopting vertical integration (Argyres & Zenger, 2012; Augusto et al., 2018; Crook et al., 2013; Foss, 2005). However, some studies indicate that firms do not always opt for vertical integration to coordinate their competitive resources, often resorting to other governance structures, such as hybrid forms or contractual arrangements (Augusto et al., 2017; Cunico et al., 2020; Chaves et al., 2024).

In this sense, it is possible to identify specific situations in which the value of strategic resources can also be coordinated through hybrid forms. On this matter, Augusto et al. (2017) argue that hybrid forms emerge as an alternative that allows firms to develop different means of protecting strategic resources without incurring the higher costs associated with vertical integration. Furthermore, it has been found that resources do not arise solely from internal sources, but also through a combination of external factors, as is the case with contractual arrangements (Augusto et al., 2017). Cunico et al. (2020) propose that, under certain conditions, interdependence among value chain actors is crucial to achieving specific production standards. Supporting this line of reasoning, Windsperger et al. (2018) affirm that hybrid forms enable firms to achieve superior performance by collaborating with other actors involved in specific activities within the value chain. Finally, Chaves et al. (2024) state that hybrid forms make it possible to access strategic resources through contracts, especially in the case of small rural producers.

Considering the above, the following section seeks to highlight how some studies albeit in an isolated and non-focused manner have addressed the role of different types of resources human, physical, organizational, and financial in relation to the governance structures adopted by the organizations in question. The discussion takes into account both vertical integration and contractual arrangements, aiming to bring together research findings related to all four types of resources.

With regard to **human resources**, within a vertical integration structure, these resources provide competitiveness to the firm that possesses them, as they involve the development of high-value assets based on employees' cognitive abilities and innovation capacity (Barney, 1991; Stranieri et al., 2021; Wright et al., 1994). In addition, internally, qualified and experienced human resources can offer significant advantages to firms that leverage them (Haseeb et al., 2019), due to their high learning capacity (Trienekens, 2011) and adaptability to market conditions

(Stranieri et al., 2021). In contractual arrangements, human resources are identified as an option for firms lacking specific knowledge or technical expertise in certain production processes (Augusto et al., 2017), allowing for the creation of a joint learning relationship by fostering an environment of knowledge and idea sharing (Huang et al., 2020). Moreover, hiring specialized labor can also lead to greater efficiency and product quality (Oliveira et al., 2019). Contractual structures are also important for the sharing of technical knowledge, especially in the case of small rural producers, as they provide the processing link in the chain with the quality and consistency required for production (Chaves et al., 2024).

With regard to **physical resources**, under vertical integration, it has been observed that they generate competitiveness for the firm that possesses them, particularly in terms of access to raw materials and inputs (Trienekens, 2011), strategic location in terms of road access, proximity to other actors, and favorable climatic conditions (Brasil et al., 2019). Additionally, it has been shown that the possession of highly specialized physical resources and advanced technologies leads firms to safeguard their value internally (Augusto et al., 2018; Fernández-Olmos et al., 2009). In contractual arrangements, physical resources provide access to production inputs without requiring investment in physical infrastructure (Rosales et al., 2019). They also enable the transaction of raw materials and technology through contractual safeguards (Augusto et al., 2017; Kosaka et al., 2019). According to Augusto & Souza (2012), the location of an asset can also be considered a strategic resource acquired through contracts—for instance, in lease-type partnerships with landowners located near distilleries. This proximity reduces costs and creates competitive advantage (Augusto & Souza, 2012).

With regard to **organizational resources**, Brasil et al. (2019) indicate that specific processes related to control and poultry management practices are effectively protected in terms of value appropriation under a vertical integration structure. Furthermore, according to Wright et al. (1994), the internal environment fosters the development of a culture that engages all employees. Specifically, Watanabe et al. (2016) point out that, in the wine value chain, tradition tied to organizational culture is extremely relevant for wineries. In contractual arrangements, long-term relationships represent the organizational resource with the greatest strategic potential, as collaboration among value chain actors can generate increased value for the organization (Cunico et al., 2020; Huang et al., 2020; Kosaka et al., 2019).

With regard to **financial resources**, companies with easier access to financial capital for investment tend to have a greater capacity to adopt vertical integration (Acemoglu et al., 2009; Macchiavello, 2012). Therefore, in the presence of funding sources or ease of obtaining credit, firms are more likely to choose vertically integrated structures as a means to expand their operations and achieve economies of scale (Macchiavello, 2012). In contractual arrangements, joint investments can lead to higher profits and risk sharing, in addition to enhancing the conditions for co-specificity and value co-creation among actors (Huang et al., 2020). Moreover, financial interdependence between agents may contribute to the maximization of joint gains (Rosales et al., 2019).

2.4 Fine wine and grape value chain

Viticulture is an activity that involves the production of grapes for the manufacturing of wines, sparkling wines, juices, jams, and other grape-based products (Mello, 2018). Wines can be classified as either fine or table wines. Fine wines are produced using European wine grapes of the species *Vitis vinifera*, whereas table wines are made from American grape varieties,

such as *Vitis labrusca* and *Vitis bourquina*, or even from hybrid grapes, which result from the crossing of vinifera and American varieties (Moura et al., 2021; Niederle, 2011).

The grape species known as *Vitis vinifera* is characterized by its thin skin and high quality, making it highly suitable for the production of fine wines (Moura et al., 2021). Among the most well-known vinifera grape varieties are: Cabernet Sauvignon, Cabernet Franc, Syrah, Pinot Noir, Merlot, Malbec, Chardonnay, Sauvignon Blanc, and Moscato Branco, among others.

The grape vinification process is largely the same for all types of wine, with minor differences depending on whether red, white, rosé, or sparkling wines are being produced. For example, in the production of white wine, the grape skins are removed and the must undergoes a clarification process before fermentation. In contrast, in the production of red wine, both the skins and seeds are used to help incorporate color and flavor into the wine (Bortoletto et al., 2021). Moreover, differences between wines may also arise from the variation in grape varieties and the characteristics of the region in which they are cultivated, such as temperature, humidity, and solar radiation (Hoeckel et al., 2017). These distinctions, which define the identity of each wine, are associated with the concept of terroir (Niederle, 2011; Tonietto, 2007). According to Tonietto (2007), terroir encompasses much more than the environmental and climatic aspects of grape cultivation it also includes human labor, machinery, and equipment used throughout the winemaking process.

3 Methodology

This article is qualitative, descriptive, and theoretical-empirical in nature, with a cross-sectional design covering the years 2022 and 2023. The field research relied on both primary and secondary sources and was conducted in two stages. The first stage involved the collection of secondary data from (a) documents and articles on the wine sector, and (b) news from state government websites and sector associations. The second stage consisted of gathering primary data through semi-structured interviews with (a) fine wine wineries, (b) their suppliers, and (c) a representative from the VINOPAR association.

The selection of interview participants was based on specific criteria. The study targeted fine wine wineries located in Paraná that were members of VINOPAR. This criterion was adopted because VINOPAR represents one of the main winegrowers' associations in Paraná and also served as a means to obtain support in contacting the wineries included in the study. VINOPAR is an association formed by the wineries themselves as a way to support one another and strengthen viticulture within the state.

