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**Open Innovation application comparative analysis for Canadian and
Spanish wine producing companies**

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1. Introduction

This project is the second part of a comparative analysis on the degree of application and maturity of open innovation strategies between Canadian and Spanish wine producing companies.

The first part of this work is a study of the existing relevant literature, concerning the open innovation and methods to measure its level of application in companies. This is followed by the development of an online survey to assess the degree of fulfilment of open innovation activities of a company and the building of a database of possible participants from Canada and Spain. This survey will allow acquiring data from a higher number of participants than the previous study so that the results obtained are more accurate and representative of the wine industry of both countries. The examination of the results will bring out the different approaches regarding open innovation of the Canadian and the Spanish wine producing companies.

1.1 Objectives

The main objective of this project is to determine to what extent are the strategies and activities of open innovation carried out in each country and subsequently evaluate the open innovation maturity level for both the Canadian and the Spanish wine producing industry.

For this overall objective to be achieved, it is necessary to fulfil the following more specific points:

- i) Review of the first part of this study [1], in which a preliminary comparative analysis was performed based on 6 study cases. This will permit to establish a starting point for this project and the set the guidelines to follow when deciding the survey questions, as well as defining the levels of maturity in open innovation and how to evaluate if they have been reached.
- ii) Review of the existing literature concerning the guidelines to follow when developing a survey to evaluate the open innovation activities of a company [2], [4], [5] and [6]; and studies with purposes similar to the present study that assessed the degree of implementation of open innovation in companies of different types and sizes [7], [8], [9], [10], [12], [13] as well as their maturity and evolution. This will contribute to the formation of a theoretical framework that will be helpful through the process of creating the survey and analysing the corresponding results.

- iii) Development of an online survey that will be sent to Canadian and Spanish wine producing companies to appraise which open innovation tactics and activities are being performed in each country. This will imply the creation of a database with the contact information of each participant winery and a cover letter to send with the survey. The survey and the contact information will enable the data collection for the analysis.
- iv) Statistical analysis and scrutiny of the results to determine the prevalent trends regarding the open innovation strategies and its level of implementation in each country. Formulation of consistent conclusions based on these findings to help understand the factors that propitiate the presence of open innovation in the wine industry of both countries.

1.2 Justification

This project draws from the comparative analysis based on case studies of the open innovation between Canadian and Spanish companies of the wine sector [1], in which 3 wineries of the Canadian region of Quebec and 3 wineries of the Spanish region of Catalonia were interviewed in deep to assess how open innovation was managed. Based on these interviews, some conclusions were drawn regarding the differences in the open innovation approach of the wine industry of both countries. Nevertheless, the reduced number of wineries that were included in this earlier study might cause that the results and findings obtained might not be as representative of the actual degree of application of the open innovation strategies of both countries as preferred.

In order to overcome this limitation, the present work will gather and synthesize the questions of the interviews conducted in the previous study in the form of an online survey, which will make it easier and feasible to include more wineries in the investigation. Consequently, wineries from other regions apart from Quebec and Catalonia will be included in the present study. The survey will provide more data to perform a more detailed analysis that will lead to a better understanding of the real status of open innovation in the wine industry of both countries.

This project will, therefore, corroborate and broaden the results of the prior study based on the information provided by a higher number of wine producing enterprises. Accordingly, the main objective of the previous study, which was to evaluate if the differences in the open innovation tools applied by the wine producing companies are affecting the significant difference in the general performance of the wine industry of both countries, will also be assessed in the present study but with a different methodology and data.

1.3 Methodology

First, a review of the previous study [1], the Oslo Manual [2], literature assessing how to improve the response rate of surveys [4], [5], [6] and similar works whose objective was to determine the trends and tendencies of the application of open innovation practices by means of a survey in both large [12], [13] and SMEs (*Small and Medium-Sized Enterprises*) [7], [8], [9], [10] will be conducted. The aim of this first step is to set a theoretical background about open innovation and the levers that promote its implementation in industry, as well as to acquire a better understanding of how to perform a survey to evaluate the degree of application of the open innovation strategies in the industry. This step will also be useful to set a series of departing conclusions to contrast with the results of the study.

Second, a database including a high number of Canadian and Spanish wineries will be built. This database is intended to include wineries from several regions of both countries, and so the survey will be sent to participants from all over the countries. This will propitiate that the results obtained are more representative of the country as a whole.

Third, an online survey will be developed in the principal languages of both countries (English, French and Spanish) and sent to the participants. The survey will first ask participants questions to classify their enterprise by size and location. Then, the participants will be asked to answer questions regarding each of the open innovation levers identified in the previous study [1], so that they can be assigned to a level for each open innovation lever. This will simplify the evaluation of the existing approaches regarding open innovation in the participant's company and its comparison with other companies.

Last, the data acquired will be analysed in order to assess the current degree of implantation of the open innovation strategies in the wine producing companies of both countries. These results will help to determine if the differences in the performance of the wine producing industry of both countries are correlated to the level of application of the open innovation approaches and which factors influence the latter.

1.4 Expected Outcomes

First and foremost, with the data acquired by the survey, it is expected to determine to which extent the open innovation tools and strategies are being applied in the participant's wineries. Subsequently, it is intended to assess if the size, the location or other characteristics of the winery are related to an increased degree of implementation of the open innovation tactics.



Furthermore, as was done in the previous study [1], it is intended to compare and analyse the differences and similarities regarding open innovation that exist in the wine industry of both countries and to appraise which aspects of the country cause the dissimilarities apperceived. In addition, this analysis will permit to reach significant conclusions about which features of the companies favour the adoption of the open innovation.

Moreover, this study includes the process and the difficulties that may arise when creating a survey, so that it can also serve as a guide for future studies with a need to conduct a survey.

2. Framework

2.1 Open innovation analysis

In the previous study [1] it was developed a theoretical framework used to analyse and evaluate the level of maturity of the companies interviewed (see *Table 1*). This framework distinguishes between 3 directions or patterns in which an enterprise can carry out the open innovation process, and 5 levels of accomplishment for each of the 7 levers that contemplate all aspects to consider when implementing an innovation strategy. To ensure the continuity of the present work regarding the previous study, this theoretical framework will also be used in the present study to evaluate the participant companies in terms of open innovation. Consequently, the questions of the survey will be intended to identify which level of each lever has attained the participant company.

Direction	Maturity	Levers
Inside-out	Level 1 – Initial	Surveillance
Outside-in	Level 2 – Managed	Networks and partnerships
	Level 3 - Defined	Organisational structure
Coupled	Level 4 - Quantitatively managed	Corporate culture
	Level 5 - Optimizing	Self-evaluation
		Intellectual Property

Table 1: Theoretical framework used for the open innovation analysis of the chosen enterprises. Source: [1]

The direction column of the previous table refers to the direction in which the flow of information between the company and the environment occurs. This direction generates 3 different patterns in which an enterprise can fulfil the process of implementing the open innovation:

- Inside-out: Enterprises following an inside-out open innovation process will introduce its new ideas and developments to the market not directly by themselves but by transferring it to other organizations. This implies that the enterprise has to build relationships with external organizations, so as to transfer the ideas and sell or share its intellectual property.
- Outside-in: Enterprises following an outside-in open innovation process will try to obtain new ideas and technologies from external sources, such as other organizations, suppliers and customers. This also infers that the enterprise is interested in having close contact with universities and clusters as additional sources of knowledge, as well as investing in innovative young companies to profit from their findings.
- Coupled: Enterprises following a coupled open innovation process will perform a combination of the activities mentioned in the other two processes. This entails that the enterprise integrates the external knowledge and competences as well as externalize its own in order to enable the transfer of learning.

The degree of maturity of the open innovation process of a company will be rated with one of the 5 levels included in the table, which were defined in [1] and are based on the CMMI (*Capability Maturity Model Integration*) model [3]. Evaluating and assigning a level to each participant company will be useful to compare the extent of adoption of the open innovation between companies and countries. The levels and the general characteristics of the company assigned to each level are the following:

- Level 1 – Initial: The enterprise is focused on day-to-day operations. The possible opportunities to improve or innovate are based on extrapolations from the past. Innovative outputs of the enterprise's performance are inconsistent and unpredictable.
- Level 2 – Managed: The enterprise has identified and defined the need to innovate. It has developed a manner in which trace its outputs derived from innovation, but they are still inconsistent.
- Level 3 – Defined: The enterprise undertakes initiatives to find latent or unrealized opportunities. It has also developed and implemented innovation practices, procedures and tools. The innovation outputs have been defined, they are consistent and allow the company to maintain their market share.
- Level 4 – Quantitatively managed: The enterprise's activities and resources are integrated and aligned. Outputs from innovation are consistent and a source of differentiation from the competence.

- Level 5 – Optimizing: The enterprise performs a future-oriented scanning and exploring activities to acquire a consistent strategic input. The procedures to identify latent, unrealized innovation or improvement opportunities are formal. The activities and resources of the enterprise are aligned and synchronised. The outputs resulting from innovation provide a sustained competitive advantage to the enterprise.

