

AGRICULTURAL UNIVERSITY PLOVDIV
FACULTY OF ECONOMICS

Goran Lapčević

VALUE CHAIN IN GRAPE GROWING AND WINE
PRODUCTION IN SERBIAN WINERIES

Author's summery

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Mentor: Prof Dr Petar Borisov

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I. GENERAL DESCRIPTION OF THE DISSERTATION

1. Actuality of theme

Economic entities today do business in economic environment, characterized by the globalization of the world market, the intensive development of technology in almost all the fields, and especially the development of information communication technologies, which undoubtedly leads to frequent and fast changes of conditions of doing business. In such circumstances, the precondition of survival of economic entities on the global market is to first build, and then keep the competitive advantage. Consequently, that also stands for the business activities where economic entities do business, as well as for the economy on the whole. Thus, in the current conditions of doing business strategic reconsideration is gaining in importance, especially the application of new strategic methods and tools.

Grape growing and wine production as an economic activity has a long tradition in the world, and for the part of the population engaged in it, it represents an important source of income. Since there is a large number of wineries in Serbia, the question of their survival in the current conditions of doing business is gaining in importance even more. This doctoral thesis is the result of striving to consider the question of perspective of Serbian wineries more closely in the current conditions of doing business. The basic assumption of this research is that there is a discord which can be seen in the fact that on the one hand, the survival of Serbian wineries in the context of global competition is seriously questioned, while on the other hand, at the same time there is a significant potential for the advancement of their business, which should be balanced in a certain way. That is why research has been devised, which has a task to contribute to the advancement of the business of Serbian wineries in the long run. In this respect, the goal has been projected relating to the identifying of relevant factors of influence on the business of Serbian wineries. For the achievement of the projected goal, it is necessary to apply several different methods based on the Value chain analysis. The stated method is applied with the internal analysis of the economic entity's environment, in order to determine its strengths and weaknesses from the strategic point of view. It has a goal to reduce the costs or increase the differentiation of products of considered economic entities by the application of achieved results of value chain analysis. Based on this, their competitive advantage should be advanced. The empirical research was realized on the representative sample of Serbian wineries. The research of the key directions of business of the stated wineries was conducted related to costs, work technology, marketing, application of standards in doing business, institutional support, etc. The research results have confirmed previously introduced assumptions and opened the possibilities for the advancement of Serbian wineries.

PROBLEM OF THE RESEARCH

Current development of the society on the global level is taking place in the context characterized by instability and turbulence, and for the past few years, climate changes as well. The stated characteristics have a significant influence on all economic activities, and regarding that, on agriculture and business of economic entities within.

Thus the development of competitiveness in such business environment is of great importance for economic entities, and what is even more important for economic entities doing business in the agricultural activities, especially if the natural cycle is taken into consideration which rules in the production of agricultural products. Grape growing and wine production cannot be left out of the stated consideration. Regarding this, the competitiveness of wineries deserves to be advanced. Since the knowledge of competitiveness of wineries in the Republic of Serbia is still not fully examined, that fact by itself is a reason enough for the competitiveness of wineries to be subjected to a critical analysis. That is why wineries can represent a suitable field of research for the strategic advancement of their competitiveness

by applying Porter's value chain.

THE SUBJECT OF THE RESEARCH

The subject of the research is grape growing and wine production in the wineries in Serbia. There are several reasons for that, but the most important can be summarized in the following. Grape growing and wine production in Serbia have a long tradition, winegrowing and winemaking are among the most important economic fields, because they employ a significant part of working population especially in the rural area, and they also own important potential for the future growth and development. Serbian wineries have a central place in all of that. Subsequently, the reasons will be considered in more detail.

The Republic of Serbia represents an excellent climate and has great potential for winegrowing, maybe even the best on the Balkans, and it bears grapes with the ideal balance of acidity and sugar. Winegrowing Serbia has 3 winegrowing regions with 22 areas, 77 subareas and more winegrowing oases, which, based on climatic, land, topographic and other characteristics represent areas with the most favourable conditions for grape growing and production of quality wines with geographic origin. Quality grapes represent the foundation for the production of quality wines, and at the same time for the development of wine industry and wineries as key factors in this branch. In view of the fact that grape growing and wine production in Serbia have a long tradition, it is clear that winegrowing and winemaking make one of the most important economic activities.

Serbia, with the total area of 54.000 ha under vineyards takes the 25th place in the world, and more than 80.000 households are engaged in winegrowing. Wine production often takes place in wineries, and currently there over 350 market-oriented wineries in Serbia which employ over 3,500 people, out of which the number of full-time employed is around 2,000, and the number of part-time employed is around 1.500. On the other hand, Serbia takes the 16th place in the world with the yearly production of 230 million litres of wine, where the total value of produced wine is larger than 300 million USD. The average yearly quantity of exported wine from Serbia is 13.6 million litres, and the total value of exported wine is 16.2 million USD, where the average value of exported wine per litre is 1,19 USD/lit.

In the Republic of Serbia, the systematic frame was fully established for the stated activity. Founding and work of wineries is regulated by the Law on Economic Societies, while the process of wine production is regulated by the Law on wine. The conditions on which the wineries function are more closely regulated by the Rule book on detailed conditions regarding buildings, facilities, technical conditions, equipment, vessels and devices, as well as the skilled personnel. Those are the conditions that the producer of stum, wine and other products made of grapes, stum, crushed grapes and wine used in wine production.

In the Ministry of Agriculture, there is a separate Group for winegrowing and winemaking which designs different measures in order to improve the state in the fields of winegrowing and winemaking, which include different measures of subsidizing – from the management of soil, forming new seedlings, subsidizing the purchase of new winemaking equipment and raw material, clone selection and certification of planting material, growing parent seedlings, refunding of a part of costs for laboratory analyses and sensory marking, purchase of new mechanization for winegrowing production, insurance premiums, introducing standards and organic grape production, all the way to marketing and promotion of marks of the geographic origin of wine.

In this context, the aspect concerning research and connecting wineries into associations and wine clusters is also important, together with cooperation with scientific-research organizations in order to advance the knowledge and transfer new technologies.

THE GOAL AND TASKS OF THE RESEARCH

Grape growing and wine production in Serbia are of special importance for the economic development of the state for the following reasons:

- Because they employ the working population of the rural area by which they contribute to prevention of withering away of villages,
- They produce special varieties of wine made of autochthonous grape varieties in small quantities which thus possess or are able to gain protection of geographic origin and can, for this reason, achieve a much higher price on the market compared to the wines of industrial production.
- The activity which has the potential for development and can represent the field of future investment.
- Due to the stated the wineries of Serbia are an important factor of the economic development, because of which the goal of the research can be differentiated into scientific and social-economic.
- The scientific goal of the research is primarily aimed at the systematization of knowledge for building a business model for the creation of a sustainable competitive advantage of Serbian wineries, which would be achieved by applying the value chain analysis.
- The socio-economic goal of the research is aimed at identifying relevant factors of influence on the business of Serbian wineries. Considering the fact that the market is ruled by the trends which respect the wine quality, the wine made of special wine varieties, innovations in wine as a product (marketing, packaging, etc) and relatively high prices which provide the continuing of such a trend, the goal of this research is, by using the analysis of basic activities and support activities of wineries, to reach the quantification indicators and measures of finding the way to advance their business.

HYPOTHETICAL FRAMEWORK

General hypothesis (H_0) of the Doctoral thesis can be defined in the following way:

Serbian wineries, on the one hand in the context of global competition have a problem that, in the long run, their survival is seriously endangered, but on the other hand, they have conditions for the advancement of the state, because they have significant potential for the advancement of their business at the same time. To this effect creating assumptions for strengthening the existing wineries and forming the new ones represents the way to increase the competitiveness of the economy of Serbia, especially of its rural regions.

Special hypotheses, drawn from the previously defined general hypothesis of the Doctoral thesis, could be briefly stated through the following statements:

- H_1 : The room for the significant advancement of business of Serbian wineries can be seen in the unfavourable representation of new varieties in the portfolio of growing certain grape varieties, especially those the market can absorb.
- H_2 : The room for significant advancement of business of Serbian wineries can be seen in the non-existence of benchmark (average) cost values of basic activities of Serbian wineries, so the benchmarking (marking of individual success) could be carried out, in order to advance their competitiveness.
- H_3 : The room for significant advancement of business of Serbian wineries can be seen in the increase of costs of activities for support of grape growing and wine production of

Serbian wineries, considering the current positive trend of increase of these costs in the world.

- H₄: The room for significant advancement of business of Serbian wineries can be seen in eliminating key problems in grape growing and wine production of Serbian wineries on the level of local authorities, which can mostly be seen in the insufficient organization of rural infrastructure.

- H₅: The room for significant advancement of business of Serbian wineries can be seen in eliminating key problems in grape growing and wine production of Serbian wineries from the point of view of the Ministry in charge (the government of the Republic of Serbia) which can be seen in still insufficiently adequate environment for their business.

- H₆: The room for significant advancement of business of Serbian wineries can be seen in their better organizing, especially in forming and strengthening of winegrowing clusters.

METHODS OF RESEARCH

In realization of this thesis, several various methods of scientific research were applied, and they are:

Desktop research concerning the research of literature sources, first the scientific ones (books, scientific and expert publications, in printed or electronic form, etc.), then the internet search of relevant sources, after that the data from reports and studies of various skilled state authorities and bodies, and finally, the data from domestic sources such as statistical reports, reports of relevant ministries and national agencies, and so on.

Historical method, for determining historical facts and data.

Methods of comparative analysis and analyses and syntheses, which were applied for comparing the subject of the research, identification of its characteristics, as well as determining functional relations between them, and the Value chain analysis as a special analytical tool for the structural analysis of activities of wineries as economic entities.

Descriptive method, which served for presenting of results of the research.

Methods of logical reasoning (implications, inductions and deductions) were used during the whole research in formulating partial conclusions, establishing mutual mathematical correlations of identified influence factors as well as their functional connection.

Methods of mathematical statistics, used for empirical research:

- statistical relevant sample of chosen respondents (wineries).
- Survey questionnaire, based on surveying method, for the operationalization of the empirical research.
- descriptive statistics are used for averaging the received values, data presentation and grouping, as well as generalizing results.
- as statistical tools functions of EXCEL were used.

Methods of analogies, for proving hypotheses, reaching conclusions and discussion of received results.

By their use and systematic approach, objective scientific patterns were reached, where subjectivism was brought to the minimum.

Chapter 1 THEORETICAL BASIS OF RESEARCH OF THE VALUE CHAIN IN GRAPE GROWING AND WINE PRODUCTION

Grape growing and wine production in Serbia

The Republic of Serbia has great potential, it represents a great area for winegrowing, perhaps even the best on the Balkans, and it grows grapes with the ideal balance of acidity and sugar. It is situated between the 42nd and the 46th degree of northern latitude and has the position which places it among the most favourable zones for winegrowing. (Vlahović B. P., 2017)

Some parts of Serbia are under the mild influence of the Mediterranean climate. Good latitude gives a favourable addition of temperatures which are decisive for the sugar quantity in grapes, necessary for the production of premium wines. The area is characterized by a good regime of light, which, with temperatures, is crucial for the sufficient quantity of the extract which will later be transformed into wine. The average quantity of rainfall is also satisfactory for the production of grapes, with a partially good frequency during the vegetation period, which can be substituted for with a good sprinkling system.

By the division into regions of geographic production areas of Serbia, which was carried out by the Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia, the **winegrowing Serbia** comprises the whole territory of the Republic of Serbia on the altitude of 800 metres, as well as the areas above this altitude, if they are on the list of areas divided into districts with a higher altitude.

The winegrowing Serbia, as a winegrowing geographic area on the territory of the Republic of Serbia, is classified into the viticultural areas whose names can be used as marks of the geographic origin, and they are:

- **“The winegrowing region** is a wider viticultural area within the winegrowing Serbia, which is characterized by similar ecological factors, the selection of recommended varieties and the rest of the necessary factors for successful winegrowing, which enables the production of wine, stum, and other products characteristic by its quality, the yield of grapes and sensory features of that region;

- **The winegrowing area** is a narrower viticultural area within the region, which is characterized by similar specific ecologic factors, the selection of suggested varieties and other factors, which enables the production of wine, stum, and other products characteristic by its quality, the yield of grapes and sensory features of that district.

- **The winegrowing subarea** is a narrow viticultural area within the district which is characterized by the uniform specific ecologic factors the selection of suggested varieties and other factors, which enables the production of wine, stum, and other products characteristic by its quality, the yield of grapes and sensory features of that subarea.

- **Locality** is the smallest viticultural area within the subarea which is characterized by homogenous ecologic factors” (The Low, 2012).

Within the winegrowing Serbia there are **three regions (Грешка! Източникът на препратката не е намерен.)** which represent geographic wholes:

- Winegrowing region of Central Serbia,
- Winegrowing region of Vojvodina,
- Winegrowing region of Kosovo and Metohija¹.

¹ Having in mind that the Census of Agriculture in 2012 was not conducted in this region, as well as its unsettled status, this region was not processed hereinafter.

Within the three winegrowing regions, there are 22 areas with 77 subareas and more winegrowing oases. (Dragojlović, 2018)

Within the region of Central Serbia, there are 13 areas and 57 subareas:

1. The area of Pocerje-Valjevo, 100ha
2. The area of Negotinska Krajina, 890 ha
3. The area of Knjaževac, 960 ha
4. The area of Mlava, 500 ha
5. The area of Toplica, 600 ha
6. The area of Niš, 1070 ha
7. The area of Nišava, 440 ha
8. The area of Leskovac, 1300 ha
9. The area of Vranje, 320 ha
10. The area of Čačak-Kraljevo, 45 ha
11. The area of three Morava rivers, 6200 ha
12. The area of Belgrade, 430 ha
13. The area of Šumadija, 1150 ha.

Within the region of Vojvodina, there are 7 areas and 17 subareas:

1. The area of Srem, 1890 ha
2. The area of Subotica, 300 ha
3. The area of Telečka, 75 ha
4. The area of Potisje, 175 ha
5. The area of Banat, 85 ha
6. The area of South Banat, 1370 ha
7. The area of Bačka, 20 ha (Ivanišević, 2014)

Based on the collected data by the Agricultural census of 2012, the winegrowing Serbia has a total number of 22,150 hectares under vine. In the region of Central Serbia the vine is grown on the territory of 17,118 hectares, and in the region of Vojvodina on the territory of 5,032 hectares. From the surfaces planted with vine comprised by the Agricultural census of 2012, 77.3% is situated in the region of Central Serbia, where 22.7% is in the region of Vojvodina. (Vlahović B. P., 2017).