Additionally, the focus was placed on fine wine producers because, besides being the type of wine experiencing continuous growth in the state (Mello & Machado, 2022), the cultivation of grapes used in fine wine production requires special care to maintain quality. This demands more from both the production and processing stages, requiring higher investments and stricter control over production processes. The interviewees were representatives of the wineries who agreed to participate in the research. The wineries that accepted to participate represent 69% of those affiliated with VINOPAR. The interviewed wineries are presented in Table 3.

Table 4 presents the corresponding suppliers for the wineries listed in Table 3. The suppliers were chosen based on recommendations from the participating wineries, selecting those that are most frequently used. This approach allows for a more accurate identification of the wineries' suppliers and facilitates an exploration of the transactional relationship between the production and processing links.

Table 3. Wineries Participating in the Study

Identification	Years in Operation	Size	Employees	Interviewee	Position
Winerie A	40	Small to medium	4	Interviewee A	Winemaker and Director
Winerie B	14	Small	12	Interviewee B	Co-owner
Winerie C	9	Small	3	Interviewee C	Technical Manager
Winerie D	17	Small	5	Interviewee D	Chief Operating Officer
Winerie E	123	Medium	7	Interviewee E	Sommelier
Winerie F	8	Small	19	Interviewee F	Founding Owner
Winerie G	9	Small	13	Interviewee G	Owner and Director
Winerie H	30	Medium	15	Interviewee H	Owner and Manager
Winerie I	4	Small	2	Interviewee I	Owner
VINOPAR Representative	4	-	-	VINOPAR Representative	Executive Secretary of VINOPAR

The size of the wineries was estimated based on production volume information provided by their representatives during the interviews.

Source: elaborated by the authors.

Table 4. Suppliers Participating in the Study

Identification	Years in Operation	Property Size (hectares - ha)	Employees	Winerie
Supplier 1	12	300 ha with 10 ha of fine grapes	3	Winerie E
Supplier 2	23	74 ha with 14 ha of fine grapes	3	Winerie B
Supplier 3	30	7 ha	6	Winerie H

Source: elaborated by the authors.

Three interview guides were developed one for the wineries, another for the wineries' suppliers, and finally one for the VINOPAR representative. Essentially, the three guides are identical, with only minor adjustments made according to the reality of each interviewee. It is important to note that, regarding the questions about resources, the same set of questions was asked for each type of resource in order to identify which types of resources each winery possesses and which are strategic for each one. In general, the questions included in the interview guide are presented in Table 5.

The interviews were conducted in person and online between October 2022 and February 2023, totaling 15 hours and 38 minutes of audio recordings, which were subsequently transcribed.

For data analysis, Bardin's (2007) content analysis technique was employed. This technique comprises three stages: pre-analysis, material exploration, and inference and interpretation of the data. In this study, the pre-analysis stage included the definition of the theme, objectives, theoretical framework, methodology, and data collection, guided by both secondary data (articles and documents on viticulture) and primary data (semi-structured interviews).

In the material exploration stage, all documents constituting the research corpus were analyzed according to the theoretical framework, and coding was performed by segmenting the

research and classifying categories. The objective was to collect information on the fine wine sector to give meaning to the proposed objective. Thus, the segmentation involved identifying statements from the interviewees or important excerpts from the documents and assigning them to the most appropriate analysis category.

Table 5. Interview Guide Questions

Theory	Points Discussed in the Interview Guide	Description
TCE	Asset Specificity	Is the grape used in the production of fine wines a standardized product that can be easily sourced from any supplier, or does it have any specific characteristics? If so, what are they? (Explore the types of specificity: local, physical, human, dedicated, brand, and temporal.)
	Uncertainty	In this sector, is there any uncertainty involved in the purchase of grapes or in the fine wine production process?
	Opportunistic Behavior	Have you ever witnessed or experienced any form of opportunistic behavior, meaning that someone acted in bad faith during negotiations?
	Bounded Rationality	Do you believe that one party in the transaction can have superior or privileged knowledge compared to the other party?
	Frequency	How long has the winery been purchasing grapes from third parties? What criteria are used to select suppliers? What is the frequency of purchase?
	Governance Structures	In the case of in-house grape production, how does this process work at the winery? Could you describe it? In the case of purchasing from third parties, how does this process work at the winery? Are there formalized contracts, or are the agreements more informal?
RBV	Types of Resources: Human, Physical, Organizational, and Financial	What types of resources does the company possess? (This question is asked for each type of resource analyzed.)
	Strategic Resources (VRIO): Valuable, Rare, Costly to Imitate	(if rare resources are identified): If there are rare resources, are these resources costly and difficult for competitors to imitate (I)? Why? Are there situations involving pioneering efforts, technological complexity, differentiated HR practices, or patents that contribute to the difficulty of imitating these resources?
TCE +RBV	Question to understand complementarity	Among these reported resources, which ones are held in-house by the company (vertical integration) and which ones are external to the winery, forming part of its relationships with third parties (via contracts, informal agreements, and/or market transactions)?

Source: elaborated by the authors.

Regarding the analysis categories, they were chosen based on the RBV and TCE theories. For this study, the following analysis categories were selected: 1) market; 2) hybrid forms; 3) vertical integration; 4) human resources; 5) physical resources; 6) organizational resources; 7) financial resources; and 8) VRIO: valuable, rare, and difficult-to-imitate resources. These categories can be visualized in Figure 1.

Figure 1 first considers the governance structures adopted by the wineries in the sector. Next, it includes the human, physical, organizational, and financial resources with strategic potential, as identified by the VRIO framework. The direction of the arrows reflects the study's

objectives and theoretical framework, indicating how strategic resources can develop into competitive advantages given the governance structures implemented by the wineries. Finally, Figure 1 presents the production and processing links, where transactions and relationships between agents occur, and where resources and capabilities are developed.

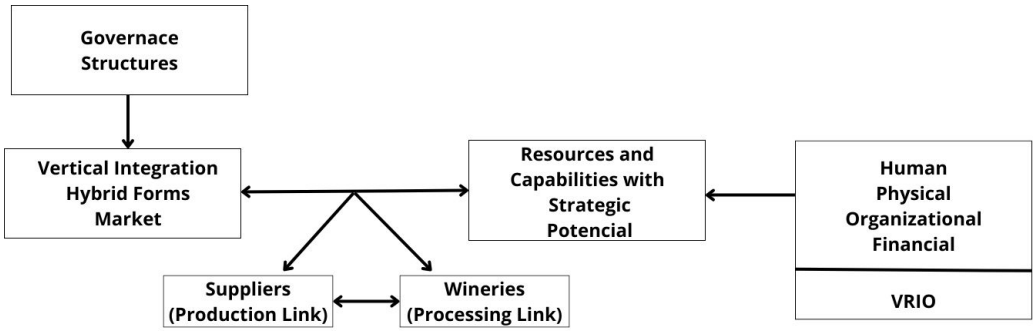

Figure 1. Analysis Categories.

Source: elaborated by the authors.

In the material exploration stage, Atlas.ti software was used to assist in coding, segmenting, and categorizing the interviewees' statements according to the corresponding categories. The final stage of content analysis involved drawing inferences and interpreting the data. In this phase, the interpretation of the field data (semi-structured interviews) was conducted by comparing it with the theoretical framework and the secondary data collected during the pre-analysis. Once the information was organized, the content belonging to each category was analyzed, highlighting the essential elements needed to address the proposed objective.