Lastly, each of the innovation levers identified in [1] will be also used in the present work as the possible methods and areas in which the open innovation can be implemented. The levers will also be used to organize and gather the questions of the survey assessing the open innovation activities related to each lever. The main levers differentiated are explained next:

- Surveillance: The surveillance done by an enterprise includes all the activities performed with the aim of knowing what is being done in the sector or to stay aware of the technological releases that may be beneficial to the business.
- Networks and partnerships: These include the enterprise's inter-organizational relationships with other organizations with the objective that both parts profit from acting jointly.
- Organizational structure: It involves the enterprise's structural composition and internal networks, that influence the form in which the company is organized and the interactions between all its parts.
- Corporate culture: The enterprise's corporate culture is normally referred as the set of values, principles and habits that characterize the habitual manner to work. Having a strong corporate culture reinforces employees' behaviour and it is essential to ensure that open innovation is accepted and applied.
- Self-evaluation: It refers the act of the enterprise of controlling its outcomes by means of evaluating its actual results with respect to what was expected to be achieved in a designated period of time. The self-evaluation is important to make corrections in time if a deviation from the established plan is detected. These corrections usually involve decision-making, which can also be done by taking into account the indicators or measures used for the self-evaluation.
- Intellectual Property: The enterprise's Intellectual Property (IP) is the knowledge, techniques, developments and products which have been protected to prevent others from making profit or using it.

2.2 The Oslo manual

After the revision of the study that serves as starting point for the present work, the following publication to review is the well-known Oslo Manual [2], which is a reference to the study of innovation and how to measure it. The main goal of the Manual is to provide a set of guidelines that can be used to identify meaningful indicators of innovation and thus support the study and measurement of the innovation process in a company. Therefore, this publication is of special interest for the present work because it presents a theoretical framework for innovation surveys, offers suggestions and recommendations for implementing a survey and clarifies the types of issues that can be covered by national and international innovation surveys.

2.2.1 Survey issues

The manual contemplates many aspects related to the creation of surveys to measure innovation that are worth remarking because they address issues that will be covered in the present study.

Regarding the approach to data collection on innovation, the manual specifies the need to decide the survey approach. In the case of the present study, the “subject” approach regards the innovative behaviour and activities of the company as a whole. Accordingly, the main objective of the survey is to explore the factors influencing the innovative behaviour of the company (which includes strategies, incentives and barriers to innovation) and the scope of its innovation activities. It is also desired to examine the outputs and effects of the innovation in the company.

With reference to the survey methods, to ensure a satisfactory response rate the manual recommends to keep the questionnaire as short as possible and assure that all the questions and instructions are clearly formulated. It also highlights the importance of checking the reliability and consistency of data collected and implement reminder procedures to increase the probability that more participants complete the survey.

The manual also presents certain conclusions resulting from previous innovation analyses, which offer basic premises with which to compare the results of subsequent surveys. Due to the fact that small and medium is the predominant company's size in the wine industry, it is important to bear in mind the following affirmation, included in the manual: *“Small and medium-sized enterprises (SMEs) are of necessity more specialised in their activities. This increases the importance of efficient interaction with other firms and public research institutions for R&D, exchange of knowledge and, potentially, for commercialisation and marketing activities”* [2].

With respect to the regional differences in innovation, the manual empathises the fact that there may exist regional factors that can influence the innovative capacity of companies. Regional differences in levels of innovation activity can be substantial, making it interesting to analyse innovation at the regional level, so as to identify the main characteristics and factors that promote innovation activity in some regions with respect to others. The analysis at the regional level of innovation and the factors that cause the difference between regions can be of great help in understanding innovation processes and be valuable for the elaboration of policies to develop the less innovative regions.

2.2.2 Measuring the innovation

The manual clarifies which aspects of innovation can be measured and which constraints are faced when attempting to evaluate the degree of innovation in a company.

First, it is stated that innovation surveys can provide extensive information on the innovation process of a company. Surveys assessing innovation permit to identify motivations and obstacles to innovation, changes in the way companies operate, the kind of innovation activities that companies perform and the type of innovation implemented. The survey can also provide information on the company's connexions with other organizations or parts in its supply chain and on the methods the company uses to protect its innovations.

Second, the analysis will often require additional data from the company apart from the questions regarding innovation, with the objective of classifying the company to compare it with the rest of companies taking the survey. The company data that may be used for this purpose will be explained in the following section.

Third, it is important to take into consideration that innovation is a continuous process and therefore difficult to measure. It is especially difficult to measure in companies whose innovation activity is mainly characterised by series of small and incremental changes, unlike companies innovating by means of well-defined projects to implement significant changes.

Finally, it is difficult for surveys to obtain information about the timing of innovation activities performed by the participant companies as well as their implementation and impact on the performance.

2.2.3 Participant companies' classification

For innovation surveys it is essential to classify the participant enterprises by its size. Although different parameters can be used to define the size of a company, it is recommended that size should be measured on the basis of the number of employees.

It is important to point out that the standard number of employees that define the company size are different in Europe and North America, so for the survey used in this study the companies will be categorised according to their country's classification of size by the number of employees.

Nevertheless, other types of classifications of companies can be used in innovation surveys for analytical purposes, with respect to the type of goods produced or its co-operation with other enterprises, organizations or public institutions.

Lastly, it is essential to ask for the location of the participant company to assess possible regional aspects that might be of importance.

2.2.4 Objectives and innovation effects

A survey is a valid method to collect data on the objectives or effects of innovations implemented by enterprises. Questions on both the objectives of innovation and their actual effects can provide valuable information on enterprises' innovation activity as well as its aspirations, but it may not be possible to include both questions in innovation surveys. The choice between the two questions may be made depending on which one is considered most useful for the analysis and comparison. It is necessary to bear in mind that a drawback of questions on effects is that the impact of recent innovations may not be felt by the time the company takes the survey and that the disadvantage of questions on objectives is that the actual effects may differ substantially from expectations.

In any case, it is recommended to use a scale to ask enterprises whether each factor (the objective or the effect of innovation) is relevant and, if so, its importance.

2.2.5 Questions on the *appropriability* of innovations

The ability of companies to appropriate the gains from their innovation activities and so prevent others from making profit of it is an important factor affecting innovation. Accordingly, the companies that are unable to protect their innovations from imitations by competitors will have less incentive to innovate. On the contrary, it is important to take into consideration that if an industry is able to function well without formal protection methods, the fact that these are promoted and implemented might reduce and slow the flow of knowledge and technology, and so stop the development of the industry, which leads to higher prices for goods and services.

As the design of legal methods of protecting innovations is mainly decided by policies, it is interesting to acquire data on which types of methods of protection are used and their

relative importance, because this information can help policies to focus on the intellectual property rights that maximise the economic and social benefits.

The manual also suggests a list of formal and informal methods of protection, of which the following are the most applicable to wine producing companies:

Formal methods	Informal methods
Patents	Secrecy that is not covered by legal agreements
Trademarks	Complexity of product design
Confidentiality agreements and trade secrecy	Lead time advantage over competitors

Table 2: List of formal and informal methods of protection applicable to wine producing companies. Source: [7]

Patenting is a method for protecting research and development results achieved by a company. The data related to patents functions as an indicator for innovation activity and also provides information on the innovative capability of the enterprise.

The registration of a trademark related to the company as a whole or a product line protects the company's image and the association of the products with the company.

The confidentiality agreements between companies and other organizations are intended to protect the innovations achieved jointly, while at the same time allows the company to interact with other organizations to continue innovating.

The manual recommends collecting data on whether or not companies use or have used these methods of protection for their innovation through questions that use a binary or an ordinal scale.

2.2.6 Survey Procedures

The Oslo manual contains a whole chapter dedicated to the survey procedures, in which it provides guidelines for the collection and analysis of innovation data. These guidelines are specially intended to enable the results of the survey to be comparable across countries.

Regarding the size of the companies to be included as participants in the survey, the manual recommends to include mostly companies with more than 10 employees. However, it points out that it may also be useful to include companies below this threshold as innovation activities in these smaller companies are of considerable policy interest.

The manual recommends the following survey methods to facilitate the data collection and to maximize the number of participants.

First and foremost, it is important to be aware that voluntary surveys generally have a high non-response rate. These low response rates result in a smaller sample than expected and consequently a higher variance.

Second, although online surveys are well established and inexpensive, its usually low response rate becomes a significant problem. The best way to alleviate this problem is to perform several reminders, including telephone reminders, which are usually necessary to increase response rates to an acceptable level. It is also important to give an incentive to potential participants to complete the survey like to promise to send respondents the main findings from the current survey.

Third, another option to encourage companies to participate is to allow all respondents to see the entire questionnaire, including the questions that the questions that respondents may not be required or will not be able to answer. However, this approach may also raise issues of confidentiality and continuity.

And lastly, another factor to be considered when targeting the possible participants is addressing the suitable employee of the enterprise as respondent. This factor is particularly important in innovation surveys, as the questions tend to be very specialised and can be answered by only a few employees, often not the easiest to reach. For this reason, it is highly recommended to make a special effort to identify respondents by name before data collection starts.