According to the data of the Ministry of Agriculture and Environmental Protection, on the territory of the Republic of Serbia, there are currently 369 registered market-oriented wineries, out of which 225 wineries are in the winegrowing region of Central Serbia, 139 wineries in the winegrowing region of Vojvodina and there are 5 wineries in the winegrowing region of Kosovo and Metohija. It should be mentioned that in Serbia, apart from the above mentioned commercial wineries, there is a large number of small family wine producers which produce wine for their own needs, because of tradition or a hobby, but certainly these small producers, the hobbyists can at one point become the backbone of the rural development of certain winegrowing areas, by combining the production of wine with the production of other local products. (Jakšić, Ivanišević, Đokić, & Brabaklić Tepavac, 2015)

Winery as an economic entity

The term of a winery can be defined in various ways. The common understanding of the wine production process is divided into two phases, where the first, primary phase of grape growing takes place at the vineyard, while the second, secondary phase of grape processing and production of wine takes place at the wineries.

The shortest definition of the term winery is given by (Merriam-Webster, 2018), where **the winery is defined as “a wine-making establishment”**. The same source offers another definition of a winery as **“a place where wine is made”**. Here we can find the definition of the term wine cellar which is particularly important because in common communication it comes to a wrong usage and interpretation of this term which is often equalised with the term of a winery. **A wine cellar** is defined as a **“room for storing wines”**.

A winery (The Wine Guide, 2018) is defined as “a building where wine is produced, which can be a part of a wider production process of a company. Apart from the equipment for wine production, larger wineries own warehouses, the plants for filling bottles, laboratories, as well as special tanks for keeping wine”. Apart from that, in The Wine guide, we can find data that the oldest winery in the world is 6,000 years old and it comes from the region of Areni in Armenia, where wine is still produced today. A wine cellar is defined here as “a facility for storing, i.e. keeping wine, in barrels as well as in bottles. These buildings protect wine from potentially harmful external influences, giving protection from the sun and providing constant temperature. By regular keeping of wine, it not only preserves the quality, but there can also be an improvement of its characteristics due to ageing”. According to (Encyclopedia, 2018) a wine cellar is considered to be “every room where wine is kept”, while wineries are “large wine cellars with industrial technology of production, storage, and distribution of wine”. In the Law on wine of the Republic of Serbia (The Low, 2012) we can find a definition of the term of **a producer of wine** - “a producer of stum, wine and other products is a legal entity i.e. an entrepreneur which performs production of stum, wine and other products and is enlisted in the Wine Register” while the term of winery can be found in the record (The Rule book, 2010) based on which the term **Winery** is defined as “**buildings, facilities i.e. the space that a wine producer owns, which are in function of performing the production of stum, wine and other products, which can be situated on one or more locations, i.e. addresses, where in the winery area various phases of production can be conducted, as well as following activities**”. In this definition, other products are defined as “the products made of grapes, stum, crushed grape and wine used in the production of wine”. It can be clearly perceived that there is a significant difference in the use of terms of a winery and a wine cellar where it is clear that a winery is a wider term which, apart from the wine storage, represents the essence of the term of a wine cellar. It also comprises the wine production, where apart from the cellar facilities there is also the equipment for wine production, and larger wineries may own the plants for bottle filling, laboratory equipment as well as the specialized tanks.

The systematised review of terms of a winery and a wine cellar is presented in Table 1: The review of terms of winery and wine cellar

Source	Wine cellar	Winery
(Merriam-Webster, 2018)	A room for storing wines	A wine-making establishment. A place where wine is made.
(The Wine Guide, 2018)	A facility for storing, i.e. keeping wines, in barrels as well as in bottles. These buildings protect wine from potentially harmful external influences, giving protection from the sun and providing constant temperature. By regular keeping of wine, it not only preserves the quality, but there can also be an improvement of its characteristics due to ageing.	A building where wine is produced, which can be a part of the wider production process of a company. Apart from the equipment for wine production, larger wineries own warehouses, the plants for filling bottles, laboratories, as well as special tanks for keeping wines.
(Encyclopedia, 2018)	Every room where wine is kept.	Large wine cellars with industrial technology of production, storage, and distribution of wine.
(The Rule book, 2010)		Buildings, facilities i.e. the space that a wine producer owns, which are in function of performing the production of stum, wine and other products, which can be situated on one or more locations, i.e. addresses, where in the winery area various phases of production can be performed, as well as following activities

Table 1: The review of terms of winery and wine cellar

Source: The Author

The state of wineries in the Republic of Serbia

In order to understand the present state of the wineries in Serbia, it is very important to mention the period of the second half of the 20th century. Based on (Vinopedia, 2018) after the end of the Second World War, the restoration of the country became a priority, but it did not include the restoration of vineyards. “With the development of industry, the gradual moving of rural population started where they got jobs in factories and industrial plants. During that period, the production of wine took place in the wineries formed by the Government of the People’s Republic of Serbia. The company Navip was founded in 1950 on the foundations of the wine cellar of Bruno Mozer in Zemun. Soon after that, in 1955, the company Rubin was formed in Kruševac and VINO Župa in Aleksandrovac in 1957. As far as individual producers were concerned, there was nationalization and confiscation. Individual producers were in an extremely hard situation due to the impossibility of placing and direct sale of wine. The situation extremely worsened in 1970, when the Law was passed which completely forbade the vinegrowers to produce wine. Thus, the vinegrowers could only sell their grapes to large industrial wineries or sell the wine illegally to their neighbours and relatives. With such a law, the large wineries gained a monopoly on the market, and they themselves dictated the purchase price of grapes, and thus put the vinegrowers in a difficult position. It led to clearing the vineyards, and transition to the more profitable agricultural plants. At that time Yugoslavia followed the policy of quantity and not quality, so it became the fifth exporter of the bulk wine in the world”.

Business atmosphere for individual producers of wine i.e. small family wineries changed only in the last decade of the 20th century when their expansion and their dynamic growth began. Now there is a completely different situation in the sector of wine production where the number and importance of large wineries due to the effects of an unsuccessful transition is drastically reduced, and small family wineries gained great significance which, by their diversity and inventiveness give a special tone to the whole sector.

By passing the Law on Wine in 2009 the Vinegrowing and wine registry was established by the standards of the European Union (EU), adapted to family wineries, which today have the largest participation in the production of wine. The main goals of the measures of the Government of the Republic of Serbia in the past 10 years have been directed at the expanding of areas under vineyards, improving the quality of wine and increasing the production of wine with a geographic origin. The special attention is directed at the coordination of standards with the regulations of EU, as well as the improvement of competitiveness of wine and its promotion on the international market. One of the characteristic measures directed at the improvement of the quality of products and competitiveness of domestic wine producers is the measure brought in 2011. With this measure, the Ministry of Agriculture accepted the costs and released the producers of wine with geographic origin of payment of all the costs related to production control and analysis of wine.

In Serbia according to the number of producers written in the Wine register (January 1st 2015) 235 producers make wine that is placed on the market. They are exclusively market-oriented, while 80,341 producers produce grapes. The structure of wineries in Serbia compared to the size of economic entities based on the number of employed people can be analyzed based on the data from the Wine Registry (January 1st 2014). The number of large wineries in Serbia with more than 250 employed is smaller, that is, only two wineries and only one winery belongs to the group of wineries having from 50 to 250 employed. These three wineries still take a large part in the total production by the quantity of the produced wine. There are 23 small wineries, with the number of employed from 10 to 49. Micro wineries, with less than 10 employed make the most numerous groups of wine producers in Serbia, and there are 191 of them. The structure of wineries in Serbia by size and the number of employed is shown in (

Business entity size	Big	Middle	Small	Micro
Number of employees in winery	More then 250	50 -249	10-49	Less then 10
Number of wineries in Serbia	2	1	23	191

Table 2. The structure of wineries in Serbia by size and the number of employed).

Business entity size	Big	Middle	Small	Micro
Number of employees in winery	More then 250	50 -249	10-49	Less then 10
Number of wineries in Serbia	2	1	23	191

Table 2. The structure of wineries in Serbia by size and the number of employed
Source of data: (Ministry of Agriculture, 2020)

Based on the data from the Wine registry (January 1st 2014), the number of employed in wineries in Serbia is 3,415, where the number of full-time employed is 1,956, and the number of part-time employed is 1,459. The production of wine varies from year to year, depending on the climate conditions, where the production of wine with the producers enlisted in the Wine registry the production is smaller compared to the official statistical data, regarding the fact that a certain amount of wine is produced for their own needs (Jakšić, Ivanišević, Đokić, & Brabaklić Tepavac, 2015)

In the Republic of Serbia, there are about fifty larger wineries which produce 120 of varieties of wine with a geographic origin. The regions where the highest quality wines are produced are the winegrowing subarea of Palić, the subarea of Fruška gora, the subarea of Vršac, the subarea of Smederevo, the subarea of Venčac (Topola), the subarea of Negotin, the subarea of Knjaževac, and the subarea of Župa. In the structure of production, white wines are dominant (61,4%) compared to red wines (35%), while the smallest part belongs to rose wines with 3,6% (Vlahović B. P., 2013).

The average annual quantity of the exported wine from Serbia amounts to 13,6 million litres, and the total value of the exported wine is 16,2 million dollars, where the average value of the exported wine per litre is 1,19 dollars/lit. The wines made of fresh grapes make the 96,5%, sparkling wines make 3,1%, and vermouth and other aromatic wines make 0,4% of the exported quantities. The main export markets are the Russian Federation with 4,4 million litres, Bosnia and Herzegovina with 3,4 million litres, Czech Republic with 2,1, Montenegro with 1,8 and Romania with 0,9 million litres (Puškarić, 2017).

In order to advance the production of wine in Serbia, significant investments in vineyards are needed together with the modernizing of technological processes in production. The current model with small wineries selling products at extremely high prices and large wineries selling products at prices which cannot cover the costs of decent wine is not sustainable, and significant changes are needed with the majority of producers. Besides that, still, a low level of wine consumption per inhabitant is present, as well as a low level of wine culture, so a permanent education of consumers is also necessary. (Vlahović B. P., 2013) .

The legal position of wineries in Serbia

When it comes to the legal status of wineries in Serbia, they function according to the Law on Economic societies which was passed in 2011, by which the following is regulated:

- The legal position
- Founding,
- Changes,
- Termination and
- all other issues relevant to the functioning of economic societies and entrepreneurs (the second part of the law).

Based on the (Law on Economic Societies, 2011), 5 various forms of business were made possible, as shown in

R.B	The form of business	Owner structure
1.	Entrepreneur	Entrepreneur
2.	Partnership	Partners
3.	Limited partnership	Silent partner and active partners
4.	Limited liability society	Members of the Limited liability society
5.	Stock company	Stockholders

Table 3: The forms of business of wineries

Source: The author based on the Law on Economic Societies, 2011

Small family wineries mostly do business in the form of entrepreneurs, medium ones as Limited Liability Societies, while the large ones mostly choose to do business in the form of Stock companies.

In the Republic of Serbia, the matter related to wine production is defined by the Law on Wine, passed in 2009 which was amended in 2012. By this law the following issues were defined:

- Production, processing, quality and turnover of grapes meant for the production of wine;
- Production, processing and quality of stum, wine and other products made of wine, stum, crushed grapes and wine used in wine production;
- Marking of wines with a geographic origin;

- Turnover of grapes and wine and
- Other issues of importance for winemaking. (The Low, 2012)

The perspectives of the development of wineries in Serbia

It can be said for the majority of Serbian wineries that they are still searching for their place not only on the domestic but particularly on the foreign market. Regardless of the turbulency of the market, there is a growing number of wineries which round up all the aspects necessary for a successful business on the contemporary market, especially regarding the selection of quality varieties of grapes and the quality of the produced wine. According to (Denda, 2016), “the primacy in the production and export belongs to individual producers more and more, who with domestic and introduced varieties of vine of high quality are slowly taking their place on the market”.

In Europe, and particularly on the EU market, there has been a trend of a larger offer of wine than its consumption, which influences the fall in prices and piling up of supplies. This significantly increases the barriers to gaining access to a foreign market. One of the possibilities are the new markets where the consumption of wine is increasing, and before all those are Russia and China. Gaining access to such big markets implies big costs, and that is space for additional support of the state, which could contribute with incentives to the development of the wine sector to overcome the existing weaknesses. They are to be seen, in the first place, in the small areas under vine, and an inadequate production structure. That is why the priority should be directed at the production of quality and premium wines which could present a foundation for the increase of export.

The chance in export should not be searched for in quantity, because the production of wine in the Republic of Serbia is modest, but in the supreme quality by the chosen market segments. The specialization of production should be aimed at, that is, smaller series with high quality. (Vlahović B. P., 2017)

The special importance and potential are found in education, joining and connecting wineries with the sources of knowledge, especially with universities and research institutions, to hasten the transfer of knowledge and technologies. It can be achieved through local associations and clusters of winemakers, and also through more active engagement of the Serbian Chamber of Commerce where there is a special Grouping for the production of grapes and wine.

In the Ministry of Agriculture, there is a special Group for winegrowing and winemaking. One of its most significant measures is the national subsidy for starting vineyards, which should lead to an increase of areas under vineyards, which from 100,000 ha ended up on less than 25,000 ha. This measure is not allowed in the EU, but it will be carried out in Serbia until its entrance to the EU. This kind of help to producers is very important and currently, half of the existing vineyards are subsidized. Thus, it is made possible for them to transform into modern vineyards, where the yields are reduced in order to produce high-quality wines. The Ministry of Agriculture of Serbia has about twenty different measures at this moment – from the soil management, subsidizing of purchase of the new winemaking equipment and raw material, clone selection and certification of planting material, growing parent seedlings, refunding of a part of costs for laboratory analyses and sensory marking, purchase of new mechanization for winegrowing production, insurance premiums, introducing standards and organic grape production, all the way to marketing and promotion of marks of the geographic origin of wine. It should be mentioned that the enrollment into the Winegrowing register and control of the production of wine with the geographic origin, including laboratory researches and sensory evaluation for wine and grape producers is completely free, which is not the case in other countries. All of this should contribute to the gradual improvement of winegrowing and winemaking in Serbia, despite the existence of the big world wine crisis and recognition of Serbia as a wine country. (Jakšić D. , 2016)

Chapter 2 THEORETICAL FOUNDATIONS OF THE VALUE CHAIN

Competitiveness as a condition of success and survival on the global market

Competitiveness

Competitiveness is the term which can be defined in different ways.