To enhance the validity and reliability of the research, the data triangulation technique described by Yin (2015) was employed. In this study, triangulation was carried out using both secondary data and semi-structured interviews with agents from the Paraná fine wine sector (fine wine wineries, their suppliers, and the VINOPAR representative). Since three different interview guides were used for each group of interviewees, the responses can be considered to come from distinct sources of information.

4 Results and discussion

In this section, the governance structures are discussed, followed by the identification of the strategic resources present in the production and processing segments of fine wine. Finally, a parallel is drawn to understand how these strategic resources are configured in relation to the governance structures employed by the wineries studied.

4.1 Governance structures in fine wine wineries

The basic assumptions of Transaction Cost Economics (TCE) state that transaction attributes namely asset specificity, frequency, and uncertainty along with behavioral assumptions such as bounded rationality and opportunistic behavior, are responsible for determining the choice of governance structures in an economic sector. In the case of the fine wine winery sector, the same elements are observed, along with their implications for the coordination of wineries.

Regarding transaction attributes, **asset specificity** is particularly present in fine grapes, which are characterized as a fundamental input in fine wine production. This is because fine

grapes exhibit local, physical, human, dedicated, brand, and temporal specificity, as defined by Williamson (1985, 1991), and described in Table 6.

Table 6 - Asset Specificity in Transactions Involving Fine Grapes and Fine Wine

Type of Specificity	Description
Physical Asset Specificity	- The fine grape is responsible for providing the quality, flavor, aroma, and color to fine wine.
	- Fine wine also exhibits specificity, as it is produced using more specialized processes and techniques.
Local Asset Specificity	- It refers to the location where the grapes and fine wine are produced.
	- The quality of the grape is linked to the area where the vineyard develops, encompassing the concept of terroir.
Dedicated Asset Specificity	- It refers to the investments and the structures related to the vineyard and winemaking facilities.
	- It is characterized by high initial investments in establishing the vineyard infrastructure, followed by relatively low maintenance costs.
	- The winemaking facility comprises equipment dedicated to wine production and aging, which may also be used for table wine production.
	- Wineries sometimes rent equipment from one another.
Temporal Specificity	- It refers to the time from harvest until the beginning of winemaking, and it is also related to the grape harvest season.
	- The grape must reach the required sugar level at harvest, as this affects the final quality of fine wine, and harvesting cannot take place on rainy days because rain interferes with its sugar content;
	- After harvest, the grape must be immediately taken to the winery, transported in temperature-controlled vehicles to avoid premature fermentation.
	- The time between the grape delivery and its fermentation has a significant impact on wine quality.
Human Capital Specificity	- Both grape production and wine production require specific management techniques.
	- It involves winemakers, agronomists, and laboratories.
Brand Specificity	- It occurs due to the importance of the reputation of the transaction agents and the brand of the grape and fine wine.

Source: elaborated by the authors.

Fine grapes have high added value, which is why they are almost exclusively used in fine wine production. This exclusivity makes the grape a highly specific asset, since repurposing it for other uses would diminish its original value (Cunico et al., 2020; Oliveira et al., 2019; Williamson, 1985, 1991).

In terms of **transaction frequency**, it was observed that the recurring purchases made by wineries in this sector are marked by the annual grape harvest. However, according to the interviewees, the relationships occur throughout the year, as many wineries visit their suppliers to monitor and provide support in grape production. Thus, the frequency of transactions can be considered recurring, since the relationship between the parties goes beyond one-off purchases, as described by Williamson (1985).

Uncertainty, in turn, was also identified in the vitiwinerie sector. It manifests as uncertainties related to the economic environment, climatic and environmental conditions, fluctuations in demand, competition, and unpredictability in supplier relationships—all of which can be further exacerbated by opportunistic behavior (Schnaider et al., 2018; Williamson, 1985, 1991).

Regarding the behavioral assumptions, the study examined the presence of bounded rationality and opportunistic behavior. Concerning bounded rationality, interviewees were asked whether they believed that one party could possess superior or privileged knowledge relative to the other party in the transaction. When interviewees answered affirmatively, they were prompted to provide an example to better understand the situation. Thus, **bounded rationality** was primarily identified as a cognitive limitation (Williamson, 1985, 1991) affecting the transaction between the rural producer and the winery, as illustrated by Interviewee A: "[...] It's a matter of knowledge; the producer is always more limited, right? The producer is more humble [...]". On the other hand, some interviewees reported that the knowledge available in the transaction is relatively equal for both suppliers and wineries, owing to the shared expertise and the laboratory analyses of both the grapes and the wine.

Opportunistic behavior was reported in situations involving grape harvest timing, unfair competition, and defaults. However, although some interviewees mentioned these instances, many others stated that they had neither witnessed nor experienced opportunistic behavior within the fine wine chain. It was determined that opportunism in the analyzed wineries does not occur frequently enough to harm business operations. Additionally, long-term relationships, partnership contracts, and exclusivity agreements were observed to discourage opportunism, corroborating the findings of Rosales et al. (2019), Saes (2009) and Ménard (2004, 2021).

Considering the presence of uncertainties in the sector, recurring transaction frequency, high asset specificity, cognitive limitations, and instances of opportunism, the governance structures identified in the wineries were hybrid forms and vertical integration.

Vertical integration is adopted by four of the nine wineries studied, while hybrid forms are present in six of the interviewed wineries. Winery A was the only one found to utilize both integration and contractual arrangements to structure its transactions. In contrast, Winery E is in the process of implementing vertical integration, as shown in Table 7.

Table 7. Governance Structures in the Investigated Wineries

Wineries	Governance Structures	Description of the Wineries
Wineries C and D	Vertical Integration.	Wineries that grow their own grapes.
Winerie A	Vertical integration and partnership contracts.	Winery that grows its own grapes but also purchases grapes from third parties.
Wineries G and I	Hybrid forms – formal contract and partnership agreement.	Wineries that grow their own grapes and outsource wine production.
Winerie E	Hybrid forms – partnership agreements and vertical integration in the implementation phase.	Winery that purchases grapes from third parties and is in the testing phase for implementing its own grape cultivation.
Winerie B	Hybrid forms – supply contracts.	Winery that purchases grapes from third parties.
Wineries F and H	Hybrid forms – exclusivity contract and informal agreement	Wineries that purchase wines from third parties and carry out the final stage of the production process

Source: elaborated by the authors.

Hybrid forms are the most commonly used governance structures among the wineries studied, taking the form of partnership contracts, formal supply agreements, informal arrangements, and exclusivity contracts. Some partnership contracts refer to the advisory support that wineries

provide to small grape producers, while the informal agreements were identified as word-of-mouth arrangements built on trust and reputation between the parties.

Hybrid forms allow wineries to purchase grapes from third parties while establishing long-term relationships that reduce the incidence of opportunistic behavior. This finding corroborates the discussions by Schnaider et al. (2018), Caunetto et al. (2024), and Augusto & Souza (2012), who affirm that the use of contracts is crucial for establishing enduring supply relationships. Additionally, these arrangements offer greater flexibility in producing wines from different grapes, with climates and soils favorable for vineyard development, without incurring fixed costs such as land and infrastructure.

Regarding **vertical integration**, it was observed that the high asset specificity particularly of grapes is one of the main reasons for its adoption by wineries. As noted by Meirelles et al. (2023), this structure involves specific assets, reduces transaction costs, and promotes control over the wine production processes, thereby ensuring the quality of grape production. This supports the argument by Crook et al. (2013) concerning the capacity to protect and control assets within a vertical integration framework.