The manual also presents some basic rules that should be followed when designing the questionnaire for an innovation survey:

- Each questionnaire should be tested before it is used.
- The questionnaire should be as simple and short as possible, have a logical structure and clear definitions and instructions. It has been proved that generally long questionnaires have lower response rates. Nonetheless, in case having a long questionnaire is unavoidable, the low response rate can be improved by devoting special attention to the design and layout and by giving clear and sufficient information and explanations. It is particularly important to design the questionnaire in such a way that even the companies with no innovation activities will still answer the questions that are relevant to them.
- As respondents' understanding of the survey may increase as they move forward from question to question, it is important to bear in mind that their answers may

depend on the order of the questions. In view of that, adding, deleting or moving a question may influence subsequent answers.

- The questions on qualitative indicators of innovation can use either a binary scale (yes or no) or an ordinal scale, especially when enterprises are asked whether the factor is relevant and, if so, its importance. The binary scale has the advantage of being simple and reliable, but it provides limited information. Additionally, if the answer is not evident as it cannot be based on facts, binary scales may introduce a high degree of subjectivity owing to differences in the interpretation of the question. The ordinal scale allows the ranking of factors in terms of their importance, but this fact also introduces a high level of subjectivity.
- In case the questionnaire is sent to more than one country, the translation and the design of the questionnaire should be given special attention, due to the fact that even minor differences between the country's questionnaires can limit the comparability of the results. Such differences can be caused by changes in the order of questions, or by adding or deleting categories. The translation should be made taking into account the particular local circumstances to avoid misunderstandings of concepts and definitions.
- For small companies in sectors with generally little innovative activity, it should be expected higher non-response rates.

Owing to the frequently really high non-response rate and its important effect on the survey results, the manual underlines the main aspects that influence the non-response rate as well as the facts that characterize it.

First, it is convenient to accept that in practice responses to innovation surveys are often incomplete, regardless of the survey method used. Two types of missing values in a responded survey can be distinguished: items and unit non-responses. Unit non-response means that the company contacted does not reply at all. This can be caused mainly because the email address used to contact the participants is no longer valid or since the company contacted refuses to answer. In contrast, an item non-response refers to the questions of the questionnaire that are left in blank. Item non-response rates are frequently higher for quantitative questions than for questions using binary or ordinal response categories.

An appropriate first step in dealing with non-responded questions in questionnaires is to contact the respondent again in order to collect the missing information.

If the missing information cannot be obtained after this first step, there are procedures that can be applied to still include the incomplete responses in the study.

One of these procedures permits to minimize the problem of item non-response by using imputation methods to estimate missing values on the basis of additional information. The idea behind is that the use of additional information will lead to more accurate estimates of the missing information than simply using the mean observed value and so it will minimise the bias caused by the non-responded questions.

Nonetheless, if the unit non-response rate is very high, no method or procedure can be recommended to solve the problem. In such case the results of the innovation survey can only be used as case studies, and therefore no conclusions should be drawn about the target population in general based on the survey results, as the bias may be too big.

With respect to the possible uses or purposes of the results obtained by innovation surveys, the manual presents the following two options for the presentation of results.

The results of innovation surveys can be used either for descriptive or for inferential analysis. The objective of the former is to describe the participating companies in terms of their innovative activities without drawing any conclusions about the general tendencies in the sector, what in this case would be the total target population. In this type of analysis the results are taken as observed for the individual respondent companies, and accordingly, there is not a generalisation of the results at the level of the total industry. Consequently, for this kind of analysis, unit non-response rate is of minor importance.

In contrast, the objective of the later is to draw conclusions about the total target population. In this case, the results obtained by the survey should give a representative estimation of the situation for both the participant and non-participant companies observed. For this type of analysis, the non-response rate is very important, as if the non-response rate exceeds a certain threshold, the potential bias may be so large that this type of analysis is useless.

The report with the presentation of results of the survey should contain metadata, including information on the procedure used to collect data, and procedures for dealing with non-response. This additional information will allow users to have a better interpretation of the data and to judge its quality.

3. Related articles

3.1 Methods to increase the response rate

The Oslo manual also recommends the publications by Dillman to palliate the generally high non-response rate [4], [5]. These publications assess techniques that are reasonably expected to improve response rates. Its major conclusion is that the most effective tactics to increase the response rate are follow-up mailings and that other tactics that may be helpful are prior notice, personalization and interest in the survey topic. The publications also explain that the characteristics of the survey that do not appear to make a significant difference in the response rate are the nature of the questionnaire, the deadline date, the promise of anonymity, the nature of the cover letter and the questionnaire length. As this statement is evidently in contradiction with the recommendations from the Oslo Manual, especially with regard to the clarity and length of the questionnaire, for this study the recommendations specified in the Oslo Manual together with the advice of Dillman's publication regarding the factors that do affect the response rate will prevail. This has been decided because the Oslo Manual is considered to be more applicable to the case as it is specially intended for innovation-related surveys, and it is also more recent than Dillman's publication.

The Total Design Method (*TDM*) by Dillman is also explained in this publication [4], and it is conceived to maximise the number of respondents to mail surveys. As email surveys are the modern evolution of the mail surveys, the fundamental principles of this method may remain applicable for the present work and for this reason they will be considered. However, as stated in [6], since the TDM has a proven rate of success and consequently it has been widely used ever since its publication, it is possible that it is not as effective now as the participants may have already become accustomed to these techniques.

The TDM states that questionnaire recipients are most likely to respond if they expect that the perceived benefits of doing so will compensate the perceived costs of responding. Accordingly, the design of the survey must be done regarding the following three considerations: the reduction of perceived costs (making the questionnaire appear easier and less time-consuming to complete), increasing perceived rewards (making the questionnaire interesting to fill out) and increasing trust (by use of official sponsorship). The TDM also includes the following recommendations: ordering questions to assure that the interesting ones related to the topic described in the cover letter come first; the use of question writing principles to ease the task of reading and answering questions; to include a mail follow-up one week after the first mail; sending individually addressed and signed letters; including a cover letter with descriptions of the study's social

usefulness and why the respondent is important and lastly including an explanation of how confidentiality is protected.

The review of this article is relevant for the present study because the high nonresponse rate is one of the major problems to overcome to perform the study, as it prevents the data collection.

3.2 Similar studies

It has also been sought and analysed other publications related to the present study with the goal of gaining knowledge about what has been achieved to date in the studies of the application of open innovation in industry, as well as learning more about how to carry out this type of studies and what results can be expected from them.

The most similar publication to this work that has been found is the study of which external sources show a higher likelihood to introduce innovations in the SME's companies of the Italian wine sector [7]. Its results concluded that the customers and the public sector are the most perceived as relevant external actors because they act as a source of ideas, knowledge, and resources to induce the innovation process. It also states that this result is only valid for product innovation and not for the case of process innovation. Surprisingly, this study resolved that suppliers do not help to promote product development processes and that product innovation is clearly positively affected by investment in R&D. Specifically, this study emphasizes that SMEs belonging to the Italian wine industry utilize external sources to improve their ability to develop innovation processes, being the end customers the most influential external source. Consequently, the SMEs use this external knowledge as a complement to their resources and competences to overcome the difficulties associated with their size (reduced R&D investments and limited human resources among others). Lastly, this study specifies that the future research to be done is to incorporate additional countries to the study or to use a larger database of participants to include other low-tech sectors as well, so as to produce more generalizable results.

This limitation of including only one type of industry was surpassed in the generalized study that evaluated how SMEs engage in open innovation by means of a survey [8]. The main purpose of this research was to investigate if the SMEs of Piedmont did engage in open innovation and which were the main sources of knowledge used. This study collected data with a questionnaire consisting of questions concerning general information about the company, the company's values, R&D, product development process and approach to external sources for innovation. This survey was sent to a total

of 422 SMEs from different industries and achieved a response rate of 31%. The results of this study showed that the SMEs of the Piedmont region still had a close approach to innovation as they mainly relied on internal sources to develop new products, and additionally that the most relied source of external knowledge were costumers, a fact that had already been concluded in other publications consulted.

Other reviewed work focuses on the potential of open innovation for SMEs and indicates networking as one effective way to facilitate open innovation among SMEs [9]. The most interesting outcome of this article for the present study is the fact that it identifies the barriers to innovation for SMEs, of which the most common is the difficulty for its developed innovations to reach the market. Therefore, to overcome this obstacle it suggests to use an intermediary between SMEs and large firms for the commercialisation stage.

Very analogous to the previous work is the paper that investigates if open innovation practices are also being applied by SMEs in the Netherlands, by means of a survey and a database of 605 companies [10]. This paper denotes, like other revised works, that SMEs pursue open innovation principally for market-related motives such as meeting customer demands or keeping up with competitors, and that its main obstacle to overcome is related to the organizational and cultural issues which arise when SMEs collaborate with external partners to help them with the difficulties of commercialization. Moreover, this paper also identifies the customer involvement and external networking to acquire new knowledge as the most important open innovation activity for SMEs, owing to the fact that they are informal practices that do not necessarily require substantial investments. Finally, it concludes that SMEs are already practising extensively open innovation activities and that this trend is increasing.