Competitiveness, according to (Krstić M, 2013) is “a concept of comparative abilities and performances of economic entities, economic sectors (subsectors) or countries to sell and deliver goods and/or services on the given market”.

Methodology of research of competitiveness comprises more different concepts, depending on from which point of view, that is from which level its measuring is approached. In this respect, competitiveness can be measured from more points of view, and on a different level, and those are: the global level, the regional level, the national level, the local level, on the level of an economic entity, on the level of a product.

Competitiveness on the global level, according to (COM, 2018), represents “the ability of a firm or nation to offer products and services which satisfy standards of quality on the local and world market at prices which are competitive and give an adequate return of assets for the standard of employed as well as for further production”.

Competitiveness *on the regional level*, according to (Annoni P, Dijkstra L, Gargano N, 2017) presents “an ability of a region to offer an attractive and sustainable environment for firms and inhabitants to live and work in”.

Competitiveness on the national level, according to (Schwab K, 2012), represents “a group of institutions, policies and factors which determine the level of productivity of a country”, that is, according to (COM, 2014) it is “a measure of advantages or disadvantages of a country in sale of its products on international markets”.

Competitiveness *on the local level*, according to (Luz G, 2014), presents a set of principles for a successful business on the level of towns or municipalities.

Competitiveness *on the level of an economic entity* (company), according to (KON, 2018) is “a measure of the ability of a company to produce goods and services in free and equal market conditions which can pass the test of the international market, with the simultaneous retention and a long-term increase in successful business and value of the company”.

Competitiveness *on the level of a product*, (KON, 2018) is “a measure of a product/service to be better on a market in at least one characteristic than another product/service”. Characteristics which enable a product on the market to be competitive can be: the product quality, delivery time, technical and innovative level of a product, reputation, recyclability, reliability, etc.

From presented concepts of competitiveness so far the approach of calculating national competitiveness on the national level was standardized, defined by (Schwab K, 2012), through the I

n The approach of calculating of The Index of global competitiveness 4.0 is based on 98 indicators sorted in 12 columns of competitiveness, which are built by 4 key factors. The key factors with suitable columns, shown in picture 3.1, are the following: Suitable environment whose columns are Institutions, Infrastructure, ICT adaptability, Macroeconomic stability; Human capital, whose columns are health and skills and Innovative ecosystem, whose columns are business dynamism, and innovative ability. The Index of global competitiveness 4.0, represents a synthesized indicator of competitiveness based on ranking by all the indicators.

Out of 140 countries ranked according to the Global Competitiveness Index 4.0, the Republic of Serbia is ranked 65th in 2018, and the profile of the economy of the Republic of Serbia by major competitiveness factors is shown in (Table 4. Global Competitiveness Index 4.0 for Serbia).

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Global Competitiveness Index 4.0 2018 edition

Rank in 2017 edition: 70th/135

Performance Overview 2018

Key ◇ Previous edition ▲ Upper middle income group average □ Europe and North America average

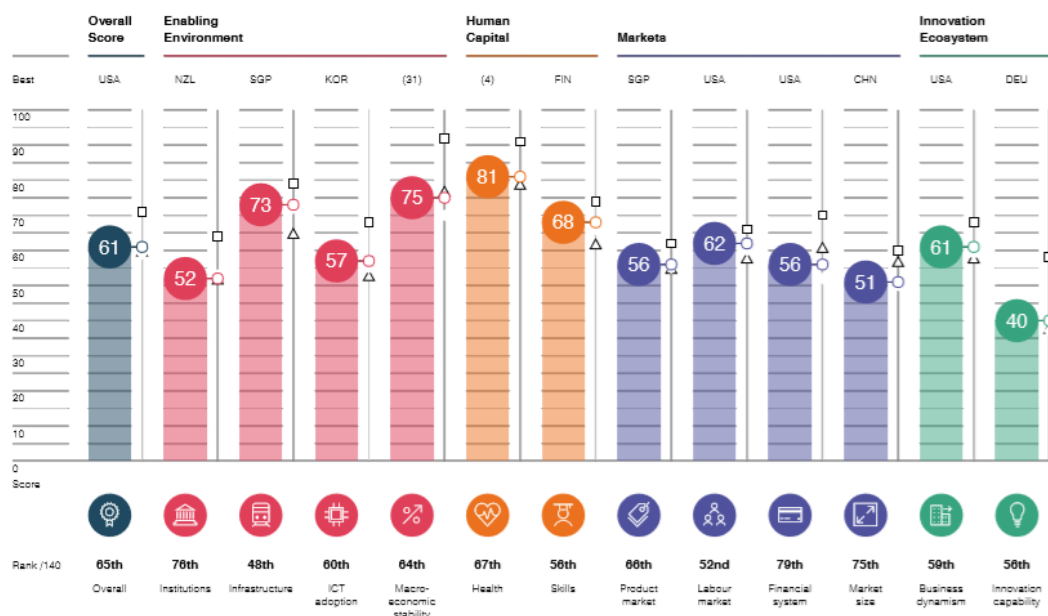


Table 4. Global Competitiveness Index 4.0 for Serbia

Source: (Schwab K, 2018)

As far as the rest of the concepts of competitiveness are concerned, it should be emphasized that some of them are partially included in the Index of global competitiveness 4.0, but they are also expressed differently.

From the point of view of this research, there is also a special importance of competitiveness on the level of the economic entity which will be considered in more detail in further text.

Competitiveness on the level of an economic entity

Competitiveness represents a competition, that is, a process of competing in order to achieve better results. The competitiveness in economy implies the ability of an economic entity to achieve success, to adapt and survive on the market, in other words, it is a concept of doing business which enables the economic entity to develop faster than his rivals (competitors) (Gačić M, 2016).

Competitive ability of an economic entity, according to (Train A, Egbu C, 2006), can be understood as “the core of success or failure of an economic entity”. In other words, it can be said for an economic entity that it is competitive if it makes profit which is on the level exceeding the average of an economic branch it belongs to.

Authors differently rank (evaluate) the key factors which influence the accomplishment of competitiveness of an economic entity.

In ranking of the key factors which influence achieving of competitiveness of an economic entity, undoubtedly the innovation takes a high place. Among the first theoreticians who noticed it, Joseph Shumpeter was the one who called innovation “creative destruction”, having in mind its devastating influence on the existing economy. That is how he found the relation between the competitiveness and innovation of an economic entity. In this respect, the competitive economic entity which realizes innovation is considered an innovative economic entity.

From the point of economic theory, the following can be counted into the most important factors of competitiveness (Arsovski S, 2010):

- Prices
- Costs
- Natural resources,
- Macro economical and energetic potentials, as well as
- Numerous unnamed factors of competitiveness (scientific research work, design of products, marketing, quality, innovativeness, costs of transport, costs of servicing, maintenance, etc.).

According to (Gačić M, 2016), the most important factors which enable the competitive advantage of an economic entity are:

- The kind and level of technology used for production,
- The kind and level of service an economic entity can provide,
- The ability for a fast development of the product or service,
- Own vision of technological progress,
- Social movements on the micro and macro level,
- The ability to predict economic performances,
- Human resources in view of knowledge and information.

For every economic entity, it is not important just to achieve a competitive advantage, but it is maybe even more important to do everything in its power for it to become sustainable long-term.

From the point of view of economic activity, *the sustainable competitiveness* of an economic entity comes out of (Krstić M, 2013):

- Its size,
- Available resources,
- Abilities to mobilize knowledge, technological skills and experience, as well as to constantly create new products, processes and services.

elements of competitiveness, concerning products and services in terms of quality, prices, the width of assortment so that they are supplemented with a new element which takes into consideration the speed of innovating and introducing goods and services to the market.

are the capital, physical resources, labour, management and time.

Nontraditional resources of an economic entity comprise the intellectual potential of the employed, and it especially relates to that knowledge which defines certain competencies, so it can be said that the sustainable competitiveness of an economic entity is “what his employees know and what they can do with what they know” (Krstić M, 2013).

It can be concluded from the above mentioned that the **competitive advantage of an economic entity** represents its ability to make its offer more attractive than the competition's in the eye of the consumer, as well as thanks to its key resources such as knowledge and skills to offer its products and services which are, compared to the competition (Milošević D, 2016):

- Better,
- Cheaper,
- Delivered to the market faster.

For the stated benefits realized on that occasion it is important that they can:

- Be turned into benefits for the customers,
- Be visible by a number of customers large enough,
- Have the customers ready to pay for them, as well as
- Not be supplied fast by other competitors.

Out of this the central question of the theory of strategic management arises:

How can an economic entity first gain and then keep the competitive advantage?

Strategies for the accomplishment of competitive advantage

The competitive advantage of an economic entity is what makes it different from the rest, and they can be (Coulter M, 2010):

- Distinctive abilities, when he does what others are not capable of, or does it better than the others,
- Uniques resources, when he has what others do not have.

Competitive advantage is a variable value, which is obtained based on the comparison of the observed economic entity with one or more competitors at the same time, that is, more economic entities competing on the market, also striving to develop their competitive advantages.

Economic entities can be competitive from the point of view of (Coulter M, 2010):

- Business activity (economic branch), if they realize the same or similar products and/or services,
- Market, if they satisfy the same need of buyers,
- Strategic groups, if they act in the same business activity, by applying similar strategies, resources and serving the same group of buyers.

The height of the profit potential of an economic entity will depend on more reasons, of which the most important are the buyer's problem (the intensity and duration of the problem) and the attractiveness of the offered solution. Thus, the height of the profit potential is determined, on the one hand, by the readiness of the buyer to pay for the solution of his problem, and on the other, by the value of the offered solution.

When the competitive strategies are in question, more approaches were developed, and some of the most applied ones are presented in (Table 5. The approaches to defining competitive strategies)

Strategy Name	Type of strategy	A brief description of the company strategy
<i>The traditional approach</i>		
Miles & Snow Adaptive Strategies	Researcher strategy	continuous innovation, development and testing of new products
	Defender strategy	retaining current market share through the sale of existing products and offering a limited product range
	Analyst strategy	analyzing and imitating (copying) a successful idea from a researcher
	Reactor strategy	responding to changes in the environment by making changes only when circumstances in the immediate environment so require
Porter's generic strategies	Cost leadership strategy	lowest prices in the industry and a range of products for a wide customer base
	Differentiation strategy	providing unique (different) products with features that customers value and are willing to pay
	Focus strategy	cost advantage or differentiation within the narrow market segment
<i>A new approach</i>		
Integrated strategy	Low cost and differentiation strategy	At the same time achieving both low costs and high levels of differentiation
Mincberg's generic strategies	Differentiation strategy	based on price
		based on marketing image
		based on product design
		based on product quality
	Undifferentiated strategy	plagiarism strategy is followed

Table 5. The approaches to defining competitive strategies
Source: (Krstić M, Skorup A, Gavrić G, 2018)

Analysis of 5 forces in Porter's model

Each of the 5 forces in Porter's model (current competitors, potential competitors, substitutes, customers, suppliers) is separately analyzed and evaluated from the point of view of a *business attractiveness* scale from 0 to 7 (0- high, 7 - low attractiveness) and from the point of view of *importance for an economic entity* by weight from 0.0 to 1.0. An example for customer analysis is shown in the (Figure 1: Bargaining power of customers)

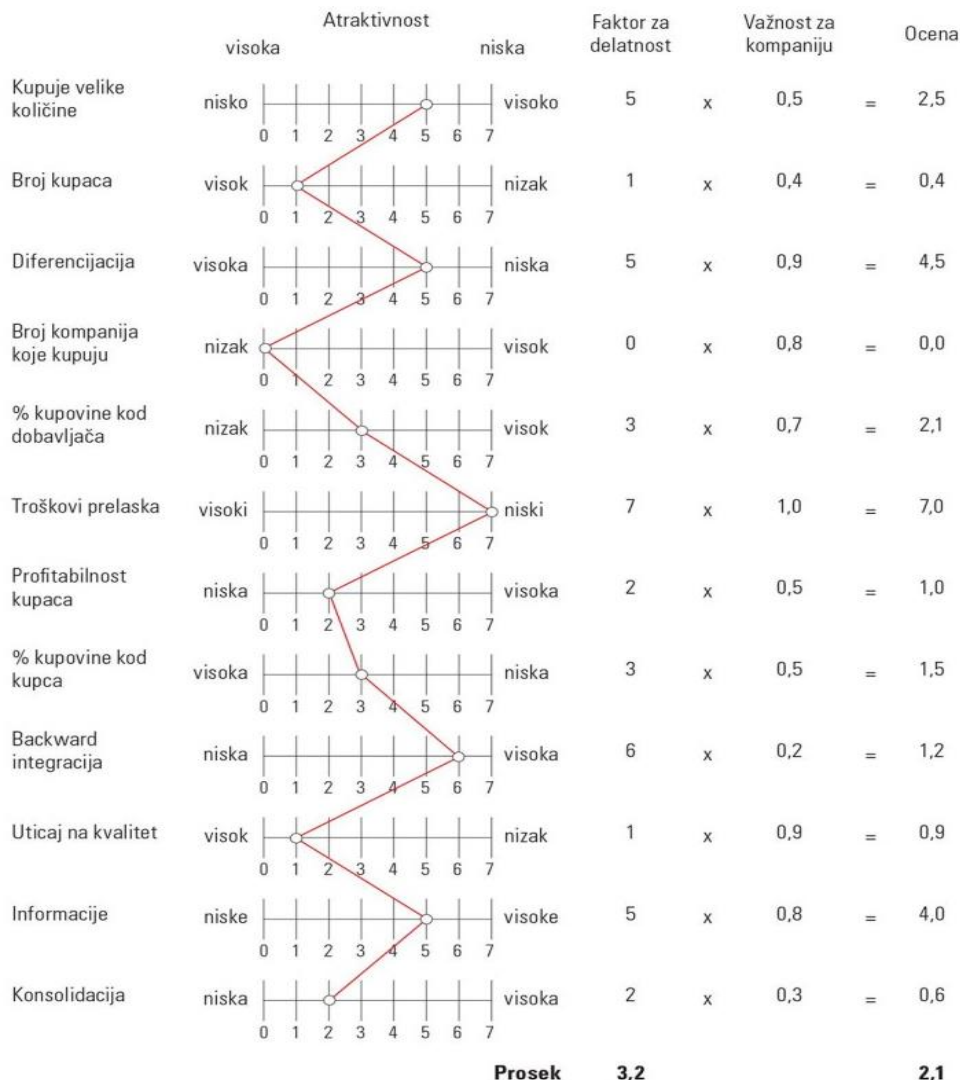


Figure 1: Bargaining power of customers

Source: (PMS, 2018)

Other forces are similarly analyzed by all relevant elements, and then, based on all the analyzes, a summary is drawn up for the attractiveness of the activities,(Figure 2: Summary of key factor scores).