4.2 Strategic resources in fine wine wineries

In this section, the strategic potential of the various resource types human, physical, organizational, and financial allocated in the interviewed wineries is analyzed. For this purpose, the VRIO model of Barney and Hesterly was employed (2017).

The **human resources** identified in the investigated wineries include skilled labor in grape and wine production, the experience and abilities of managers and employees, and strong interpersonal relationships among individuals or groups. Regarding skilled labor in grape and wine production, the interviewees who reported possessing this resource as strategic are those who have developed it internally. In this context, Interviewee D states: "...skilled labor in grape production is valuable, it is rare and difficult to imitate, because it is hard to train these people, find them, and recruit them at a plausible cost [...]".

Regarding the experience and abilities of managers, some interviewees reported that this constitutes a strategic resource due to the training and background of the winery managers. Concerning the experience and skills of the employees, both the wineries and their suppliers stated that to have well-qualified staff, they must be trained internally. With respect to strong interpersonal relationships, interviewees consider them strategic, as they require time to develop and depend on the establishment of trust between the parties involved.

Regarding **physical resources**, the following were identified: technology in grape and wine production, physical infrastructure for vineyards and winemaking, enotourism facilities, hardware and software, geographical location and access to raw materials, and the wines produced. Regarding technology (machinery and equipment) in grape production, only Interviewee F considered this resource strategic, due to the availability of new technology for pest control in grapes.

Concerning technology in fine wine production, there is a wide range of equipment used; however, most wineries argued that it does not constitute a strategic resource because it is relatively common in the sector. With respect to physical infrastructure, some interviewees pointed out that this resource is strategic, mainly due to its role in grape cultivation. On this matter, Supplier 2 explains: "I have an infrastructure that, in our view, meets the need—and this is extremely costly as well; it requires a large investment, from the land, its preparation, the setup of the vineyard, a series of items, roads, access, everything".

The issue of enotourism infrastructure was also raised. However, no interviewee considered this infrastructure a source of competitive advantage, as most wineries use it primarily as a lure and a distribution channel for their wines. Regarding hardware and software, interviewees classified them merely as valuable, since there is no specialized software for managing the vitiwinerie supply chain.

With respect to geographical location, many interviewees stated that it is a strategic resource, whether due to being situated on a privileged access route or because of the climate, which is extremely relevant for cultivating fine grapes. Access to raw materials was also considered strategic, though this was mostly noted by wineries that grow their own grapes. Finally, the wines produced become strategic resources through brand addition, which reflects the winery's history and tradition.

Regarding **organizational resources**, planning systems, research and development, control over grape and wine production, culture, and reputation were identified. Concerning planning systems in grape and wine production, only Winery D declared this resource to be strategic:

> [...] We developed internally, for both grape production and wine production, individualized process spreadsheets for management and production that are tailored to our reality, our grapes, our management approach, and the specific processes used for each of our wines. This is difficult to replicate.

Regarding control systems in grape and wine production, most interviewees indicated that these systems are merely valuable, as they are relatively common. With respect to research and development, according to Winery D, this resource is strategic because it enables the establishment of long-term partnerships with regional agents and represents a resource that no other interviewee claimed to possess at the time of the interviews.

Regarding the company's culture and reputation, these were the most important organizational resources and were considered strategic by the majority of the interviewees. Concerning culture, it was observed that, since these are strictly family-owned and small businesses, the prevailing culture in the wineries stems from the values of the owner. In this context, Suppliers 1 and 2 highlighted the importance of a solid culture, which reflects on the winery's reputation. According to Supplier 2, the fine wine market is very exclusive, and typically, wineries are well aware of the reputation of their suppliers. Therefore, to maintain this reputation, Supplier 2 stated that they work with high-quality grapes, striving to establish long-term partnerships with their buyers.

Regarding the financial resources highlighted by the wineries, these include investment capacity, credit and financing sources, cash flow, working capital, and profits. Investment capacity is a strategic resource, particularly for the suppliers of wineries, as not all rural producers have the high investment capacity required to work with fine grapes. Therefore, those who have access to this resource in the sector gain a competitive advantage that is costly to acquire.

Regarding credit and financing sources, many interviewees reported that there is no specific credit line for wine production, which limits access to this resource. In this case, this resource becomes strategic for wineries that have their own grape plantations, as it serves as a differentiator compared to those that do not. Finally, cash flow, working capital, and profits are linked to the effective functioning of the wineries. Thus, Table 8 shows the types of resources and the wineries in which these resources were identified based on the interviews conducted.

Overall, it was observed that the strategic resources identified are those that require time to develop such as skilled labor or company culture and reflect the unique reality of each winery. This finding aligns with the literature on path dependence, where unique historical conditions lead certain resources to develop and become unique and heterogeneous (Barney, 1991; Peteraf, 1993; Wright et al., 1994). The concept of path dependence is also related to culture and reputation, as these elements are built over time between the parties in a transaction, consistent with the arguments of Barney (1991) and Peteraf (1993).

Table 8. Summary of Strategic Resources Identified in the Wineries

Types of Resources	Strategic Potential (Rare and Costly to Imitate)	Possessing Strategic Resources
Human	Qualified labor in grape production (which also involves having an agronomist within the winery)	A; C; D; G and I
	Qualified labor in fine wine production (which also involves having enologists within the winery)	A; C and E
	Experience and skills of managers	G
	Experience and skills of employees	B and H
	Good relationships among individuals or groups of people	D; E and F
Physical	Modern technology (machinery and equipment) for grape cultivation	F
	Physical infrastructure for grape production and/or wine production	C; E; F and I
	Enotourism facilities	F
	Privileged geographic location	A; E; F; G and H
	Access to high-quality raw materials	A; C; D; G and I
	Wines produced	D and E
Organizational	Planning systems for grape and wine production	D
	Research and development	D
	Company culture and reputation	A; C; D; E; F; G and I
Financial	Investment capabilities	Supplier 1 and 2
	Credit / Sources of financing	A and D

Source: elaborated by the authors.

Conditions related to pioneering were also identified as strategic, corroborating Barney & Hesterly (2017). For example, pioneering wineries enjoy a privileged location relative to others, both in terms of access routes and vineyard placement. Additionally, regarding human resources, there is evidence of causal ambiguity and social complexity since, as Barney et al. (2021) indicate, the development of human relationships is one of the most complex processes. It is also important to note the imperfect immobility of certain resources, particularly those related to location, access to raw materials, or technology, as significant investments may be required for competing wineries to acquire a similar resource, thereby creating barriers to competition (Peteraf, 1993).

4.3 Governance structures and strategic resources in fine wine wineries

The idea behind the complementarity of theories in the present investigation is to highlight how strategic resources are aligned with the adopted governance structures (vertical integration and contracts). Within the investigated wineries and also among their partners in the value chain a series of essential resources for the operation of fine wine production are identified, which are classified as human, physical, organizational, and financial. Some of these resources have been identified as strategic and sources of competitive advantage because they are valuable, rare, and costly to imitate (Barney & Hesterly, 2017; Barney et al., 2021), in addition to being associated with aspects such as path dependence, heterogeneity, imperfect mobility, and barriers to competition (Barney, 1991; Barney et al.,2021; Peteraf, 1993; Saes, 2009).