Another publication of the same field as the present study was made by Henry Chesbrough, known for coining the term open innovation [11]. For this research, he conducted the first large sample quantitative online survey of open innovation adoption among large firms from Europe and the United States [12]. The aim of this work was to assess to which extent large firms were practicing the open innovation strategies, as well as to examine the management of open innovation and what measures did respondent firms use to track its progress. The online survey was sent to the senior executives of more than 2,840 large and stock market listed firms, and it received usable survey responses from 125 firms in two months (which implies a response rate of approximately 4.4%). Some of the following findings obtained by this study that can be of interest as starting expectations departure of the present study are the following:

- Nearly 80% of the firms sampled were practicing open innovation and none of them had ever planned to abandon it.
- More than 70% of the companies reported that its top management actively supported open innovation and that this tendency was increasing.
- The leading inbound activities (to bring in external ideas and technologies into a company's innovation process) were customer co-creation, informal networking, and collaborations with universities and for the outbound practices (to enable unused internal ideas to be used by other companies) were joint ventures, selling market-ready products and standardization.
- The three leading partners for open innovation were customers, universities and suppliers.
- Open innovation is still not much formalized and therefore cultural norms are as important for open innovation as formal practices.

Likewise, it was also revised another publication by Chesbrough about the trends in open innovation of big companies, in which 12 companies were interviewed by telephone (with a response rate of 30%) [13]. It concluded that the open innovation was being applied also in companies operating outside the 'high-technology' industries and that the primary driver leading to the adoption of open innovation is the search for growth, in revenues and in new products.

Additionally, to glimpse the form and which questions could be important to add, an online survey on global open innovation has also been consulted [14].

4. Data Collection

In order to reach the objective of the present study, to assess the degree of implementation of open innovation in Canadian and Spanish wineries, it is necessary to acquire data of wineries of both countries to proceed with the evaluation.

The data collection requires three processes: the establishment of a database with the contacts of the wineries that will be invited to participate as respondents, the creation of the survey that will be sent to collect the necessary information for the study and the subsequent composition of the cover letter included in the email to encourage participation.

4.1 Contact Database

For the study two excel files were created with the contact information of the vineyards. For each winery there is at least the email and its location information. The excel file for Canadian wineries includes around 200 wineries mostly from the regions of Quebec and Ontario. Conversely, the excel file from Spain contains the contact information of more than 1800 wineries from all regions of Spain. The reason why many more vineyards from Spain have been added to the contact database is because it has been much easier to find more associations of wineries according to its appellation of origin, which has made the search for contacts easier and faster.

4.2 Survey

The survey was made using the online survey builder *Kwiksurveys* [15], which allows to create online surveys easily and intuitively, get both individual and full results reports and to simply share the survey with the participants by means of a link.

The survey was structured in eight pages:

- The first page asking for the respondent's email in case he wants to receive a report with the final results of the survey.
- The second page contains questions regarding the respondent's company to obtain general information about its characteristics, products and location with the purpose of being able to classify the company for its later comparison with the other respondents.
- The third page is related to the surveillance lever of open innovation. It asks about the external surveillance tools used by the company and its executor.
- The fourth page contains questions with respect to the networks and partnerships that the respondent's company builds with other organizations. The questions ask about the degree of importance given to a series of networking practices, the areas of the company affected by these practices, the conditions and limits of the company's collaborations with other organizations and the approximate size of its current contact network.
- The fifth page comprises a set of statements about the organizational structure of the respondent's enterprise and asks about the degree of agreement with respect to the company.
- The sixth page includes several affirmations about the corporate culture of the respondent's enterprise and asks about the degree of agreement with respect to the company.

- The seventh page makes reference to the self-evaluation of the company as a lever for the open innovation. It asks about four possible indicators used for self-evaluation (investment in R&D, the number of patents, lead time of innovations and analysis of the impact of innovations) and the use that the company makes of them. Finally, there is a question on the decision making of the company to know if it is based on the experience or on the use of the indicators mentioned previously.
- The last page contains questions regarding the intellectual property (IP) of the respondent's company. It asks about the new introductions (products, processes or marketing strategies) in last five years, as well as about the formal methods of IP protection used. Moreover, it asks about how the company manages the IP issues that may occur and also the uses given to its IP. It is important to bear in mind that, although the Oslo manual recommended observation periods of up to three years, it has been considered appropriate to extend the period over the last five years to ensure that companies which have introduced a novelty answer the question affirmatively.

A different survey was constructed for each of the main languages of Canada and Spain: English, French and Spanish. Although at first it was not intended to create the French version of the survey, it was finally built due to the insistence of the wineries from Quebec and the urgent need to raise the number of Canadian responses.

The three paper form versions of the survey are included in the Annex.

4.3 Cover letter

The cover letter first explains the purpose of the survey and indicated that it is a research project of the École Polytechnique de Montréal. Hence, the recommendation of including a cover letter with descriptions of the study's social usefulness to increase the likelihood of responding to the survey included in [4] is met, and by indicating that it is a study of a public entity such as the École Polytechnique de Montréal, it is also fulfilled the advice given in the TDM [4] about increasing trust.

The cover letter also specifies that the time required to complete the survey will be less than fifteen minutes and it assures the confidentiality of the answers given. This allows to comply with the recommendations present in [2] and the reduction of perceived costs detailed in [4].

Bearing in mind the advice given in [2] about giving an incentive to participate which is in agreement with the premise of the TDM [4] about increasing perceived rewards, the

cover letter provides the possibility of receiving the survey results to participants if they provide their email at the start of the survey. To have the respondent's email is advantageous due to the fact that if they do not provide the email their response is completely anonymous, and therefore they could not be sent the report with the final results. Equally, having the emails of the vineyards that have already answered the survey is necessary to avoid including them in subsequent follow-up emails.

Then the cover letter indicates the end date of the data collection with the aim of encouraging potential participants to answer the survey when they receive the email so that they do not leave it for later. This was included in the cover letter despite the fact that the publication [4] denies the effectiveness of this method. The total time since the survey was sent until the start of analysis of the results was one month, specifically November 2016.

Following the deadline for completing the survey, it is included the link through which they can access the survey online.

Finally, the potential participant is thanked in advance for its time and he is informed that in case he does not wish to receive more messages related to this study he just needs to reply saying so.

4.4 Contacting the participants

Initially, all potential participants from each country that were included in both databases were contacted through a generic email that included the cover letter explained previously. However, due to its limited success, the main conclusion of [4] was applied and weekly reminder emails were sent out to encourage participation of those who had not responded the survey. Nonetheless, the respondents that had provided his email were not contacted again. Owing to precisely this low response rate in the first round of emails sent it was decided to expand the contact database, but only the Spanish contact database was extended because of the very large number of existing Spanish vineyards. In total four follow-up set of emails have been sent to the original contacts of the database, whereas to the contacts that were added later to extend the database have been reminded in a smaller number of occasions.

Two other methods of contacting potential participants were also tested to check if they achieved better results than the generic email and its subsequent reminders.

The first of these methods was to send personalized emails to those vineyards for which there was additional information available, such as the name of the owner or the person who could answer the survey. In these adapted emails, the cover letter was addressed

to the person by its name and it was indicated that his vineyard was especially interesting for the study for a reason in particular. These personalized emails were sent to vineyards of special interest for their innovative activity or because they belonged to regions from which data had not been obtained yet.

The second method that was attempted to reach the wineries was to call them directly to explain the main purpose of the research project and to ask them to participate. They were offered the option of answering the survey on the phone or sending it to the mail of the person they considered the most appropriate to respond to this type of survey.

Additionally, the link to the survey was sent to acquaintances who knew owners or workers of wineries in Spain so that they could ask them in person. Each winery was contacted in the predominant language of each region. The wineries from Quebec were contacted mostly in French (since when they were approached in English some of them expressly requested to be addressed in French), for the rest of the Canadian wineries it was used both English and French. For the wineries of Spain, they were addressed in Spanish except those from Catalonia and the Balearic Islands who were contacted in Catalan.

5. Results

Initially, it is important to note that of the 200 emails sent to Canadian wineries, 22 complete answers have been obtained, which implies an 11% response rate. For Spain, only 47 responses were obtained out of 1800 wineries contacted on multiple occasions, which results in a response rate of 2.6%. The response rate obtained is much lower than the 20% response rate that was accomplished in the study conducted in [7] which is very similar to the present study, but is nearer to the 4.4% response rate achieved in [9].

5.1 Descriptive analysis

The proportion of the respondents' company size by country (*Figure 1*) clearly shows that the vast majority of the companies included in this study are SMEs, as could be expected given the characteristics of the wine producing industry. Similarly, *Figure 2* shows the distribution of the products made by the wineries of both countries.

Regarding the first lever of the open innovation identified, the surveillance, it is concluded that the most frequently used source of external knowledge is the customers, as was already resolved in [7] and [8]. The frequency of use of each surveillance tool was assessed using a Likert scale, which evaluates from 1 to 5, being in this case: 1 never, 2 rarely, 3 sometimes, 4 often and 5 all the time. The next information source in order of

importance is the monitoring of new technologies that may affect the sector, and the least important is the patent tracking (*Figure 3*). Participants affirm that the person in charge of performing this surveillance is usually the owner, followed by employees and to lesser extent third parties (*Figure 4*).