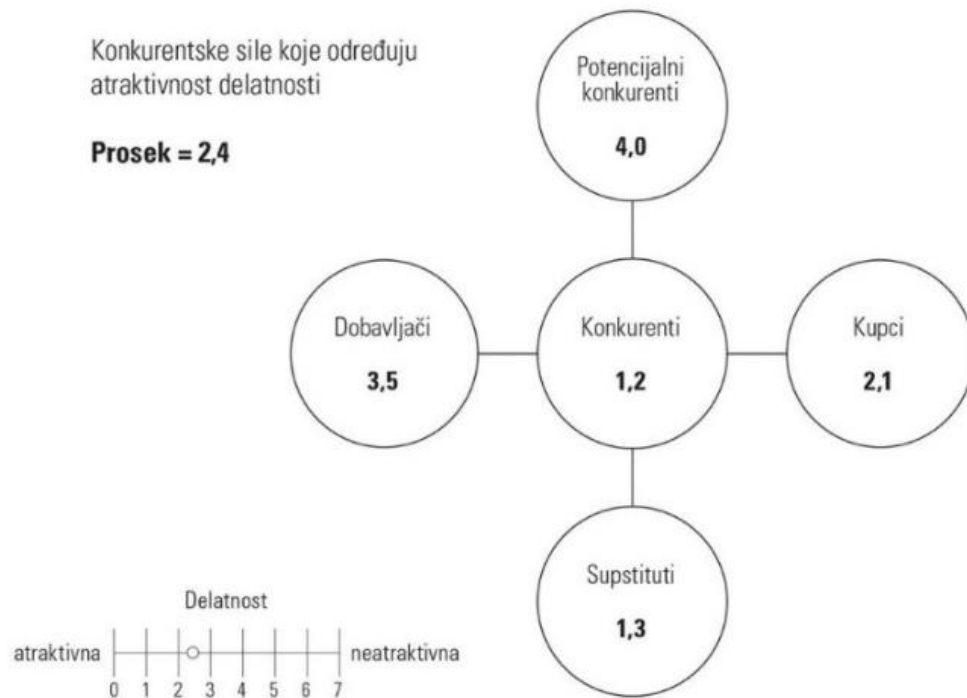


Figure 2: Summary of key factor scores
Source: (PMS, 2018)

Value chain analysis

Approaches in implementing value chain analysis

Implementation of value analysis in practice depends on the competitive advantage an economic entity strives to achieve. Depending on what kind of competitive advantage an economic entity wants to create, there are two different approaches to value chain analysis, namely (Jurevicius O, 2013a):

- Value chain based on competitive advantage in costs,
- Value chain based on competitive advantage in offer differentiation.

If an economic entity wants to gain competitive advantage *in costs*, they should carry out 5 steps of value chain analysis, given on the left in Table 6. Types of competitive advantage

If an economic entity wants to achieve competitive advantage *in product differentiation*, that is, offer differentiation, it is necessary to go from creating superior products, such as adding new features to products and/or meeting different customer needs, which leads to an increase in the cost structure, and perform 3 steps of the value chain analysis, as presented on the left in the (Table 6. Types of competitive advantage).

Types of competitive advantage	
Cost advantage	Advantage in bid differentiation
The business is competing in cost and wants to understand the sources of its cost advantages or disadvantages and the factors that drive those costs.	The business entity seeks to create superior products or services and takes the advantage of differentiation approach.
Step 1. Identifying core activities and support activities. Step 2. Determining the cost for each activity. Step 3. Determining the relative importance of each activity in the total cost of the product. Step 4. Identifying links between activities. Step 5. Identifying opportunities to reduce costs.	Step 1. Identifying customer value creation activities. Step 2. Assess differentiation strategy to improve customer value. Step 3. Identify the best sustainable differentiation.

Table 6. Types of competitive advantage
Source: (Jurevicius O, 2013a)

The following is an example of the application of the value chain analysis shown in (

Table 7. An example of value chain analysis in the case of cost advantages)

Step 1 - Basic activities of the business entity					
Design and Engineering	Procurement of materials and components	Assembly	Composition testing and quality control	Sales and marketing	Distribution and Dealer Support
Step 2 - Total costs and their significance (M - million)					
\$164 M a little significant	\$410 M very significant	\$524 M very significant	\$10 M insignificant	\$384 M significant	\$230 M a little significant
Step 3 - Cost Drivers					
- Number and frequency of new models - Model Sales	- Order size - Average purchase value per vendor - Supplier location	- Capacity dimensions - Capacity utilization - Capacity location	- Level of quality goals - Frequency of non-conforming products	- Advertising budget size - The strength of your existing reputation - Sales volume	- The number of dealers - Dealer sales - Frequency of defects requiring repair
Step 4 - Links between activities					
A quality assembly process minimizes deficiencies and costs in quality control and dealer support activities. Locating a plant near a cluster of suppliers or dealers reduces procurement and distribution costs. Fewer models reduce assembly costs. Large supply volumes increase storage costs.					
Step 5 - Cost reduction options					
Create only one model for different regions to reduce design and engineering costs, increase the size of orders for the same materials, simplify the assembly and quality control process, and reduce marketing costs. Produce in-house components to eliminate the transaction costs of purchasing them in the market and optimize utilization of available capacity. It would also lead to an increase in economies of scale.					

Table 7. An example of value chain analysis in the case of cost advantages
Source: (Jurevicius O, 2013a)

Factors which influence value chain

Several factors affect the value chain. Some of the significant ones are:

- technology,
- information technologies (IT),
- ecology.

Technology. Economic entity operates by realizing a certain set of activities, behind each of which is a certain technology. Therefore, an economic entity can be referred to as a set of technologies. Since in the backdrop of each activity by which an economic entity creates value there is a particular technology, any change in technology will surely have some impact on competitiveness too. In this sense value chain can serve as a specific instrument for understanding the role of technology in competitive advantage.

Information technologies - IT. Each activity in an economic subject by which they simultaneously create value or generate or use certain pieces of information. Nowadays, thanks to IT development in value chain with all both basic and support activities there is also a certain technology of information systems. For example, an ERP system which covers all the relevant areas of economic entity business is characteristic.

Ecology. Economic entities within their business have to meet environmental protection standards, for example ISO 14000:2015, (ISO, 2015). Implementation of this standard represents a cost for an economic entity.

Value chain system

Value chain analysis within an economic entity should be extended externally to include its vertical linking on the relation supplier – producer, that is, producer – distributor.

In this sense value chain of an economic entity (from the point of view of a single business unit) represents only a part (subsystem) of a system, known as *value system* (the value chain system for an entire industry), (Figure 3. Value chain system). This is a logical set of mutual organizational links and relations that are necessary to establish between different economic entities in order to create a product or service. Therefore, this analysis is necessary because customer value is created not only in a value chain of a particular business unit, but also in the value chain formed jointly by suppliers, producers, distributors and customers (Kaličanin Đ, 2005).

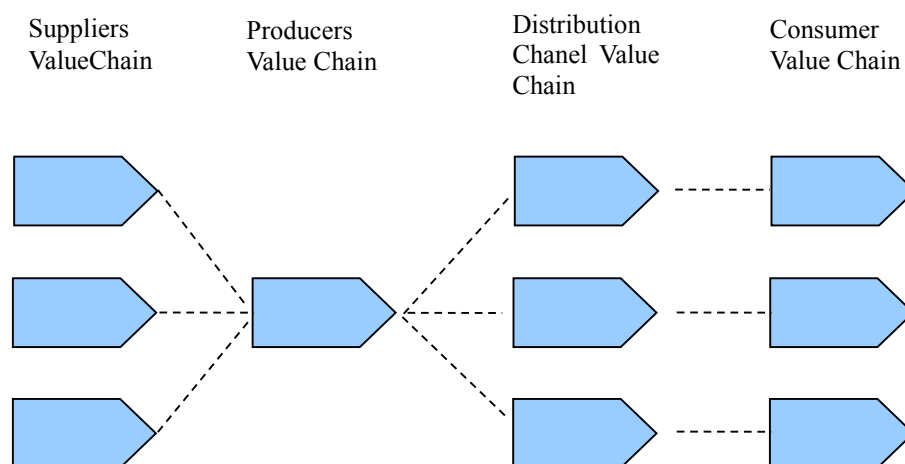


Figure 3. Value chain system
Source: (Porter M, 1985)

RESULTS OF THE VALUE CHAIN ANALYSIS IN GRAPE GROWING IN SERBIAN WINERIES

Basic activities

The costs of basic activities in a vineyard represent the costs of inbound logistics, which in this case represent depreciation costs of the vineyard, then the costs of operations in the vineyard, which represent the costs of agrotechnical measures in the vineyard, and finally the logistics costs which represent the costs of the vineyard's logistics.

Inbound logistics

Costs of vineyard's depreciation

Costs of vineyard's depreciation represent the synthetic indicator that stands for the relation of costs of forming a vineyard and the lifespan of a vineyard. Thereby it was accepted that an average lifespan of a vineyard is 50 years.

The structure analysis of vineyard's depreciation costs value in the sample of wineries has shown that the biggest costs of vineyard depreciation were **700 €/per are**, the lowest costs were **350 €/per are**, the average depreciation costs **469 €/per are**. (Chart 1: Structure of vineyard's depreciation costs value in the sample of wineries).

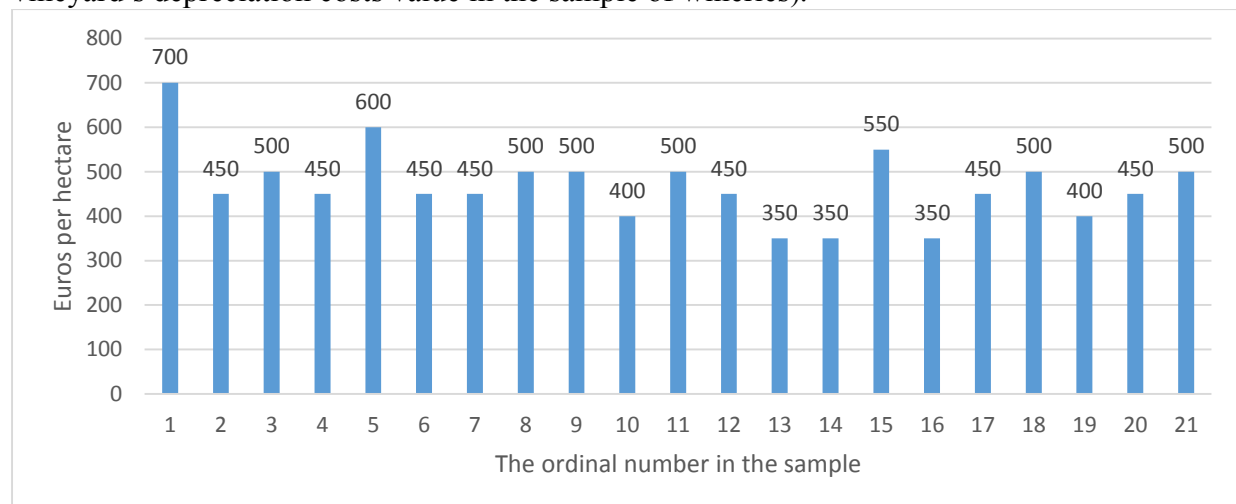


Chart 1: Structure of vineyard's depreciation costs value in the sample of wineries

Source: Research of the author

Operations

Agrotechnical measures application costs in a vineyard

Agrotechnical measures application costs in a vineyard comprise soil preparation, fertilization, irrigation, cutting, spraying (vine protection from diseases and pests).

Structure analysis of agrotechnical measures application costs in a vineyard in the sample of wineries has shown that the biggest costs of agrotechnical measures application were **2000 €/per hectare**, the lowest costs were **1500 €/hectare**, the average agrotechnical measures costs were **1814 €/per hectare**, standard deviation **0.83**, (Chart 2: Structure of agrotechnical measures application costs in the vineyard in the sample.)

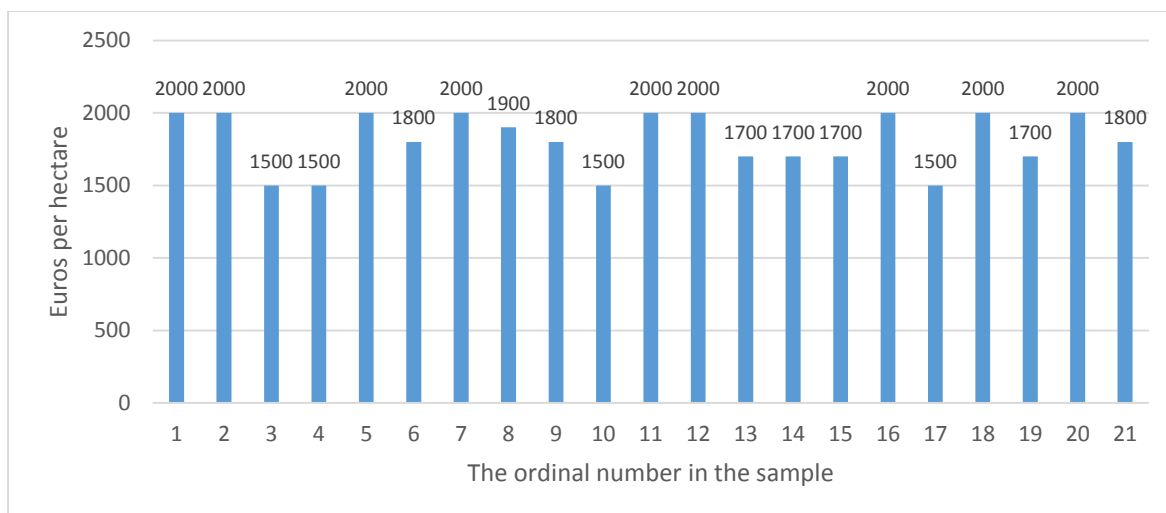


Chart 2: Structure of agrotechnical measures application costs in the vineyard in the sample

Source: Research of the author

Outbound logistics

Logistics costs of a vineyard

Logistics costs in a vineyard comprise the following actions such as picking, loading and transport of grapes.