Considering the discussion on strategic human resources, it was found that, for the most part, they are integrated within the wineries. An example is the qualified labor for grape and wine production which, when developed internally, acquires unique characteristics that reflect

the specific processes of each winery (Stranieri et al., 2021; Wright et al., 1994). Thus, it can be observed that the adoption of vertical integration has enabled the creation of an internal environment conducive to the development of human resources (Wright et al., 1994) due to learning (Trienekens, 2011), qualification (Haseeb et al., 2019), and the cognitive capacity of the employees (Barney, 1991; Stranieri et al., 2021; Wright et al., 1994). This finding corroborates the discussion by Argyres & Zenger (2012), who assert that vertical integration can play a fundamental role in developing valuable resources.

Regarding the outsourcing of strategic human resources, it was found that this occurs when one of the agents lacks the necessary tools, knowledge, or techniques to perform production internally (Chaves et al., 2024; Huang et al., 2020). This dynamic can be observed in the relationship between Winery I and Winery D. In this case, the wineries establish a partnership where Winery I, focused on the cultivation of fine grapes, uses the facilities of Winery D to vinify its grapes. This scenario supports the findings of Augusto et al. (2017) and Oliveira et al. (2019), who suggest that outsourcing occurs when one party lacks the technical expertise or capacity to carry out a specific production process. According to Chaves et al. (2024), outsourcing of human resources is also important for sharing and expanding technical knowledge of the production process.

Among the strategic physical resources integrated within the wineries are the physical infrastructure for grape and wine production, geographic location, and access to raw materials. These integrated resources enable the wineries that possess them to maintain greater control, making them strategic for the production process. This finding aligns with Augusto et al. (2018) and Fernández-Olmos et al. (2009), who indicate that vertical integration is the preferred structure for safeguarding the value of physical resources essential to a company's operations. The integration structure also protects and helps Safeguard physical resources such as access to raw materials (Trienekens, 2011) and location (Brasil et al., 2019), especially regarding soil and climate conditions for wineries that produce their own fine grapes.

On the other hand, outsourcing physical resources to suppliers such as technology for grape production, physical infrastructure, and location enables wineries to access strategic resources essential for wine production. Since these resources remain with the suppliers, wineries do not need to invest in establishing vineyards or securing locations with suitable climates for grape cultivation. This notion is supported by Rosales et al. (2019) and Augusto & Souza (2012), who discuss outsourcing as a means to reduce internal fixed costs. Additionally, Huang et al. (2020) emphasize the importance also noted in the present research of forming partnerships to create a shared environment between suppliers and buyers.

Regarding strategic organizational resources, the planning system for grape and wine production, only Winery D considers this resource strategic. The motivation stems from the development of techniques and processes that, when kept in-house, provide greater control and protection against the appropriation of these resources. In this context, vertical integration contributes to such protection, as discussed by Brasil et al. (2019).

Regarding culture and reputation, all interviewees classified them as strategic resources. Consequently, these resources are present both within the wineries and among their suppliers along the chain. Internally, culture and reputation promote higher employee adherence to the company's processes (Wright et al., 1994). Moreover, elements such as terroir (Niederle, 2011; Tonietto, 2007) and tradition (Watanabe et al., 2016) are critical strategic resources for fine wine wineries, being intimately linked to the companies' culture and reputation. Externally, among suppliers, these resources are important in transactions because they reflect the trust between the parties. Thus, culture and reputation enable wineries and suppliers to build strong,

long-term relationships with their partners, as advocated by Cunico et al. (2020), Huang et al. (2020), Kosaka et al. (2019), and Ketokivi & Mahoney (2020).

As for financial resources with strategic character, these are found both within the wineries and among their suppliers. Such resources are essential for sustaining operations, acting as support in transactions and in the development of other strategic resources (Acemoglu et al., 2009; Barney & Hesterly, 2017; Macchiavello, 2012). In vertically integrated wineries, credit and financing sources are recognized as strategic resources because, while there are specific credit lines for agricultural activities, there are none for wine production—giving integrated wineries a competitive advantage. This observation is in line with Macchiavello (2012), who argues that companies with access to credit and financing sources tend to have more integrated structures, thereby creating a financial entry barrier for the sector. Additionally, wineries that possess this resource also establish competitive barriers for new entrants, as discussed by Peteraf (1993).

When asked about the strategic financial resources available in the value chain, supplier interviewees identified investment capacity as one of these resources. This is due to the difficulty of obtaining financial resources in the sector, given the high initial investments required by the vitiwinerie activity. Thus, in the context of outsourcing between wineries and suppliers, this strategic resource is crucial for generating value for both parties, as they depend on each other. This aligns with Huang et al. (2020) regarding the importance of value co-creation in long-term partnerships, and it corroborates Rosales et al. (2019), who discuss how collaboration between chain agents can enhance gains and improve process efficiency.

Strategic resources of human, physical, organizational, and financial nature are found in both the production and processing segments of the fine wine chain. Consequently, these resources are present in wineries that use vertical integration as well as those that operate through contractual transactions. Moreover, it was found that governance structures can influence the development of strategic resources just as much as these resources can influence the choice of the most appropriate governance structure (Argyres & Zenger, 2012; Augusto et al., 2017). This is because, in the field research, some wineries were established with the concept of vinifying their own grapes and, over time, developed and refined the resources involved in that process, while others, already possessing certain resources, opted to integrate or outsource specific stages of the production process.

Figure 2 illustrates how strategic resources are configured in relation to governance structures. It was found that vertical integration, although adopted by only four of the nine wineries studied, is the structure that possesses the most strategic resources. In this case, human resources particularly skilled labor and physical resources, which are directly involved in the production process of both grapes and wine (such as infrastructure, location, and access to raw materials), stand out. However, organizational and financial resources are also significant in the sector, especially regarding culture, reputation, and access to credit and financing sources, respectively. Moreover, the quality of grape production and control over internal processes were the main reasons cited by the interviewees for integrating the production stages that involve these resources (Augusto & Souza, 2012; Augusto et al., 2018; Crook et al., 2013).

Another key point was that the internal environment of the wineries favored the development, value addition, and protection of resources with competitive potential (Augusto et al., 2018; Watanabe et al., 2016; Wright et al., 1994). It was also found that tradition and the possibility of creating a terroir are essential and highly desired aspects in the wine chain sector (Niederle, 2011; Tonietto, 2007). These factors were identified as critical reasons why wineries predominantly opt for vertical integration, which corroborates the findings of Watanabe et al. (2016) in their study on wineries. In a sense, wineries aim to fulfill the requirement of tradition vinifying their

own grapes with a distinctive terroir by integrating the stages of their production. However, when they are unable to grow or vinify their own grapes due to a lack of resources, such as vineyard infrastructure, suitable climate, skilled labor, or optimal location, they seek to access these resources through external supply relationships.