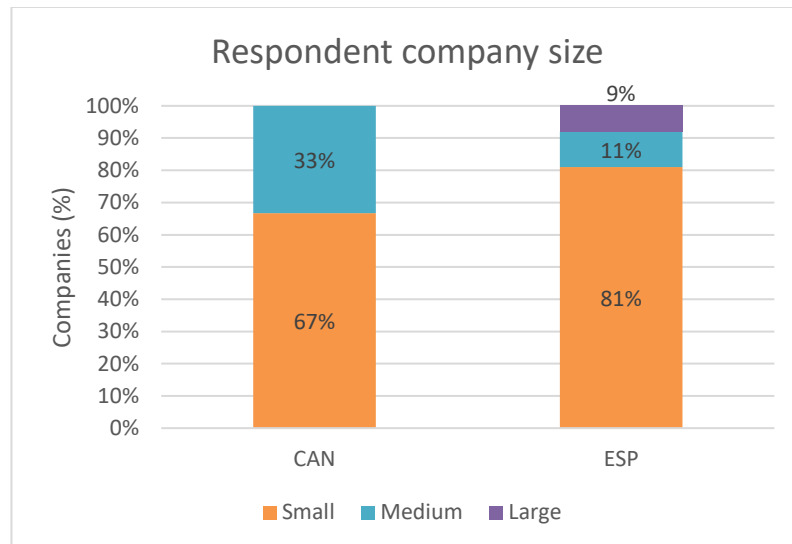


Figure 1

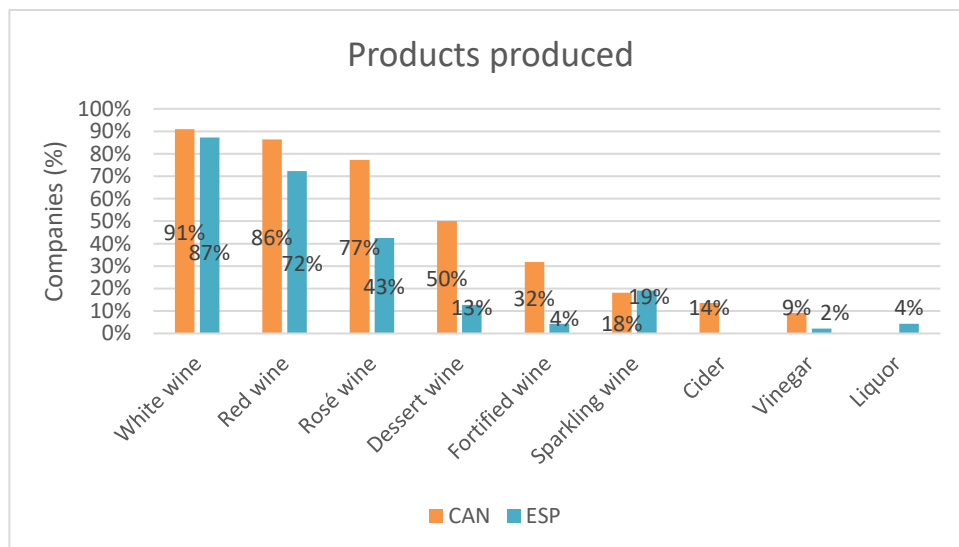


Figure 2

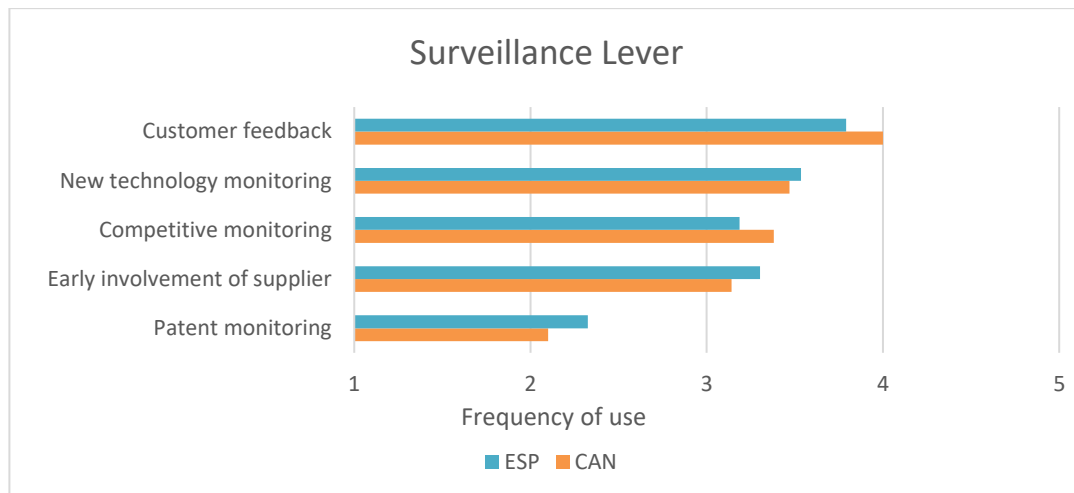


Figure 3

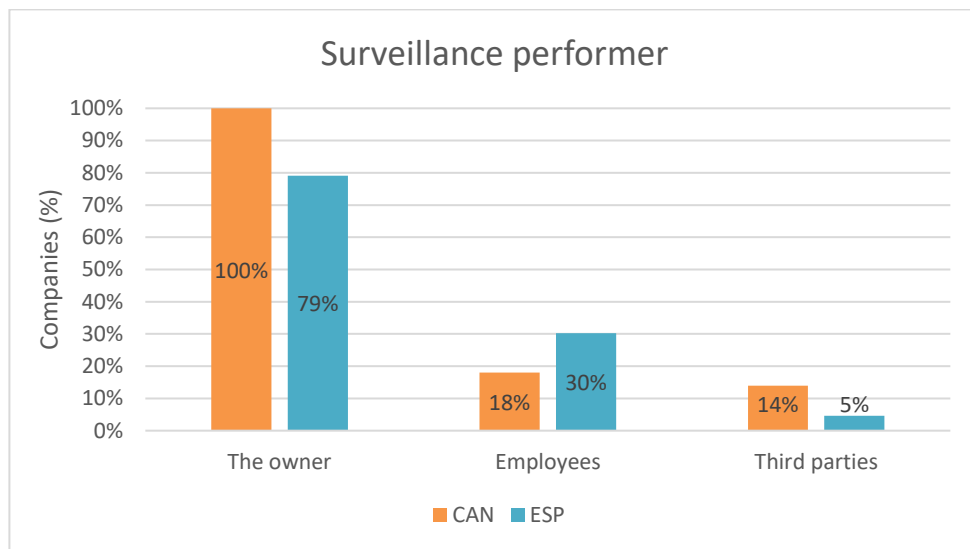


Figure 4

With regard to the second lever of the open innovation identified, the networks and partnerships, the importance given to each practice was also assessed by a Likert scale, being in this case: 1 none, 2 little, 3 some, 4 high and 5 extremely high. The practices that were given more importance were precisely the execution of networks and partnerships with other companies and the configuration of a wide contact network (Figure 5). The data shows that in Canada the participation in associations is considered to be more important than in Spain, whereas the outsourcing is more significant in the latter. The area most affected by these practices is marketing in both countries. It is noted that Canadian companies perceive that these practices affect to a larger extent all of their business areas (Figure 6). Besides, 94% of the Canadian companies consulted claim that they are the one who negotiates the conditions and sets the limits in their collaborations with other companies, while 84% of the Spanish companies confirm the same. Moreover, the Spanish companies' contact network size tends to be much larger

than the Canadian's contact network size, which is understandable given the difference in the number of companies belonging to the industry of both countries (*Figure 7*).