The analysis structure of logistics costs in a vineyard has shown that the biggest costs of logistics costs were **1200 €/ha**, the lowest costs were **700 €/ha**, average depreciation costs were **914.29 €/ha**.

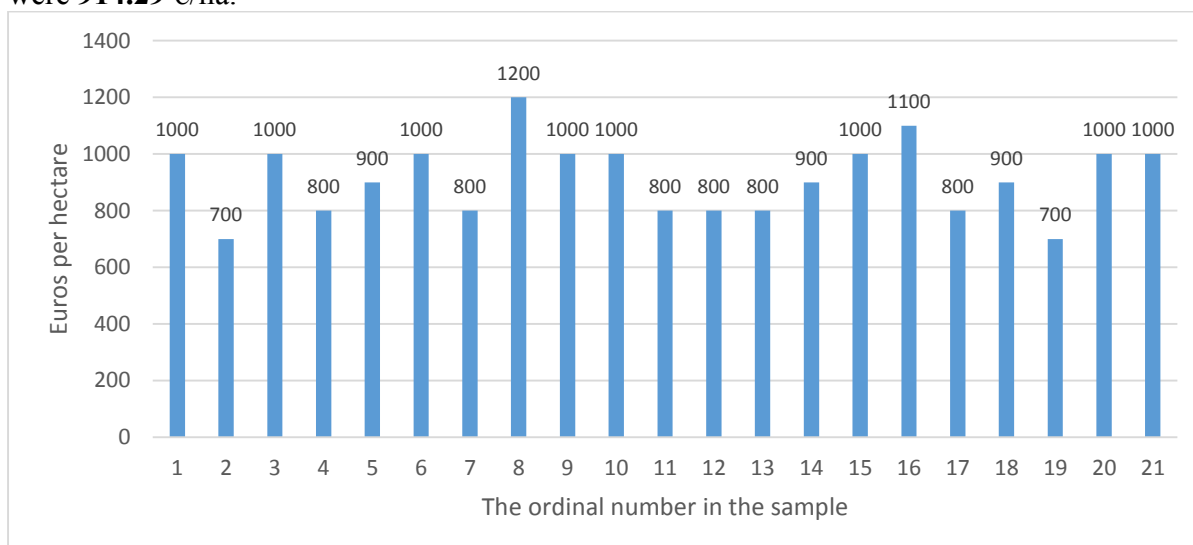


Chart 3: Structure of logistics costs value in a vineyard in a sample

Source: Research of the author

Average values of basic activity costs in a vineyard

Structure of average values of basic activity costs in the sample of wineries is shown on the Chart 4: Structure of basic activities average costs in the sample). From average costs of basic activities, the biggest value was of agrotechnical measures costs in the vineyard **1814,29 €/per hectare**, then logistics costs of the vineyard **914.29 €/ha**, and the minimum value of the vineyard depreciation costs of **469.05 €/ha**.

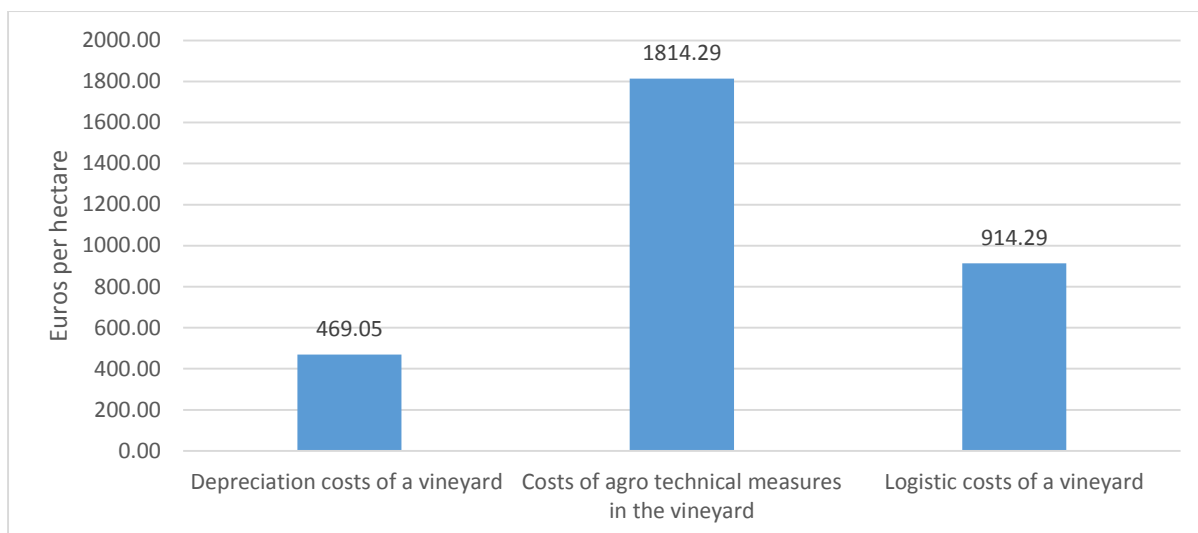


Chart 4: Structure of basic activities average costs in the sample

Source: Research of the author

Support activities

Support costs of grape growing

The structure analysis of value of support costs of grape growing in the sample of wineries has shown that the biggest costs were **700 €/ha**, the lowest costs were **300 €/ha**, the average costs **495.24 €/ha**, (Chart 5: Structure of value of support costs of grape growing in the sample)

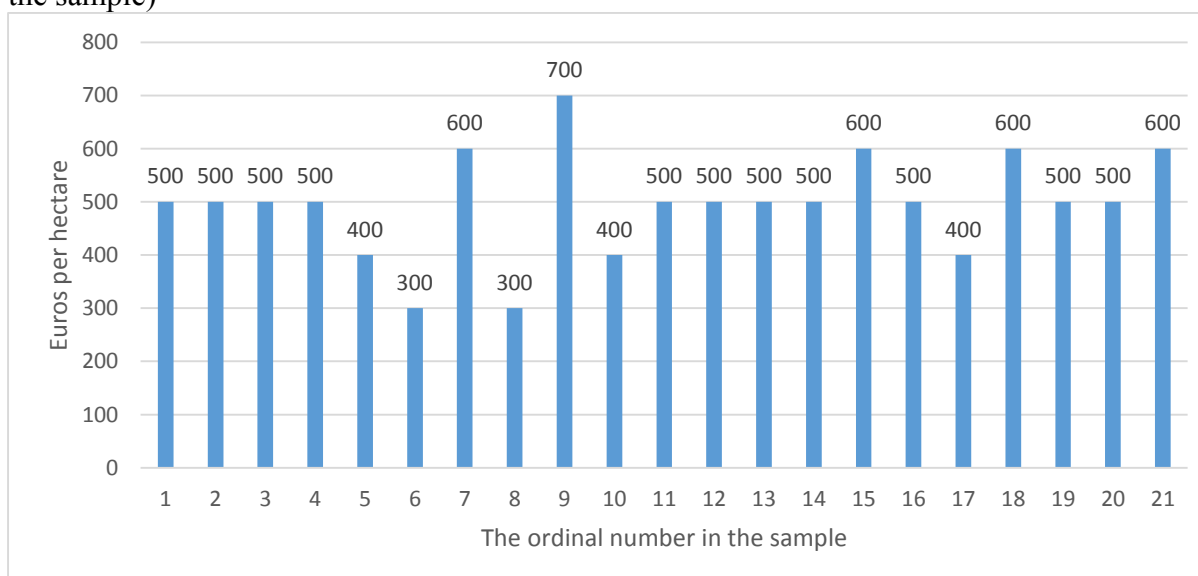


Chart 5: Structure of value of support costs of grape growing in the sample

Source: Research of the author

Support costs of grape growing by structure comprise supply and equipment depreciation costs, development of capacities' costs (education, consulting, etc.), and information system costs.

Supply and equipment depreciation costs

Analysis of the structure of representation of supply and equipment depreciation costs in the sample of wineries has shown that the biggest costs were **77 %**, the lowest costs were **68 %**, the average depreciation costs **72.6 %**, (Chart 6: Structure of representation of supply and depreciation costs in the sample).

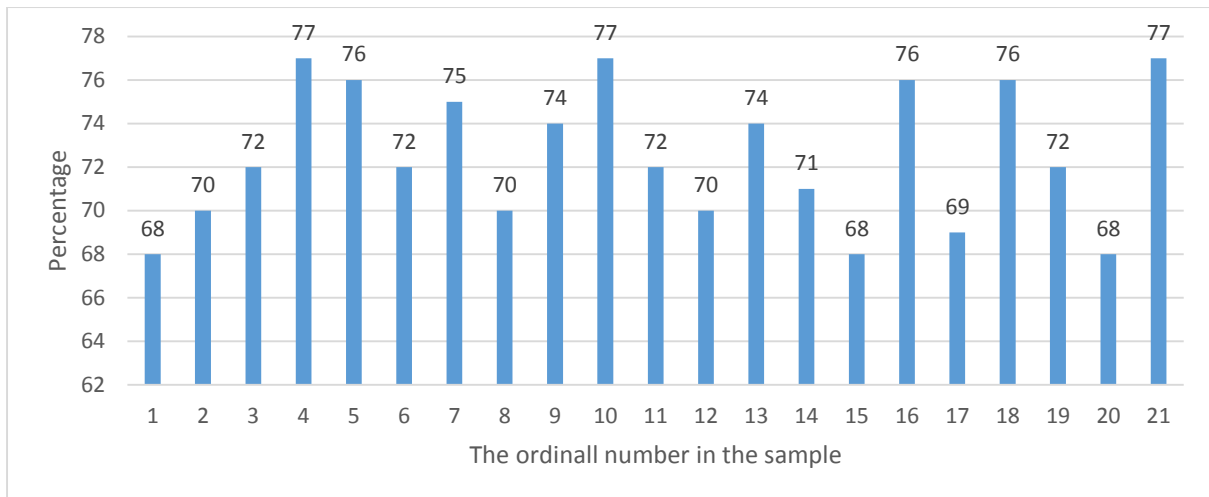


Chart 6: Structure of representation of supply and depreciation costs in the sample

Source: Research of the author

Costs of capacities' development

Analysis of the structure of representation of capacities' development costs (education, consultations, etc.) in the sample of wineries has shown that the biggest costs were **24 %**, the lowest costs were **13 %**, the average depreciation costs were **18.9 %**, (Chart 7: Structure of representation of capacities' development costs (education, consultations, etc.) in the sample).

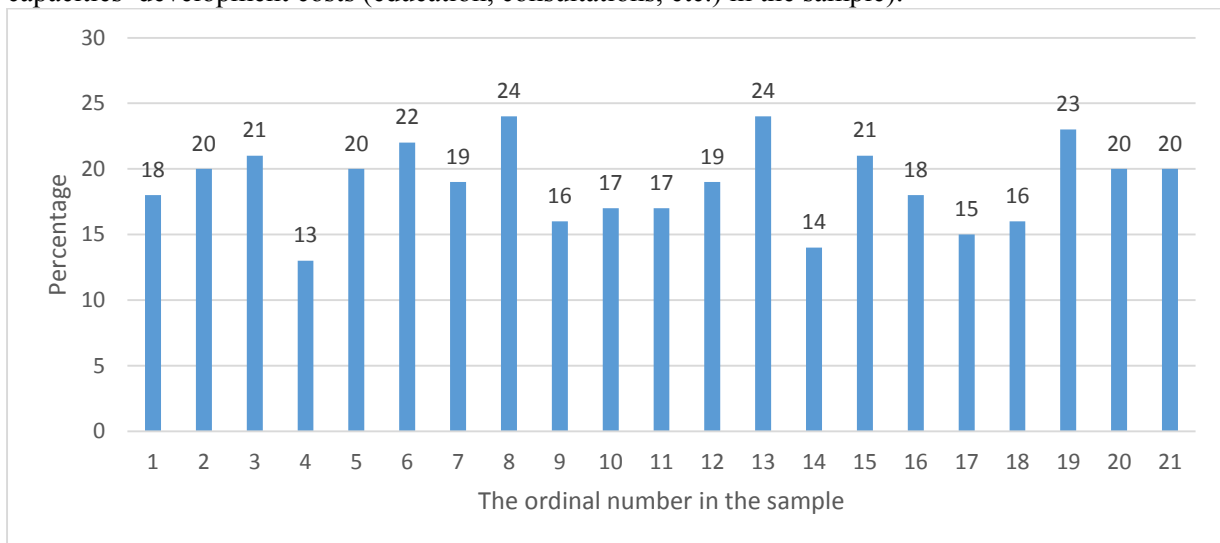


Chart 7: Structure of representation of capacities' development costs (education, consultations, etc.) in the sample

Source: Research of the author

Information system costs

Analysis of the structure of the representation of information system costs in the sample of wineries has shown that the biggest costs were **16 %**, the lowest costs were **2 %**, average depreciation costs were **8.52 %**, (Chart 8: Structure of representation of information system costs in the sample).