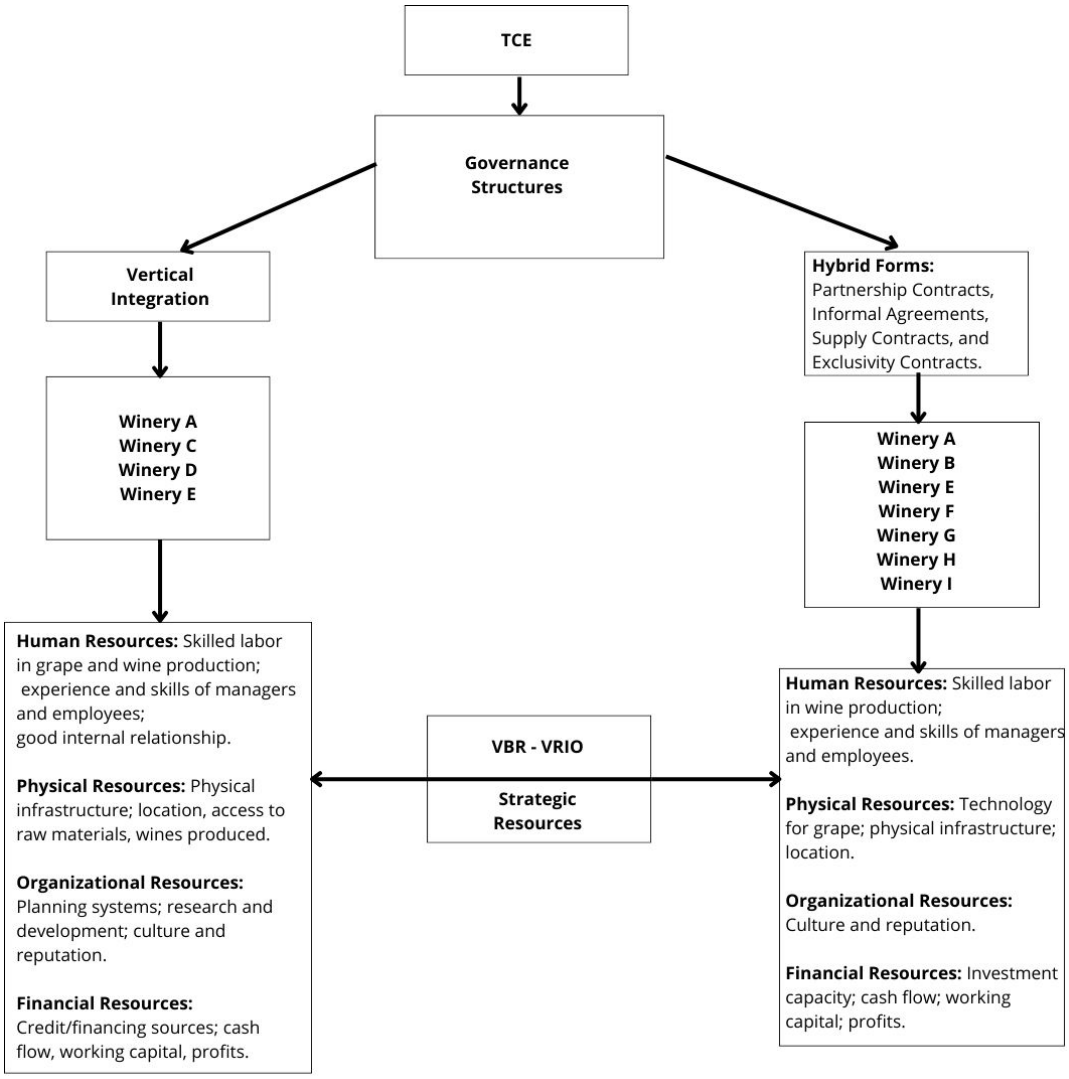

Figure 2. Strategic Resources and Governance Structures.
Source: elaborated by the authors.

Thus, the lack of access to certain resources in wine production particularly those related to grape cultivation is one of the reasons for the use of contractual structures, which was found to be common among the interviewed wineries. Consequently, the most frequently outsourced strategic resources pertain to skilled labor (human resources), technology, physical infrastructure, and location (soil and climate) (physical resources) related to grape production. Through contracts, wineries gain access to resources such as suitable soil or climate for grape cultivation, as well as the variety available from different suppliers.

Organizational and financial resources are also present, relating to the suppliers' culture, reputation, and investment capacity. Accessing such critical resources via contracting encourages

wineries to cultivate long-term relationships, emphasizing the supplier's knowledge and reputation. According to the interviewees, hybrid forms are efficient for transactions because long-term relationships foster trust between the parties, and they allow for the protection of the value of the transacted asset and the quality of the grapes, as noted by Huang et al. (2020), Ménard (2004, 2021), and Schnaider et al. (2018). Thus, as corroborated by studies in the automotive sector (Augusto et al., 2017) and the specialty coffee sector (Chaves et al., 2024), strategic resources can also be found in contractual relationships within the fine wine chain, and this structure has proven effective in protecting and preserving their value.

5 Conclusions

The objective of the present study was to understand how human, physical, organizational, and financial resources are configured in relation to the governance structures adopted in Paraná's vitiwinerie chain. Regarding governance structures, both vertical integration and hybrid forms were identified. Among these, hybrid forms characterized by both formal and informal contracts and agreements were the most prevalent in the investigated wineries.

In terms of strategic resources, it was observed that they exist both within the wineries and are shared between the wineries and their suppliers, depending on the governance structure adopted. Notably, even though vertical integration appeared in only three of the studied wineries, it is the governance structure that most frequently encompasses resources identified as strategic. Among the most highlighted strategic resources are human resources (skilled labor for handling grapes and wine) and physical resources (physical infrastructure, location, and access to raw materials), which are directly related to the fine wine production process.

It was also noted that vertical integration occurs due to tradition (culture) and the possibility of developing a unique terroir a highly coveted element in the fine wine sector. Additionally, strategic financial resources such as investment capacity, cash flow, working capital, and profits facilitate vertical integration in wineries. The main reasons for opting for vertical integration include the opportunity for internal development of resources, the protection of the value they generate, the assurance of grape quality, and greater control over the production process.

Regarding hybrid forms, it was found that their occurrence is often driven by a lack of internal resources related to fine grape production, such as suitable soil, climate, or physical infrastructure for vineyard establishment. In addition to the need to develop competencies or skills not available in-house, other reasons for outsourcing include the possibility of working with grapes from different climates and reducing fixed costs associated with establishing a vineyard. Thus, in the case of contracting, the key resources are human (labor) and physical (infrastructure, technology for grape production, and location), since they are directly linked to the implementation of the grape and fine wine production process. Organizational resources are important for maintaining long-term relationships, and financial resources enable the financial viability of the sector's activities through partnerships between agents. Moreover, in the fine wine sector, resources related mainly to grape production such as labor, physical infrastructure, and location (including soil and climate) can be accessed through contracts without incurring the extra costs associated with vertical integration.

As a theoretical implication, the study of TCE and RBV seeks to advance the literature in two ways. First, by treating the types of resources separately in relation to governance structures, it enables a better understanding of how both theories interrelate. Second, it demonstrates that even within contractual governance structures (hybrid forms), high-value strategic resources

can be developed through cooperation among the chain's actors, reinforcing a theoretical aspect that remains under discussion in more recent articles.

In practical terms, this study offers an approach that can help managers and wineries understand how strategic resources in the vitiwinerie sector are structured. The identification of strategic human, physical, financial, and organizational resources provide managers with clear insight into the most competitive and critical resources for the fine wine production process. In terms of public policy, the study highlights the strategic resources and governance structures that can assist policy makers in promoting the development of fine wine viticulture in Paraná.

As limitations, it is noted that not all fine wine wineries in Paraná were investigated due to their refusal to participate in the research. Additionally, it was not possible to interview all the suppliers associated with the wineries under study. For future research, it is suggested to apply the model of governance structures in complementarity with strategic resources in other regions of Brazil that produce fine wines, with the aim of comparing and expanding the results of the study, or alternatively, to conduct this model's study with wineries in the region that produce table wines, in order to compare the outcomes.