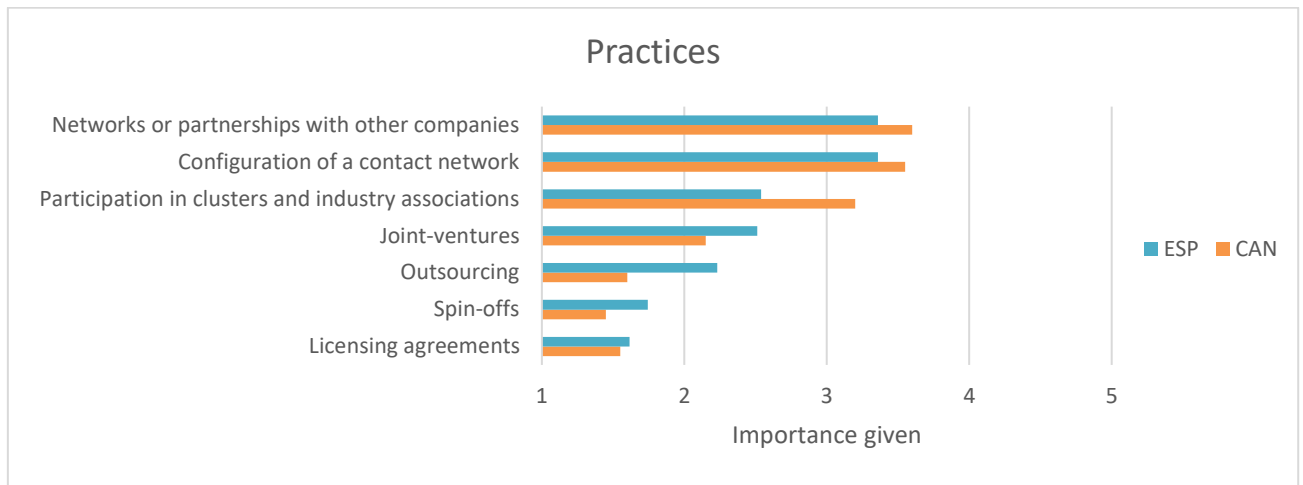


Figure 5

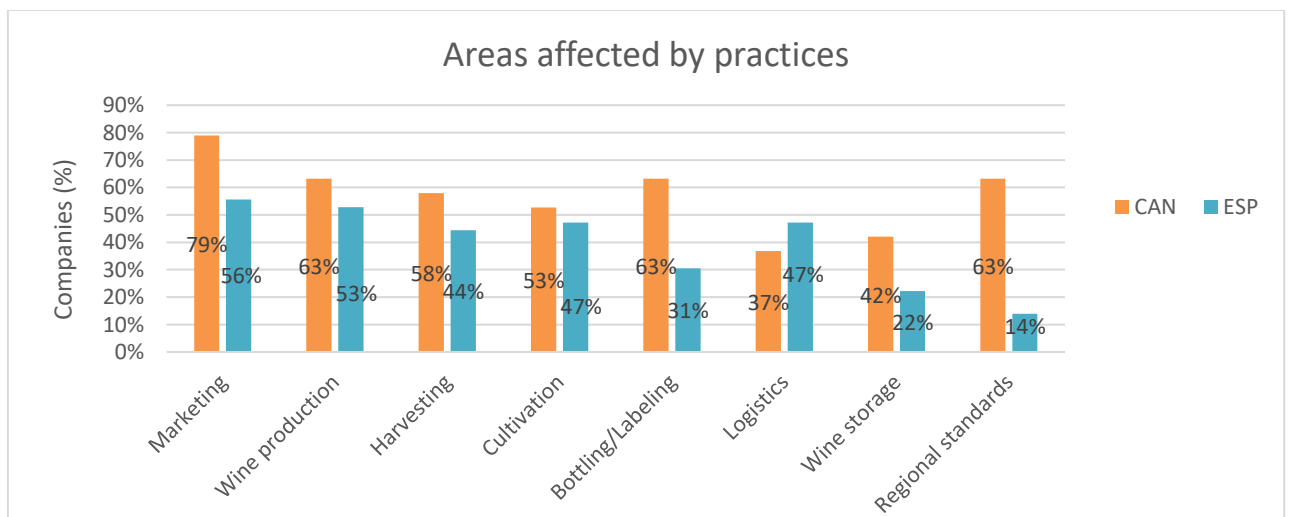


Figure 6

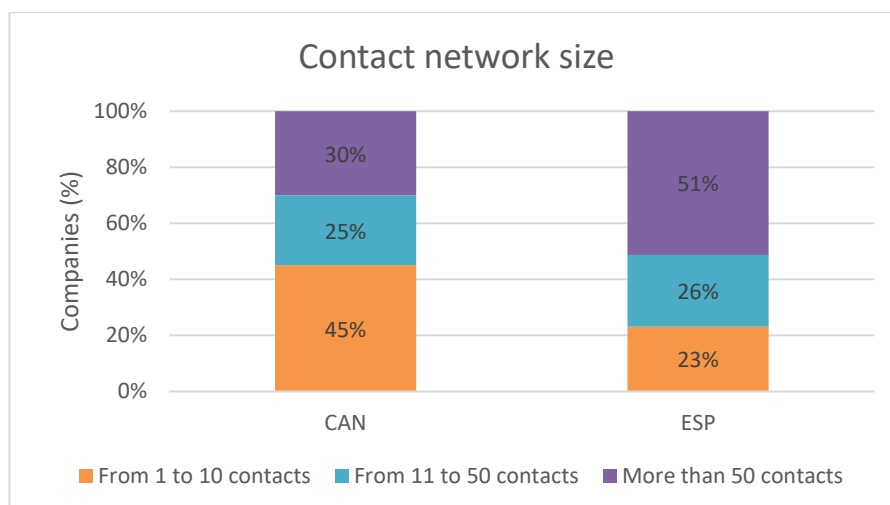


Figure 7

Concerning the levers of organizational structure and corporate culture, the respondents were asked for their degree of agreement with a series of statements, which was evaluated using the Likert scale again. The results obtained are shown in the *Figures 8 and 9*. *Figure 8* shows the importance given to each of the following statements: "My company is aware of the importance to adapt itself towards open innovation", "There is a close interaction among all the departments of my company", "Top management supports and incentives open innovation", "There is a group of people within my company responsible for managing and evaluating new ideas.", "Financial resources are dedicated to new product development", "Structures to support the innovation process are in place of being implemented", "The structures mentioned in the previous item also include the interaction with the external environment" and "The interactions of my company within the supply chain are informal". Likewise, *Figure 9* displays the importance give to the following claims: "My company is attentive to the voice of the customer", "My company is aware of the importance of innovating", "My company is prone to work with clients and suppliers to improve products and processes", "The top management spends time and efforts to foster a climate towards innovation", "New ideas are usually embraced", "Employees at all levels are encouraged to proactively contribute to innovations", "My company is prone to work with universities and government players for innovation purposes", "Open innovation is an important component of my company's culture", "My company is propense to risk-taking" and "All areas and parties of the company are aligned to work jointly towards open innovation".

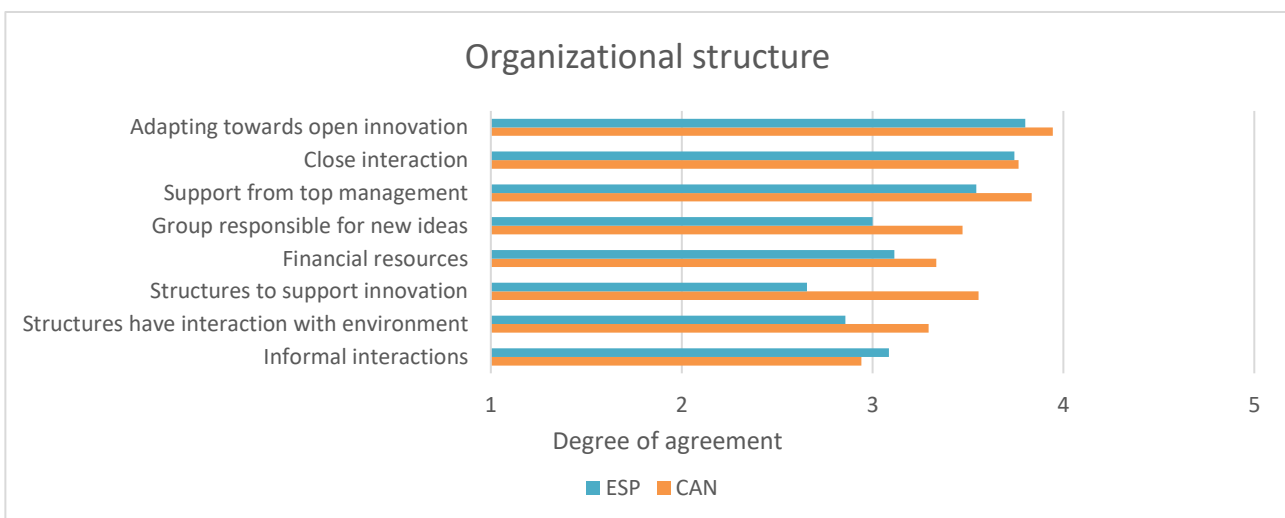


Figure 8

Both countries show that what is most valued by the participants is the identification of the need to adapt themselves towards open innovation, the closeness of the interactions in their value chain and the involvement and support of the top management in the innovation process. Once more, it is proved that the customer is the most valued source

of information for the innovation process. It also stands out the fact that Canadian enterprises show a greater general agreement with all the statements.