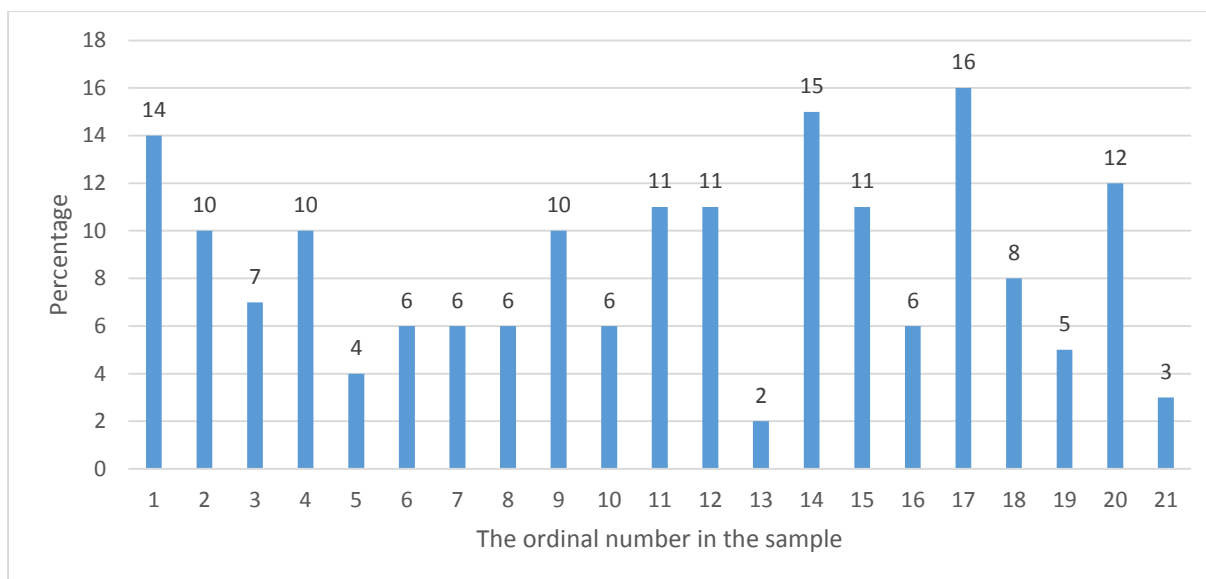


Chart 8: Structure of representation of information system costs in the sample

Source: Research of the author

Structure of representation of average costs of grape growing support

Analysis structure of the represented kinds of average support costs in the sample of wineries has shown that, from the average support costs, the highest value was of the supply and equipment depreciation costs in a vineyard **72.57** %, then the capacity development costs (education, consultations, etc.) **18.90** %, and the lowest value information system costs **8.52** %, (Chart 9: Structure of representation of kinds of average support costs in the sample).

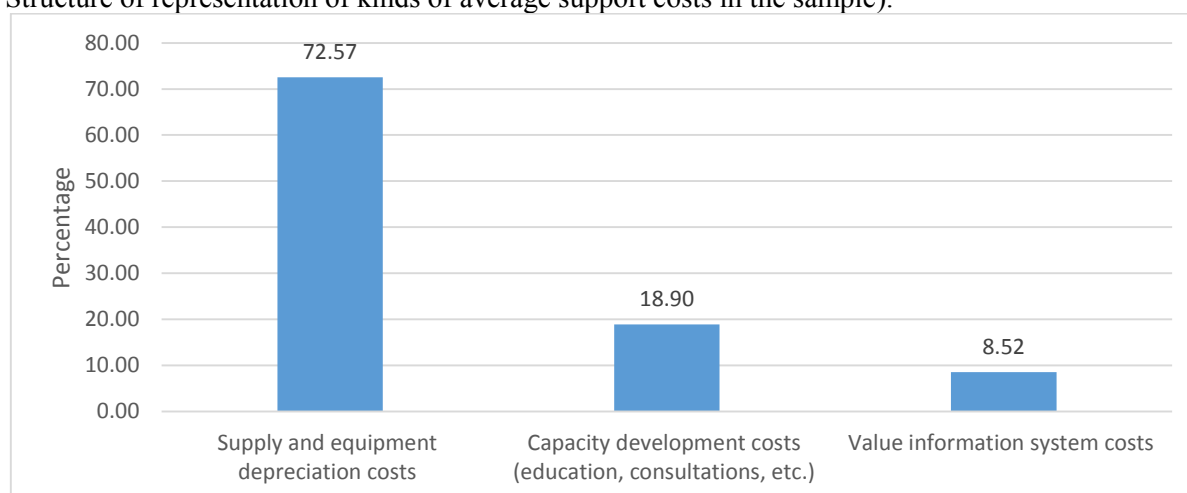


Chart 9: Structure of representation of kinds of average support costs in the sample

Source: Research of the author

The presented average costs of grape growing basic activities can be used as a benchmark for the advancement of business of wineries in order to increase competitiveness. In that sense, the competitiveness in regards of costs can be considered in the following way:

— If the values of winemakers' costs are within the benchmark values, it means that from the aspect of costs the winery is more competitive and should strive to keep the stated costs in that field.

— If the cost values of a winery exceed the frame of the benchmark values, it means that the characteristic winery costs are above the average cost values, and that measures should be taken for elimination of unnecessary costs and their regulation within the benchmark limits.

— In order to determine the benchmark values of average costs of grape growing basic activities, the “spider” diagram has been formed, (Chart 10: Analysis of competitiveness of wineries regarding grape growing costs), which contains four characteristic kinds of average costs (€/ha): vineyard depreciation costs, agrotechnical measures application costs, vineyard logistics costs and growing support costs, represented by the **red line**.

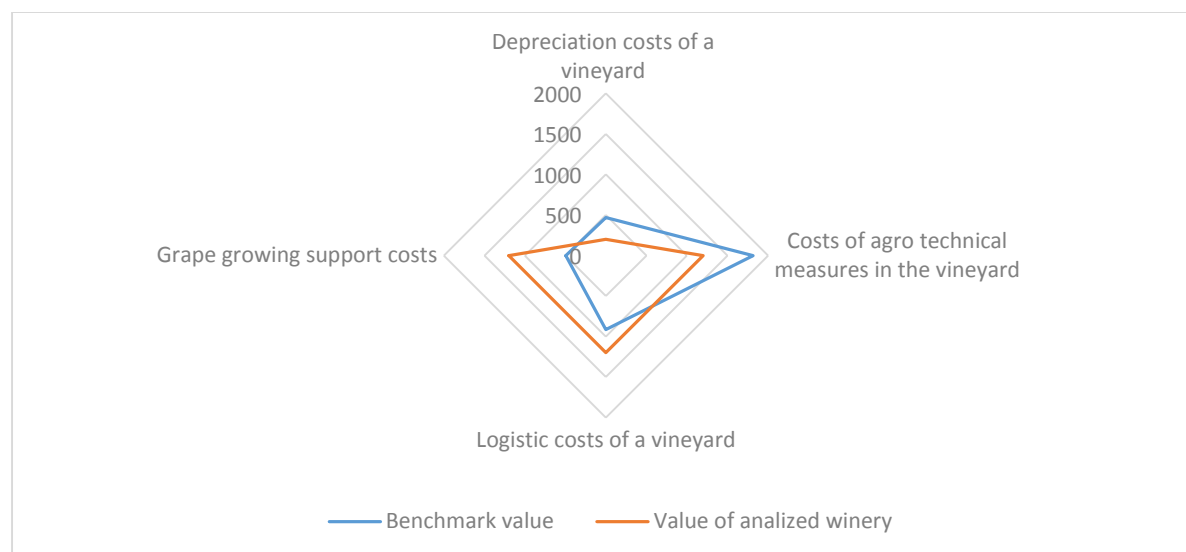


Chart 10: Analysis of competitiveness of wineries regarding grape growing costs (Euros per hectare)

Source: Research of the author

For the sake of demonstration how to advance the competitiveness of an individual winery in the chart, that is, the same diagram, the **blue line** was introduced. It stands for the values of four stated characteristic kinds of costs of the hypothetical winery, next to the average (benchmark costs), in the same units as the red line.

From chart it is evident that with the considered winery, two kinds of costs, agrotechnical measures costs in a vineyard and depreciation costs are within the benchmark cost values. But vineyard logistics costs and growing grapes support costs are above the benchmark values. The considered winery can advance its competitiveness by bringing the costs which are above the benchmark values, to their level.

Attitudes and opinions of winemakers

From the aspect of qualitative analysis of value chain in the further text the attitudes and opinions of winemakers are presented, regarding grape growing, that is:

- *Main obstacles* in grape growing, (Table 8: Main obstacles for grape growing), as well as
- *Propositions for advancement* of grape growing, (Table 9: Suggestions for the advancement of grape growing).

classified by relevant fields.

Fields	Attitudes and opinions of winemakers regarding obstacles in grape growing
Space	Insufficient areas for forming seedlings, Fragmentation of plots, Small plots, A more difficult approach to the vineyard, Insufficient soil (areas) for forming vineyards, Lack of areas for vine growing, Bad rural infrastructure, Neglected vineyards bordering with cultivated plots
Equipment	Outdated mechanization for the cultivation of vineyards, Expensive mechanization and means of protection, Large depreciation.

Finances	Too expensive support of the banking sector for the purchase of land, Expensive banking credits, Inadequate finance management .
State	Difficulties during purchase of land due to difficult solving property legal issues, Uncertainty with subventions, Unconcern of the state for investment in grape production, Insufficient support of the state for grape growing, A lack of understanding for awarding stimulating means, Insufficient stimulating measures by the state, Impossibility of land consolidation, purchase or substitution of plots, State bureaucracy is an obstacle.

*Table 8: Main obstacles for grape growing
Source: Research of the author*

The following table shows the key attitudes of the winery representatives surveyed regarding the advancement of grape growing.

Fields	Suggestions and opinions of winemakers regarding the advancement of grape growing
Space	Expanding of arable land.
Education	Help with control and protection of vineyards, Cooperation with science and profession, A larger number of grape seedlings, Education of producers, Support of scientific institutions for grape growers.
Technics	Following of technical and technological progress in grape growing, Following of technical and technological progress and its application in grape growing as much as the organizational and financial abilities allow it, New mechanization, Following of new technologies in grape growing, Application of the new technologies in grape growing, Following of technological progress, Acquiring mechanization, Introducing new modern technologies, Transition to the advanced varieties, Tracking meteorological conditions in order to reduce the number of treatments.
State	Stimulate consolidation of vineyard plots, The general plan with a large investment in forming new vineyard seedlings, For Župa there has to be another criterion of subventions because of small plots, Organization of cadastre, Support of state in the form of subventions, Larger help of the state.

*Table 9: Suggestions for the advancement of grape growing
Source: Research of the author*

DISCUSSION AND RECOMMENDATIONS WHICH AROSE FROM VALUE CHAIN ANALYSIS OF SERBIAN WINERIES

In the previous chapters, the section (4.1) analyzes the value chain of Serbian wineries, the part of the value chain related to grape growing in the wineries (primary production), while the section (4.2) analyzes the value chain, the part of it related to wine production (secondary production).

The value chain analysis was done by statistical data processing. The data were collected by the wineries from the sample and the survey was conducted by tools (a questionnaire consisting of two parts, titled: *1.1 Survey for primary production – grape growing*, and *1.2 Survey for primary production – wine production*), which are presented in their entirety in the chapter APPENDIX 1.

Surveying and data collection was conducted in the period from June to September 2019 through personal surveying of wineries from the part of the author of the Doctoral thesis, using the “face-to-face” method.

Analysis of the value chain of Serbian wineries was conducted on the sample of 21 wineries from the Župa region. Our sample of wineries in accordance with (Jakšić, Ivanišević, Đokić, & Brabaklić Tepavac, 2015) and (Economic Information Center of the Rasina District, 2019) included:

- 5.7% of total 369 Serbian registered market-oriented wineries
- 9,33% of total 225 registered market-oriented wineries from Central Serbia
- 75% of total 28 registered market-oriented wineries from Rasina district.

Model of creating value chain for the wineries

The analysis conducted in the aforementioned two chapters / (4.1) and (4.2) / enabled us to create value chain profiles of the wineries titled *Value chain profile of wineries*, which is presented in their entirety in the chapter APPENDIX 2.

The analysis conducted in the aforementioned two chapters / (4.1) and (4.2) / enabled us to define *A model of creating value chain for the wineries*, (Figure 4: Chain of creating value for wine producers), which included both primary production (grape growing) and secondary production (wine production) within the wineries, but also distribution and retail outside them. The model represents a generalization based on the chapters presented in the chapters / (4.1) and (4.2) /.

Within the chain of creating value for wineries logistic paths of winery value generation are indicated by thick solid lines, in contrast to that, the other paths of value creation are indicated by thin solid lines. It is important to note that, although during this analysis a larger number of dimensions, that is, an even larger number of variables were used, because of better visibility, within the aforementioned value chain, only a small number of them was selected, while the real picture of the results is obtained only with an insight to Profiles of value chains of primary and secondary production.

Value chain profile of wineries in grape growing – primary production, within the Quantitative part of the profile includes 11 relevant dimensions of the value chain analysis of wineries with 11 variables (10 quantitative and 1 descriptive variable), while it includes 2 dimensions with 8 descriptive variables in total within the Qualitative part of the profile.

Profile of the value chains of wineries in wine production –secondary production, within the Quantitative part of the profile includes 26 relevant dimensions of the value chain analysis of wineries with 88 variables (all of them quantitative), while it includes 2 dimensions with 7 descriptive variables in total within the Qualitative part of the profile.