Authors' contributions:

ACSS: Conceptualization, Visualization, Data curation, Formal analysis, Writing – original draft. CAA: Conceptualization, Visualization, Formal analysis, Writing – original draft, Writing – review & editing.

Financial support:

Coordination for the Improvement of Higher Education Personnel (CAPES)

Conflicts of interest:

Nothing to declare

Ethics approval:

Not applicable

Data availability:

Research data is not available

Acknowledgements:

We would like to thank the Graduate Program in Administration at the State University of Maringá (UEM), the Coordination for the Improvement of Higher Education Personnel (CAPES), and all the key informants for their valuable contributions to this work.

* Corresponding author:

Adriana Comini da Silva Santana. adrianacomini23@gmail.com

References

Acemoglu, D., Johnson, S., & Mitton, T. (2009). Determinants of vertical integration: financial development and contracting costs. *The Journal of Finance*, *3*(64), 1251-1290. http://dx.doi.org/10.1111/j.1540-6261.2009.01464.x

Agência de Notícias do Paraná – AEN. (2021). *O Paraná que faz vinhos e espumantes premiados.* Recuperado em 10 de outubro de 2021, de https://www.aen.pr.gov.br/modules/noticias/article.php?storyid=110412

Argyres, N., & Zenger, T. (2012). Capabilities, transaction costs, and firm boundaries: a dynamic perspective and integration. *Organization Science*, *23*(6), 1643-1657. http://dx.doi.org/10.2307/23362018

Augusto, C. A., & Souza, J. P. (2012). Estruturas de governança e recursos estratégicos: um estudo sobre a capacidade de resposta às leis ambientais em destilarias no estado do Paraná. *Revista de Economia e Sociologia Rural*, *50*(3), 411-434. http://dx.doi.org/10.1590/S0103-20032012000300002

Augusto, C. A., Souza, J. P., & Cário, S. A. (2017). Strategic contractual relationships in the automotive sector. *Revista de Administração*, *52*(4), 443-455. http://dx.doi.org/10.1016/j.rausp.2017.08.006

Augusto, C. A., Souza, J. P., & Cário, S. A. (2018). Integração vertical em montadoras automotivas. *Revista de Administração Contemporânea*, *22*(5), 704-725. http://dx.doi.org/10.1590/1982-7849rac2018170281

Bardin, L. (2007). *Análise de conteúdo.* Coimbra: Edições 70.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*(01), 99-120. http://dx.doi.org/10.1177/014920639101700108

Barney, J. B., & Hesterly, W. S. (2017). *Administração estratégica e vantagem competitiva: conceitos e casos* (5. ed.). São Paulo: Pearson Education do Brasil.

Barney, J. B., Ketchen, D. J., & Wright, M. (2021). Resource-based theory and the value creation framework. *Journal of Management*, *47*(7), 1936-1955. http://dx.doi.org/10.1177/01492063211021655

Bortoletto, A. M., Hunoff, T. S., & Alcarde, A. R. (2021). Processos de vinificação para a obtenção de vinhos de qualidade no Brasil. *Revista Visão Agrícola*, *14*, 86-90.

Brasil, S. A., Souza, J. P., & Cunico, E. (2019). Apropriação de valor, recursos e estruturas de governança. *Revista Pensamento Contemporâneo em Administração*, *13*(2), 18-33. http://dx.doi.org/10.12712/rpca.v13i2.12619

Caunetto, M. M., Souza, J. P., & Schiavi, S. M. A. (2024). Transactions in Paraná's dairy AGS: a study based on transaction and measurement costs. *Revista de Economia e Sociologia Rural*, *62*(1), e267722. http://dx.doi.org/10.1590/1806-9479.2022.267722

Cella, D., Theodoro, C. G., Pavarina, P. R., & Malagolli, G. A. (2021). A vitivinicultura brasileira e suas dificuldades com a concorrência dos Vinhos Estrangeiros. *Revista Brasileira Multidisciplinar*, *24*(1), 225-241. http://dx.doi.org/10.25061/2527-2675/rebram/2021.v24i1.739

Chaves, P. T. T., Schiavi, S. M. A., & Granco, G. (2024). Inserção de pequenos produtores na cadeia de cafés especiais no Paraná: um estudo considerando ECT e VBR. *Revista de Economia e Sociologia Rural*, *62*(4), e282728. http://dx.doi.org/10.1590/1806-9479.2023.282728

Coase, R. H. (1937). The nature of the firm. *Economica*, *4*(16), 386-405. http://dx.doi.org/10.1111/j.1468-0335.1937.tb00002.x

Crook, T. R., Combs, J. G., Ketchen, D. J., & Aguinis, H. (2013). Organizing around transaction costs: What have we learned and where do we go from here? *The Academy of Management Perspectives*, *27*(1), 63-79. http://dx.doi.org/10.5465/amp.2012.0008

Cunico, E., Souza, J. P., & Schiavi, S. M. (2020). Contratos de sustentação de valor: uma estrutura de governança para ativos específicos, estratégicos e difíceis de mensurar. *Revista Ibero-Americana de Estratégia*, *19*(4), 11-40. http://dx.doi.org/10.5585/riae.v19i4.17673

Fernández-Olmos, M., Rosell Martínez, J., & Espitia-Escuer, M. A. (2009). The relationship between product quality and transaction costs with vertical coordination in doc [qualified designation of origin] Rioja winegrape industry. *Spanish Journal of Agricultural Research*, *7*(2), 281-293. http://dx.doi.org/10.5424/sjar/2009072-419

Fortes, B. J., & Souza, J. P. (2020). Decisão das fronteiras verticais da firma: considerações de complementaridade. *Contextus: Revista Contemporânea de Economia e Gestão, 18*, 123-145. https://doi.org/10.19094/contextus.2020.43903

Foss, N. J. (2005). The resource-based view: aligning strategy and competitive equilibrium. In N. J. Foss (Ed.), *Strategy, economic organization, and the knowledge economy: the coordination of firms and resources* (pp. 61-80). Oxford: Oxford University Press.

Guimarães, A. F., Schiavi, S., Bouroullec, M., & Pereira, J. A. (2022). Value creation and distribution in the Specialty Coffee Chain: a study of the relationship between agents in Paraná, Brazil and Europe. *Organizações Rurais & Agroindustriais*, *24*, e1842. http://dx.doi.org/10.48142/2420221842

Haseeb, M., Hussain, H. I., Kot, S., Androniceanu, A., & Jermsittiparsert, K. (2019). Role of social and technological challenges in achieving a sustainable competitive advantage and sustainable business performance. *Sustainability*, *11*(14), 3811. http://dx.doi.org/10.3390/su11143811

Hoeckel, P. H., Freitas, C. A., & Feistel, P. R. (2017). A política comercial brasileira e sua influência no setor vitivinícola. *Perspectiva Econômica*, *13*(1), 24-43. http://dx.doi.org/10.4013/pe.2017.131.02

Huang, M.-C., Kang, M.-P., & Chiang, J.-K. (2020). Can a supplier benefit from investing in transaction-specific investments? A multilevel model of the value co-creation ecosystem perspective. *Supply Chain Management*, *25*(6), 773-787. http://dx.doi.org/10.1108/scm-09-2019-0347