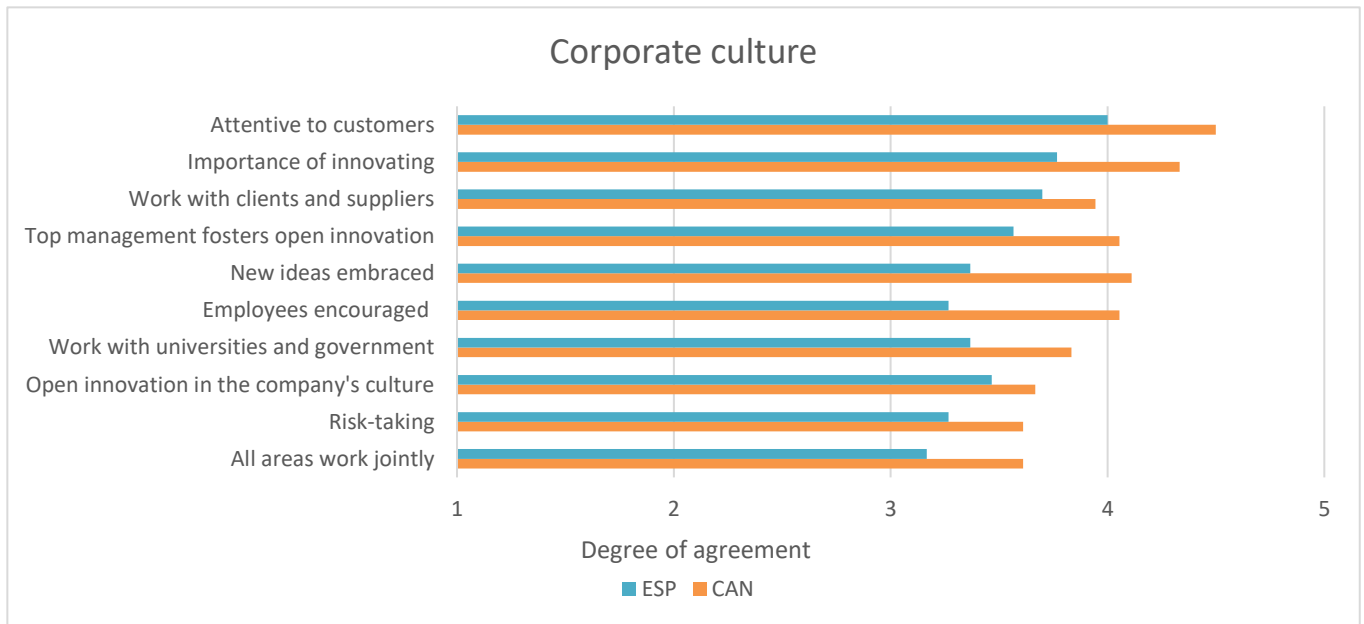


Figure 9

Concerning the self-evaluation lever, the proportion of participants using each of the indicators defined in the survey and the use of the information provided by the indicator is summarized in the *Figures 10-13*. It is to empathise that the Spanish companies seem to use indicators as an additional source of information more than the Canadian companies. Furthermore, it can be observed that the most used indicator is the analysis of the impact of introduced innovations and that the most common use for the information obtained by indicators is for strategic decision-making.