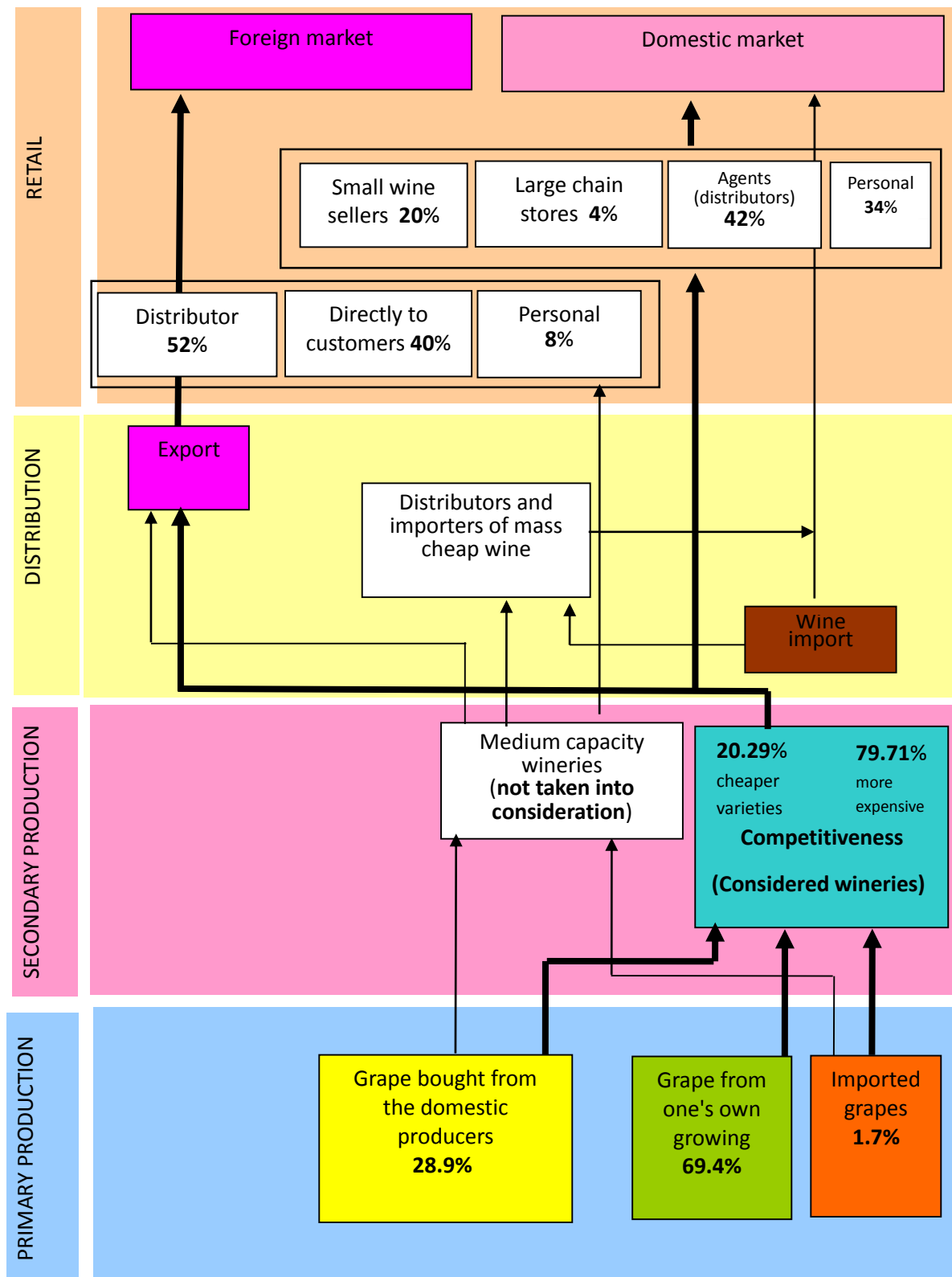


Figure 4: Chain of creating value for wine producers

Source: Research of the author

Quantitative variables, where it was feasible, that is, where the questionnaire did not interfere with the business policy of the wine producers, were presented as absolute values expressed in nominal amounts, and where it was not possible, the values were presented as percentages.

The facts within the results of the value chain analysis in growing.

From the presented structure of vineyard surface of the wineries from the sample, (**Грешка! Източникът на препратката не е намерен.**), there were 2.57 hectares (ha) on average, thus it is evident that these are small properties.

From the presented structure of representation of all the grape varieties in the vineyards of the wineries in the sample, (**Грешка! Източникът на препратката не е намерен.**), it is evident that two grape varieties predominate, domestic and/or domesticated (60.52%) and introduced varieties (36.52%). Also, new domestic varieties are represented in an insignificant percentage (2.95%).

From the presented structure of the average costs of basic activities of grape growing of the wineries in the sample, (Chart 2: Structure of agrotechnical measures application costs in the vineyard in the sample), it is evident that the highest costs are those of agrotechnical measures in a vineyard (1814.29 €/ha), followed by the costs of vineyard logistics (914.29 €/ha), while the lowest value costs were those of vineyard depreciation (469.05 €/ha). Given the distribution, future business improvement should focus primarily on reducing the costs of agrotechnical measures in the vineyard.

From the presented structure of representation of the types of average support costs in grape growing in the wineries from the sample, (Chart 9: Structure of representation of kinds of average support costs in the sample), it is evident that the highest costs were those of procurement and equipment depreciation in a vineyard (72.57%), followed by the cost of capacity development /education, consultation, etc./ (18.90%), while the lowest value costs were the costs of information system (8.52%). Such cost distribution is acceptable for the “young” wineries; however, for “mature” wineries (which prevail in the sample) it is desirable to incur higher costs in capacity and information system development at the expense of reducing the costs of procurement and equipment depreciation.

From the presented main obstacles to grape growing, (Table 8: Main obstacles for grape growing) the following problems can be singled out:

- A lot of small plots,
- Poor rural infrastructure,
- Outdated mechanization for vineyard cultivation,
- Expensive bank loans,
- Lack of state's interest for investing in grape production.

From the presented proposals from the wineries for the improvement in grape production, (Table 9: Suggestions for the advancement of grape growing), the following recommendations can be singled out:

- Cooperation with science and professionals,
- Producers' education,
- Monitoring technical and technological progress in grape production,
- Support from the state in subventions.

The facts within the value chain analysis results of wine production.

From the presented structure of available capacities for grape storage of the wineries from the sample, (**Грешка! Източникът на препратката не е намерен.**), it is evident that an average area for grape storage (40.119 kg) fits into category of medium areas.

From the presented structure of the ways of securing grapes in the wineries from the sample, (**Грешка! Източникът на препратката не е намерен.**), it is evident that the predominant ways of securing grapes are from their own cultivation (69.4 %), purchased from a domestic producer (28.9%), while the grapes from imports are represented by a very small percentage (1.7%).

From the presented structure of wine production of the wineries from the sample, (**Грешка! Източникът на препратката не е намерен.**), it is evident that three sorts of wine prevail with more than 98%:

- White wine – still, CO2 pressure less than 0.5 bars, (53.9 %),
- Black (red) wine - still, CO2 pressure less than 0.5 bars, (27.7 %).
- Rose wine - still, CO2 pressure less than 0.5 bars, (16.9 %),

From the presented structure of the percentage share of the costs of wine production of the wineries from the sample, (**Грешка! Източникът на препратката не е намерен.**), it is evident

that three types of costs predominate with more than 90%, namely:

- The costs of growing own and purchased grapes, (29.9 %),
- The costs of raw materials for bottling wine (32.1 %),
- Labour costs for the staff who work in the cellar (28.1%).

So, in order to improve competitiveness, efforts should first be made to reduce those costs.

Average representation of the costs of seasonal work in the cellar is 6.6 %, average representation of the costs of materials used during the care and storage of wine is 2.0 %, while average representation of the costs of energy amounts to 1.3 %,

From the presented structure of available capacity for storing the wine of the wineries from the sample, (**Грешка! Източникът на препратката не е намерен.**), it is evident that, with one exception, all the wineries have storage capacity of less than 100.000 litres, meaning that medium capacity predominates.

From the presented structure of the representation of the types of grape varieties in the wine in wineries from the sample, (**Грешка! Източникът на препратката не е намерен.**), it is evident that grape varieties with special characteristics predominate (relatively more expensive grape varieties) which indicates that wineries base their competitiveness primarily on product differentiation.

From the evaluation of the research within the marketing of the wineries from the sample we can conclude the following:

- Based on the structure of the evaluation of a **timely wine delivery** in accordance with the demand of the wineries from the sample, (**Грешка! Източникът на препратката не е намерен.**), it is evident that the wine producers assign great importance to this (grade 3 and higher, 95%), which is positive.

- Based on the structure of the evaluation of the **wine market research** in the wineries from the sample, (**Грешка! Източникът на препратката не е намерен.**), it is also evident that the wine producers still do not assign great importance to this (grade 4 and higher only 24%), which cannot be regarded as positive, that is, this area still needs some work.

- Based on the structure of the evaluation of the **effects of conducting market research** of the wineries from the sample, (**Грешка! Източникът на препратката не е намерен.**), it is evident that the wine producers assign considerable importance to this (grades have approximately normal distribution), which can be assessed as positive.

- Based on the structure of the evaluation of **wine promotion innovation** of the wineries from the sample, (**Грешка! Източникът на препратката не е намерен.**), it is evident the wine producers assign considerable importance to this (grades have approximately normal distribution), which can be assessed as positive.

- Based on the structure of the evaluation of the importance of wine **distribution channels** of the wineries from the sample, (**Грешка! Източникът на препратката не е намерен.**), it is evident that the wine producers assign great importance to this (grades 3 and higher 76% in total) which can be assessed as positive.

- Based on the structure of the evaluation of the importance of **wine characteristics important for the customers** of the wineries from the sample, (**Грешка! Източникът на препратката не е намерен.**), it is evident that the wine producers assign great importance to this (grades 3 and higher 85% in total) which can be assessed as positive.

- Based on the structure of the evaluation of the importance of the **development of the wine brand** of the wineries from the sample, (**Грешка! Източникът на препратката не е намерен.**), it is evident that the wine producers assign great importance to this (grades 3 and higher 100% in total) which can be assessed as positive, while it is especially important that 57 different wines from included wineries are currently branded, on the basis of which we can conclude that the wineries are working on wine branding, both to increase the assortment and to have variety of wines.

- Based on the structure of the evaluation of marketing costs in **wine placement** of the wineries from the sample, (**Грешка! Източникът на препратката не е намерен.**), it is evident that wine producers have different representation of marketing costs, it can be noticed that marketing

costs are underrepresented (as 38% of the wineries participate with less than 15 %), which cannot be assessed as positive.

— From the presented structure of wine **placement representation in the domestic market** of the wineries from the sample, (**Грешка! Източникът на препратката не е намерен.**), it is evident the personal way of placement is predominant, but a lot more can be done in the placement improvement area via small wine shops, large retail chains selling wine, via intermediaries and especially through social networks.

— From the presented structure of the **wine placement representation on the foreign market** of the wineries from the sample, (**Грешка! Източникът на препратката не е намерен.**), it is evident that the placement via intermediaries (distributors) predominates, but there is a significant area for placement improvement both directly to the customers and personally, especially bearing in mind the possibility of e-sales.

— From the presented structure of representation of the **share of support costs** of the wineries from the sample, (**Грешка! Източникът на препратката не е намерен.**), it is evident that the procurement and depreciation costs are significant (40,43%), which is characteristic for "young" wineries, but given that "mature" wineries predominate, it would be good that the costs are reduced at the expense of increasing the costs of capacity development (8.52) and the costs of information system which are insufficient (3.86%).

— From the presented main obstacles in grape growing, (**Грешка! Източникът на препратката не е намерен.**) the following problems can be specifically singled out:

- Lack of financial resources,
- Lack of information on support programs from relevant institutions,
- Wine demand is greater than the current capacity and the volume needs to be increased.

From the presented proposals of the wineries for grape growing improvement, (**Грешка! Източникът на препратката не е намерен.**), the following recommendations can be specifically singled out:

- Education (lectures, seminars), visits to wine regions,
- Establishing an institution for the support to wine producers at local level.
- Larger presence at fairs, ppromotion and wine testing events
- Promoting sales through better use of the Internet and social networks,
- Motivating producers to associate into wine cluster.

From a methodological point of view, the emphasis of this research was on the possibility of creating a business model for improving wineries' operations, that is, a model of the value chain analysis of wineries, in the sense of identifying relevant indicators (both quantitative and qualitative) to describe the said model, while statistical processing was in the background.

Conducted value chain analysis in the previous chapters 4.1 Results of value chain analysis of grape growing in serbian wineries and 4.2 Results of value chain analysis of wine production in Serbian wineries were realized by applying traditional approach in value chain, which is based on theoretical foundations set by M. Porter (Porter M, 1985).

New Wine Value Chain Challenges

Current understanding of the generic value chain of wine is presented in the (Figure 5: Framework of the value chain of wine)

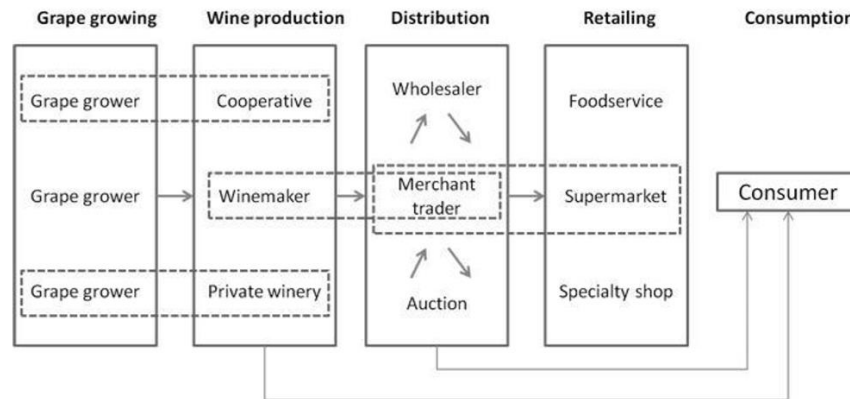


Figure 5: Framework of the value chain of wine

Source: (Goncharuk A, 2017)

The value chain of wine presented in the (Figure 5: Framework of the value chain of wine), is a network of stakeholders involved in all its stages (grape growing, wine production, distribution, retail and wine consumption). In doing so, each of its stages has its own characteristics (Goncharuk A, 2017):

- *Grape growing* demands special conditions the most important being: soil quality, the need for climate and crops, diligence and patience of grape growers.
- *Wine production* can be realized from the part of the following actors: wine companies which do not have their own vineyards, wine cooperatives which combine viticulture and wine production, private wineries with their own vineyards.
- *Distribution* is about the level at which the wine is transported and can be at a local, regional, national or international level, depending on the strategy and production capacity of a company and can be implemented by the following actors: large wine companies which control the full value chain of wine, specialized distribution companies: wholesalers, sellers, auctioneers, etc.
- *Retail* implies all the places where people can purchase and consume wine, like: supermarkets, restaurants, wine bars, specialized wine stores, etc.
- *Consumption* implies end consumers of wine.

The result realized achieved by applying traditional approach to value chain is presented in the (Figure 4: Chain of creating value for wine producers) is completely in accordance with the current understanding of the value chain of wine presented in (Figure 5: Framework of the value chain of wine).

The theory of value chain analysis has evolved since traditional value chain emerged, so that new issues arose in the meantime, especially when it comes to grape growing and wine production and there were new challenges for the value chain of wine.

It is certain that the future research in this field should include those new challenges of the value chain analysis of wine which appeared in the meantime and which can be briefly summarized in the following:

- Global and ecological costs,
- Methodological challenges,
- Financial challenges,
- Economic and market challenges,
- Clusters.