Ketokivi, M., & Mahoney, J. T. (2020). Transaction cost economics as a theory of supply chain efficiency. *Production and Operations Management*, *29*(4), 1011-1031. http://dx.doi.org/10.1111/poms.13148

Kosaka, G., Nakagawa, K., Manabe, S., & Kobayashi, M. (2019). The vertical keiretsu advantage in the era of westernization in the Japanese automobile industry: Investigation from Transaction Cost Economics and a resource-based view. *Asian Business & Management*, *19*(1), 36-61. http://dx.doi.org/10.1057/s41291-019-00074-2

Macchiavello, R. (2012). Financial development and vertical integration: Theory and evidence. *Journal of the European Economic Association*, *10*(2), 255-289. http://dx.doi.org/10.1111/j.1542-4774.2011.01042.x

Meirelles, F. S., Giraldi, J. M. E., & Campos, R. P. (2023). Transaction costs economics and geographical indications: a systematic analysis of the literature. *Revista de Economia e Sociologia Rural*, *61*(4), e264494. http://dx.doi.org/10.1590/1806-9479.2022.264494

Mello, L. M. R. (2018). *Relatório de avaliação dos impactos de tecnologias geradas pela EMBRAP*A. Bento Gonçalves: Embrapa Uva e Vinho. Recuperado em 10 de junho de 2024, de https://bs.sede.embrapa.br/2019/relatorios/uvaevinho_moscato.pdf

Mello, L. M. R., & Machado, C. A. E. (2022). *Vitivinicultura brasileira: panorama 2021.* Bento Gonçalves*:* Embrapa Uva e Vinho. Recuperado em 10 de junho de 2024, de http://www.infoteca.cnptia.embrapa.br/infoteca/handle/doc/1149674

Ménard, C. (2004). The economics of hybrid organizations. *Journal of Institutional and Theoretical Economics*, *160*(3), 345-376. http://dx.doi.org/10.1628/0932456041960605

Ménard, C. (2018). Research frontiers of new institutional economics. *RAUSP Management Journal*, *53*(1), 3-10. http://doi.org/10.1016/j.rauspm.2017.12.002

Ménard, C. (2021). Hybrids: where are we? *Journal of Institutional Economics*, *18*(2), 297-312. http://dx.doi.org/10.1017/s1744137421000230

Moura, M. F., Hernandes, J. L., & Pedro Júnior, M. (2021). Uvas de interesse econômico para vinificação e consumo *in natura. Revista Visão Agrícola*, *14*, 8-13.

Niederle, P. A. (2011). *Compromissos para a qualidade: projetos de indicação geográfica para vinhos no Brasil e na França* (Tese de doutorado). Universidade Federal Rural do Rio de Janeiro, Rio de Janeiro.

Oliveira, G. M., Zylbersztajn, D., & Saes, M. S. (2019). CAN contracts substitute hierarchy? evidence from high-quality coffee supply in Brazil. *British Food Journal*, *121*(3), 787-802. http://dx.doi.org/10.1108/bfj-01-2019-0048

Protas, J. F. S., Lazzarotto, J. J., & Machado, C. A. E. (2024). *Panorama da vitivinicultura brasileira em 2022* (Comunicado Técnico, No. 233). Bento Gonçalves*:* Embrapa Uva e Vinho. Recuperado em 10 de junho de 2024, de https://ainfo.cnptia.embrapa.br/digital/bitstream/item/274202/1/ComTec-233-2024.pdf

Perito, M., De Rosa, M., Bartoli, L., Chiodo, E., & Martino, G. (2017). Heterogeneous organizational arrangements in agrifood chains: a governance value analysis perspective on the sheep and goat meat sector of Italy. *Agriculture*, *7*(6), 47. http://dx.doi.org/10.3390/agriculture7060047

Peteraf, M. A. (1993). The cornerstones of competitive advantage: a resource-based view. *Strategic Management Journal*, *14*(3), 179-191. http://dx.doi.org/10.1002/smj.4250140303

Porter, M. E. (1985). The contributions of industrial organization to strategic management. *Academy of Management*, *6*(4), 609-620.

Rosales, F. P., Oprime, P. C., Royer, A., & Batalha, M. O. (2019). Supply chain risks: findings from Brazilian slaughterhouses. *Supply Chain Management*, *25*(3), 343-357. http://dx.doi.org/10.1108/scm-03-2019-0130

Saes, S. (2009). *Estratégias de diferenciação e apropriação da Quase-Renda na Agricultura: a produção de Pequena Escala.* Santos: Annablume.

Schnaider, P. S., Ménard, C., & Saes, M. S. (2018). Heterogeneity of plural forms: a revised transaction cost approach. *Managerial and Decision Economics*, *39*(6), 652-663. http://dx.doi.org/10.1002/mde.2935

Stranieri, S., Varacca, A., Casati, M., Capri, E., & Soregaroli, C. (2021). Adopting environmentally-friendly certifications: Transaction cost and Capabilities Perspectives within the Italian wine supply chain. *Supply Chain Management*, *27*(7), 33-48. http://dx.doi.org/10.1108/scm-12-2020-0598

Tonietto, J. (2007). Afinal, o que é Terroir? *Bon Vivant, 8*(98), 8. Recuperado em 10 de junho de 2024, de https://www.infoteca.cnptia.embrapa.br/infoteca/bitstream/doc/542312/1/ToniettoBonVivantv8n98p8abr2007.pdf

Trienekens, J. H. (2011). Agricultural value chains in developing countries: a framework for analysis. *The International Food and Agribusiness Management Review*, *14*(2), 51-82. http://dx.doi.org/10.22004/ag.econ.103987

Watanabe, K., Wever, M., Sousa, R. N., & Koenig, C. C. (2016). Understanding the hierarchy governance choice of some wineries in Brazil: case study of 3 Brazilian wineries. *Revista de Administração, 51*(1), 20-35. https://doi.org/10.5700/rausp1221

Williamson, O. E. (1985). *The economic institutions of capitalism: firms, markets, relational contracting.* New York: Free Press.

Williamson, O. E. (1991). Strategizing, economizing, and economic organization. *Strategic Management Journal*, *12*(S2), 75-94. http://dx.doi.org/10.1002/smj.4250121007

Windsperger, J., Hendrikse, G. W., Cliquet, G., & Ehrmann, T. (2018). Governance and strategy of Entrepreneurial Networks: an introduction. *Small Business Economics*, *50*(4), 671-676. http://dx.doi.org/10.1007/s11187-017-9888-0

Wright, P. M., McMahan, G. C., & McWilliams, A. (1994). Human resources and sustained competitive advantage: a resource-based perspective. *International Journal of Human Resource Management*, *5*(2), 301-326. http://dx.doi.org/10.1080/09585199400000020

Yin, R. (2015). *Estudo de caso: planejamento e métodos* (6. ed.). Porto Alegre: Bookman.

Zylbersztajn, D. (1995). *Estruturas de governança e coordenação do agribusiness: uma aplicação da nova economia das instituições* (Tese livre docência). Universidade de São Paulo, São Paulo.

Zylbersztajn, D. (2018). Measurement costs and governance: bridging perspectives of transaction cost economics. *Caderno de Administração*, *26*(1), 1-19. http://dx.doi.org/10.4025/cadadm.v26i1.44220

Submitted on: June 10, 2024.
Accepted on: March 05, 2025.
JEL Classification: D23, L14, M10

Associate Editor: Ana Claudia Machado Padilha