Global and ecological challenges

According to (Berry A, et al, 2016), it is well known that a traditional way of wine production in the long run can seriously impair environmental sustainability. The degradation of environmental sustainability in the value chain arises from both input elements (such as chemicals, energy, packaging materials and water) and output elements (such as organic waste, solid and liquid waste, CO₂

emissions and water footprint). Therefore, it is not surprising that the issue of ecological sustainability of the wine sector comes to the fore, especially since it is largely indicated from the wine sector itself, due to the negative impacts of climate changes (such as less precipitation, as well as more frequent and extreme weather) which has a negative impact on the effects.

Sustainability is one of the strategic choices that companies can make as a response to certain stimuli. According to (Santini, Cavicchi, & Casini, 2013) the first step in understanding the relations between the companies and sustainability is the analysis of *the drivers of sustainability*. In this regard, the company Accenture has developed a list of key drivers of sustainability which comprises:

- consumer demand for sustainable products and services;
- stakeholders' influence;
- spending resources;
- employee engagement;
- supervision of the capital market;
- regulatory requirements.

Methodological challenges

Traditional models of chain value analysis are predominantly focused on economic agents, but the appropriate attention is still not paid to social and life consequences of the companies (before) resources allocation within and among the companies in the chain.

The new methodological approach consists of a concept which supports sustainable value chain, which should include both the environment and social influence within collaborative model of the value chain management.

So as to identify prospectives, (Fearne, Garcia, & Dent, 2012) suggest value chain analysis with three dimensions, which researchers can use in order to ensure its sustainable value creation. The suggested dimensions are:

- Analysis limit: Intra-company → inter- company / chain → external stakeholders,
- The framework of the value considered: decrease in costs / waste → the value of a consumer and a buyer → common value,
- Management: relations not taken into consideration → the power of channels → cooperation.
- In such a way, value chain analysis should integrate social and ecological aspects of sustainability in search for a sustainable competitive advantage.

Financial challenges

Consumers' demands are not constant, on the contrary, they change from year to year and wine producers have to be prepared to coordinate their offer according to those demands. When fulfilling those demands, wine producers meet financial challenges. Key financial challenges in wine value chain are poor state financing and high taxes, high starting investment, low loan availability, lack of finances for a technical upgrade, low investment support from SME, etc.

In order to stimulate value chain development, reasonable financial leverage should be built.

A special challenge for value chain of wine is creating reasonable financial leverage.

When it comes to financial competitiveness, (Borisov P, Teodor Radev P, 2013) identified the following key drivers of competitiveness in wine sector, namely:

- Assets quantity (the size of a company as an obstacle to entering an industry),
- Capital share in the capital structure, and
- Investments in activity and product diversification.

Economic and market challenges

Economic and market challenges are related to efficiency, green innovation and collaboration in a highly competitive environment.

When it comes to efficiency of the companies which do business in a competitive environment, in order to identify efficiency of companies in wine industry (Lazareva N, 2015) and (Goncharuk A, Lazareva N, 2015) suggest methodological approach with three criteria for efficiency evaluation. According to this methodological approach, key performance indicators for each company which operates on a competitive market are as follows:

- Structural efficiency indicator,
- Annual productivity index as an indicator summarizing dynamic efficiency of a company,
- Relative economic efficiency indicator.

When it comes to green innovations, which imply the design process of a current product in order to decrease negative environmental impact, according to (Borisov P, 2013.a) investments in green innovations of the companies from the wine sector have crucial impact on the competitiveness level and create effects of the second order, such as landscape diversification, natural resources conservation and regional ecology. The positive effects could be cited as follows:

- Landscape diversification,
- Reduction in soil erosion and groundwater pollution;
- Preservation of cultural and historical heritage at the local level through the development of wine tourism, investments in vineyards, wine cellars and protection of geographic origin.

Clusters

When it comes to the competition of national economies in wine production and marketing, a cluster approach comes to the fore. The cluster approach assumes that the principle of synergy is satisfied. In the principle of synergy, the network effect is always bigger than the simple sum of the effect of single members in the network. This practically means that members in the cluster will achieve better results than those who are not members of the cluster.

According to (Borisov P, 2013.b) the advantages of wine cluster are defined by the following key determinants:

- Factor conditions,
- Demand conditions related to
- The presence of related and supporting industries,
- Implemented business strategies of a company and competition
- Government support.

Since the wine cluster is not sustainable because it largely depends on its participants, in order to ensure its sustainability, it is necessary to take the following steps:

- Establishing strategic alliances between research and development organizations and other actors in the cluster.
- Building a shorter value chain in wine productions.
- Strengthening inter-branch relations.
- Establishing a special fund from the part of all the stakeholders in the wine branding cluster.

Future research challenges

The experience gained so far within the work on the value chain in grape growing and wine production in Serbian wineries, as well as the challenges of modern wine production development here presented in short, enabled the author of this Doctoral thesis to know where to direct further research on this topic.

In this respect, in the future research of value chain, in the scope of Methodological settings and research, it would be expedient to also consider the factors which generate presented challenges (global ecological challenges, methodological challenges, financial challenges, economic and market challenges, clusters), that is, the adequate instruments for collecting the data (surveys) should be complemented with key variables which measure the aforementioned factors of modern challenges.

CONCLUSION

The following issues have been considered in this Doctoral thesis.

Within the chapter **Introduction** the following issues were considered: actuality of the topic, research problem, aim and tasks of the research, hypothetical scope of the research, implemented research methods, sources and the period of the research, as well as the scientific contribution of the paper. The aforementioned will be discussed in more detail in the following.

Within the subsection *Actuality of the topic* in the scope of socio-economic context, we will take a closer look at the issue of the perspective of Serbian wineries in current global business environment through a thoughtful research plan and value chain analysis of Serbian wineries.

Within the subsection *The problem of the research* the competitiveness of economic entities was set with special emphasis on those who do business in the agriculture area.

Within the subsection *The aim and the tasks of the research* we defined scientific and socio-economic goals.

Within *scientific goal of research* we considerably systematized theoretic knowledge of value chain analysis, which set real assumptions for its operationalisation through the construction of a business model which enables sustainable competitive advantage of the wineries, while within the socio-economic objective of the research, through the analysis of basic and support activities of the wineries based on the results of the previously conducted scientific research objective, a business model has been built to enable finding ways to further improve how wineries operate and consequently the economy as a whole.

Within the subsection *hypothetical scope* this research confirmed the *general hypothesis* (H_0) of the Doctoral thesis that the applying value chain analysis to wineries, in the way already explained within this research, can enable strengthening of the existing wineries, as well as forming new ones, and therefore represents a rational way to increase the competitiveness of Serbian economy, especially in its rural regions.

As for the fulfilment of *special hypotheses* the following can be stated:

Special hypothesis H_1 was partially confirmed, because there are certain wine varieties in the wineries from their portfolio of growing of certain wine varieties already significantly represented, so that there is not a very large space for a significant improvement for improving business of the wineries on that basis.

Special hypothesis H_2 was confirmed in full, because this research indicated that there are no benchmark (average) values of the costs of basic activities of Serbian wineries on the basis of which their benchmarking could be evaluated in order to improve their competitiveness. It is through this research that the benchmark (average) values were introduced, which fulfilled the requirement for future benchmarking of Serbian wines (APPENDIX, 2. Profile of value chain).

Special hypothesis H_3 was confirmed in full, because this research showed in its quantitative part that there is space for a significant improvement of the business of Serbian wineries through increasing the costs of support activities to grape growing and wine production in the wineries, which was also noted by the increase in the cost of support activities for grape growing (Chapter 4.1, part Support activities, Costs of support in grape growing)

Special hypothesis H_4 was confirmed in full, because this research, in its qualitative part, through the views of the wineries indicated that one of the key problems in grape growing and wine production of wineries poor rural infrastructure at the level of local government (Table 8: Main obstacles for grape growing, field: Space).

Special hypothesis H_5 was confirmed in full, because this research, in its qualitative

part, through the views of the wineries indicated that one of the key problems in grape growing and wine production of wineries is insufficiently adequate environment for their business, that is, the need to establish an institution for support to wineries at a local level, which is the responsibility of the line ministry, (**Грешка! Източникът на препратката не е намерен.**, Field: State).

Special hypothesis H₆ was confirmed in full, because this research, in its qualitative part, through the views of the wineries indicated that one of the key problems in grape growing and wine production of wineries is their lack of organization, especially in the forming and strengthening vineyard clusters, that is, in the absence of producers' motivation to associate (**Грешка! Източникът на препратката не е намерен.**, field: Other).

Within the subsection **Research methods**, we presented all the implemented methods in the research.

Within the subsection **Sources of information and research period**, we presented the wineries from the sample and the period within the research, as well as a Questionnaire created especially for this purpose.

Within the subsection **Scientific contribution**, we presented the contribution from theoretical and practical point of view. As a special contribution of the thesis, we can state here a constructed model of value chain in grape growing and wine production (Chapter 4), which enabled the development of the value chain model for the wineries and whose implementation conducted the aforementioned empirical research.

Within the chapter **Theoretical basis of the research of value chain in grape growing and wine production** we examined the following relevant issues.

From theoretical point of value chain, we examined *grape growing and wine production* firstly in the world and then in the Republic of Serbia. The consideration was conducted both historically and geographically.

We examined *winery as an economic entity* from several points of view, such as: term; definition; state; legal status; conditions for functioning; facilities, premises and technical conditions for work; equipment, dishes and appliances in production plant; expert staff; wine tourism and development perspectives.

We examined *theoretical bases of value chain* within which we examined in more detail key change generators in business environment, competitiveness as a condition of success and survival on the global market, as well as the strategies for achieving competitive advantage. We also examined *value chain analysis from several aspects*, namely: historical, conceptual, the approach of its implementation, influential factors, the system and possibility for analysis, as well as *new approaches in value chain analysis in grape growing and wine production*.

Within the chapter **Methodological research settings** we examined the design of empirical research, in which the Model of value chain in grape growing (primary production) and the Model of value chain in wine production (secondary production), the surveys for data collection were defined, representative sample of Serbian wineries was determined based on the wineries of Župa region, while the realization of empirical research was explained further.

Within the chapter **Analysis of the results and the models ensuing from the value chain analysis of the wineries**, we presented practical realization of the conducted empirical research of value chain of the wineries from the following points, namely:

— The analysis of value chain in grape growing of the wineries from the sample was done from the point of basic activities and support activities and on that occasion the views and opinions of the representatives of the wineries were collected and several important issues were discussed (the areas under vineyards, grape varieties, relevant costs of grape growing, relevant costs of support for basic activities, as well as the purpose of grape growing).

— Value chain analysis of wine production of the wineries from the sample was done from the point of view of basic activities and support activities. On that occasion, the views and opinions of the representatives of the wineries were collected and several important issues were discussed (grape storage capacities, wine varieties, wine production, the costs of wine processing, relevant costs of support to basic activities, method of conducting marketing, researches within marketing, wine branding, placement of wine in the market and other), as well as the main obstacles and suggestions for improving the wine production.

Within the chapter **Discussion and recommendations ensuing from value chain analysis of Serbian wineries** the following issues concerning the explanation of empirical research (collecting the data and statistical data processing) were considered, the formed Model of value chain creation was examined, together with important facts within the analysis results of value chain in grape growing, as well as important facts within the analysis results of value chain in wine production.

A business model of improving wineries' business was developed, that is, *The model of value chain analysis of wineries*, based on quantitative indicators and parameters of the wineries, which integrates two parts of the value chain, the first relating to grape growing – primary production and the second relating to wine processing – secondary production.

The model for improving the business of wineries is described by quantitative indicators and parameters which comprise 37 relevant dimensions in total, which are further operationalized by 99 variables. The model provides the possibility of dynamic implementation, that is, it can be applied for measurements over a number of years and thus to define trends, which can significantly increase the reliability and accuracy of measurements, as well as the reliability of prediction.

In support of the above-mentioned model for improving the business of wineries, one can especially emphasize practically the derived possibility of improvement when it comes to the competitiveness of individual wineries, which was discussed in Chapter 4.3 Discussion and recommendations which arose from the value chain analysis of Serbian wineries.

Research in this Doctoral thesis related to the improvement of the business of Serbian wineries through value chain analysis can be considered a pioneering venture in the Republic of Serbia. In that sense, it represents a solid *platform for further research*, since this research has opened up space for further research, which is reflected in the possibility of conducting it in other regions of the Republic of Serbia, with the difference that now there is a developed methodology and valid benchmarking data (APPENDIX, 2. *Profile of the value chain of wineries*).

SCIENTIFIC CONTRIBUTION

The scientific contribution of this Doctoral thesis lies in the following:

- From the theoretical and practical point of view, the possibility for the strategic advancement of the state of competitiveness of wineries in the Republic of Serbia has been discovered.
- The assumptions were created in the Republic of Serbia for strengthening the existing wineries and forming the new ones, especially within the rural regions.
- Relevant literature has been systematized together with the research results so far related to the value chain of wineries.
- The value chain model has been developed for wineries which enables accomplishing of superior competitive performances.
- The original tools were developed for measuring relevant values of parameters within the value chain of wineries.
- The research results in this thesis concerning the advancement of business of Serbian wineries by the value chain analysis can be considered pioneer work in the Republic of Serbia and they represent a solid *platform for continuation* in other regions of the Republic of Serbia.
- Collected initial data for benchmarking (APPENDIX, 2. *The profile of the value chain of wineries*) within the future researches.

PUBLICATIONS

1. **Lapčević, G., Krstić, M., “Research of Risk in the Entrepreneurial Process”** - 7th International conference “Employment, Education and Entrepreneurship” Belgrade 2018, Business management, Entrepreneurship and Entrepreneurial Tendencies, p 158-178, Published by Silver and Smith Publishers, London UK, ISBN 978-1-993029-3-1,
2. **Lapčević, G., Nikitović, Z., Human resources management in Agriculture – Motivation and Control,** Journal of Scientific Professionals Trends in Business, Year VII, Volume 2, No.14 (2019), p. 57-67, Faculty of Business Economics and Entrepreneurship, Belgrade, <http://www.vspep.edu.rs/trendovi/index.php/tp/article/view/195>
3. **Lapčević, G., Competitiveness analysis of grape growing in business entities.** Journal of Bio-Based Marketing, vol. 3.1, pp. 41-51
4. **Lapčević, G., Value chain model in wine production.** Journal of Bio-Based Marketing, vol. 3.1, pp. 52-61