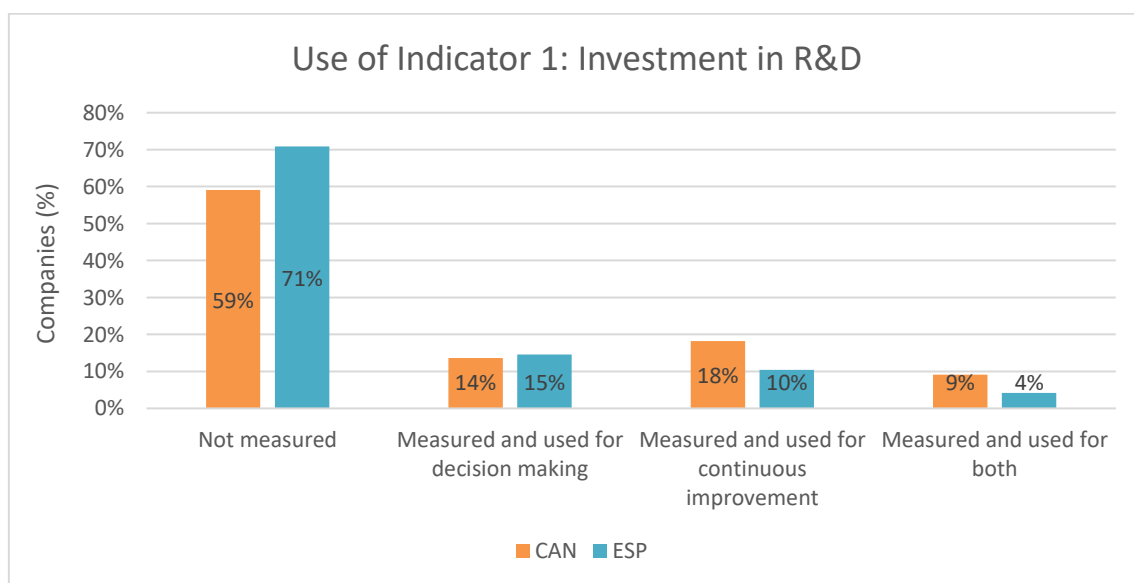


Figure 10

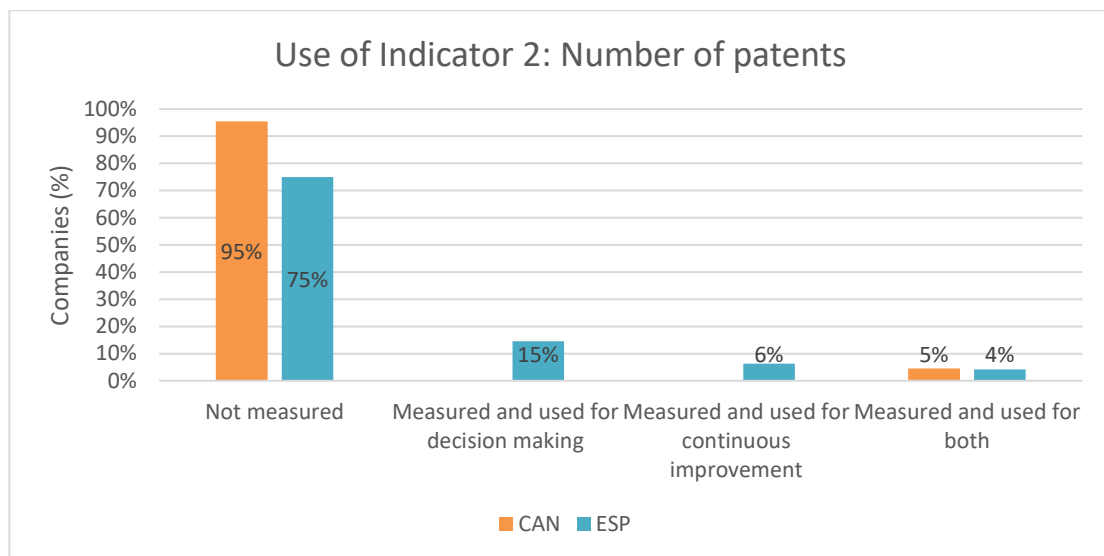


Figure 11

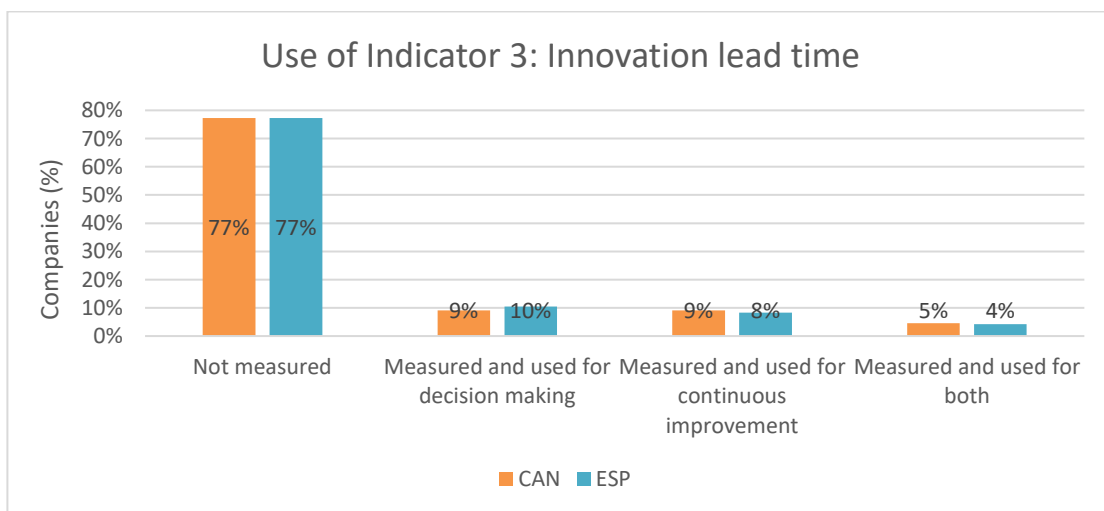


Figure 12

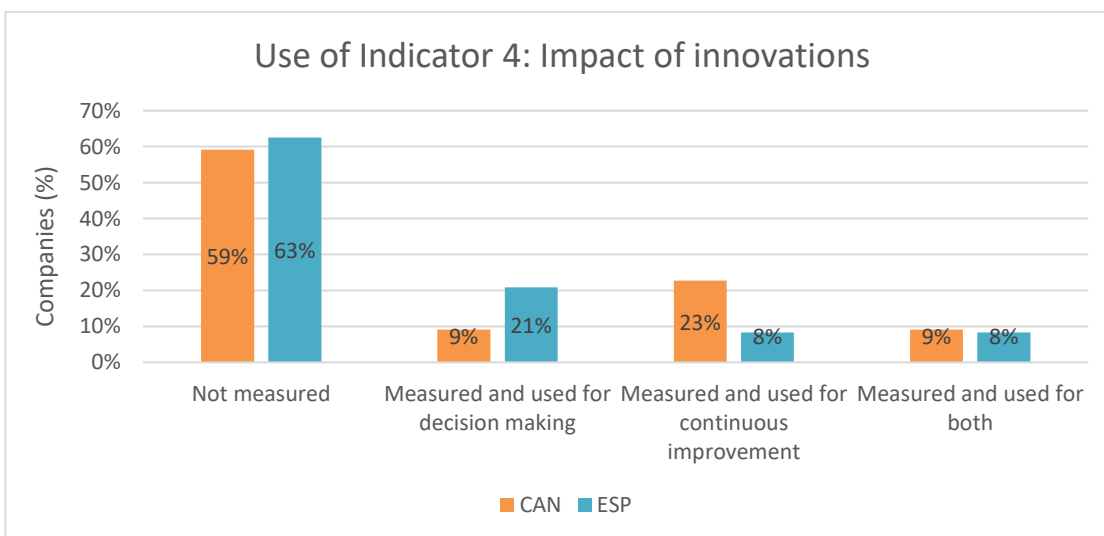


Figure 13

Figure 14 shows the distribution of the companies of both countries that do not measure any of the indicators mentioned before or measure at least one of them. This graph gives an insight on whether the fact that more companies base their decisions on indicators for their decision making (see Figure 15) than the companies that have actually declared to measure these indicators is because the companies use some other indicator different from those previously mentioned or if this is due to the fact that the companies that claimed to measure these indicators are distributed in the sample. When asking the participants if decisions in the company were taken based on the information provided by indicators or on the owner's and employees' personal experience, differences were perceived among countries, as the Spanish companies seem to rely more on the indicators than the Canadian companies (Figure 15). This is consistent with the previous result, in which it was concluded that Spanish companies are more prone to use indicators and therefore it implies that Spanish companies adopt more mature managerial processes.

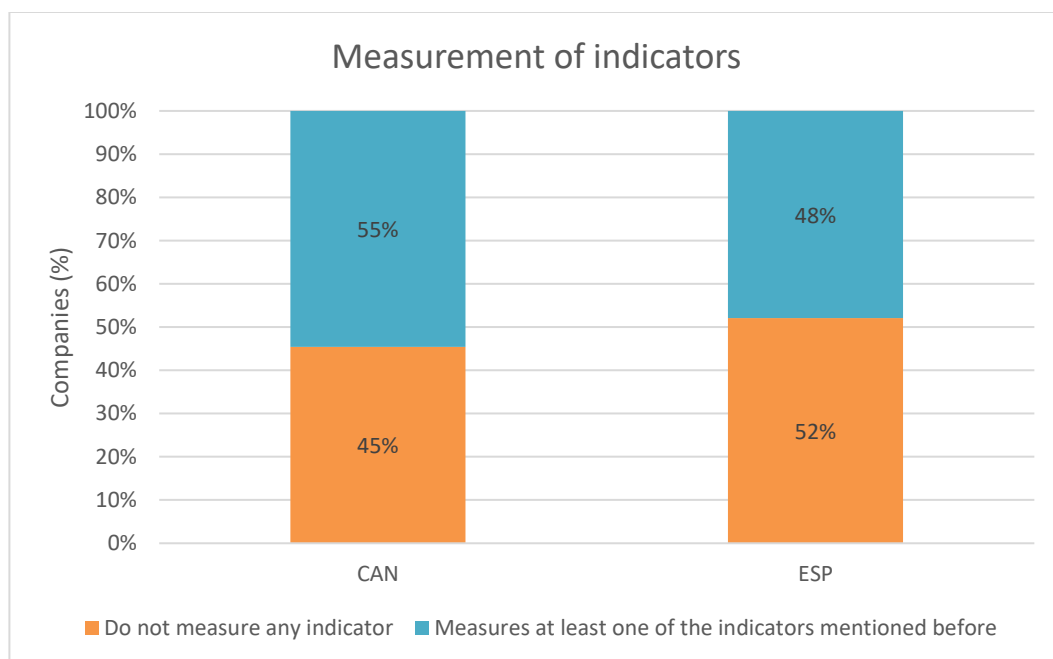


Figure 14

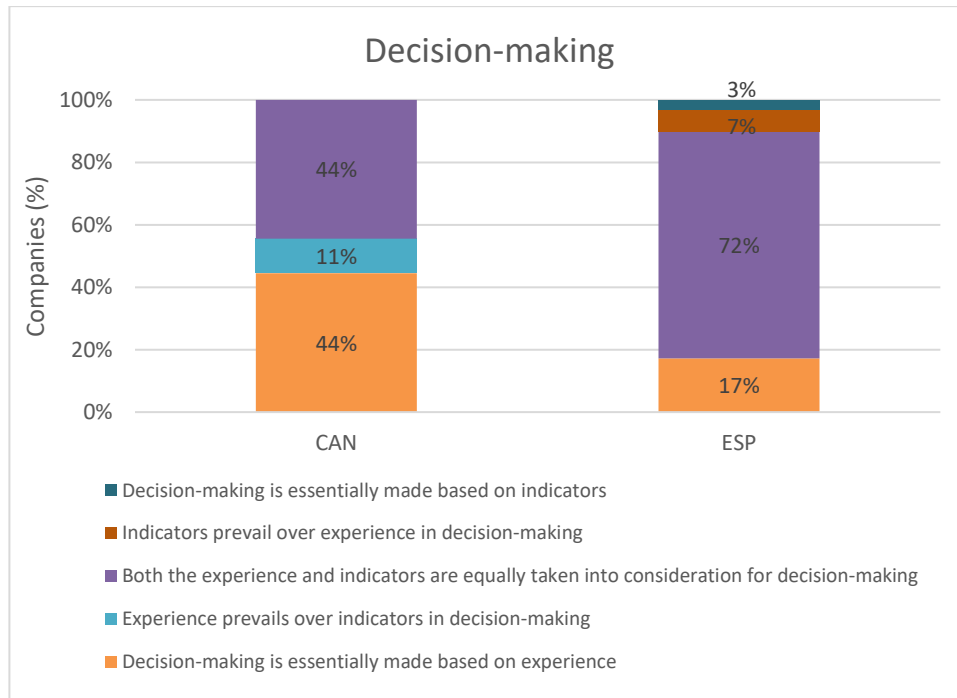


Figure 15

Regarding the last lever identified, the intellectual property, first it was checked whether the participating companies had introduced new products, processes or marketing strategies as a result of its innovative activity in the last 5 years (*Figure 16*) and next the average number of introductions by each participant that had confirmed any was calculated (*Table 3*). It can be seen that the companies of both countries show similar results, which means that more innovative activity is not perceived in one country than in the other.

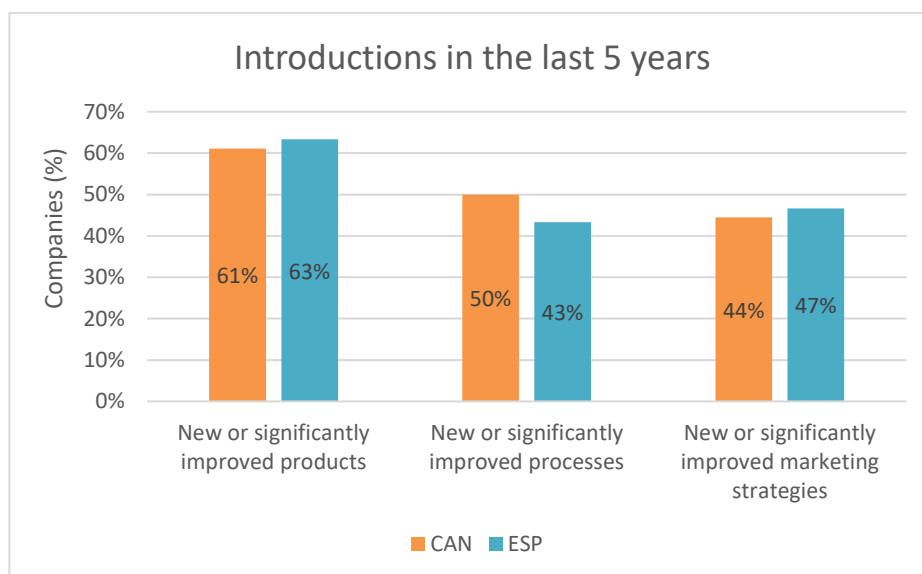


Figure 16

If so, how many?	Canada	Spain
New or significantly improved products	3.18	3.32
New or significantly improved processes	2.67	2.31
New or significantly improved marketing strategies	3.00	3.07

Table 3: Number of introductions by respondent that confirmed having done introductions in the recent years.

Afterwards, it was asked who was responsible of these introductions, and the companies of both countries agreed that it was mostly their own company or to a lesser extent in collaboration with other entities (*Figure 17*). The fact of not including third parties for the development of innovations implies a minor adoption of the open innovation in the Canadian companies. It was also concluded that the most used protection method were registered trademarks, especially in Spanish industry, followed by the appellation of origin and the secrecy (*Figure 18*). This result suggests a greater need for Spanish companies to protect their product and reputation.

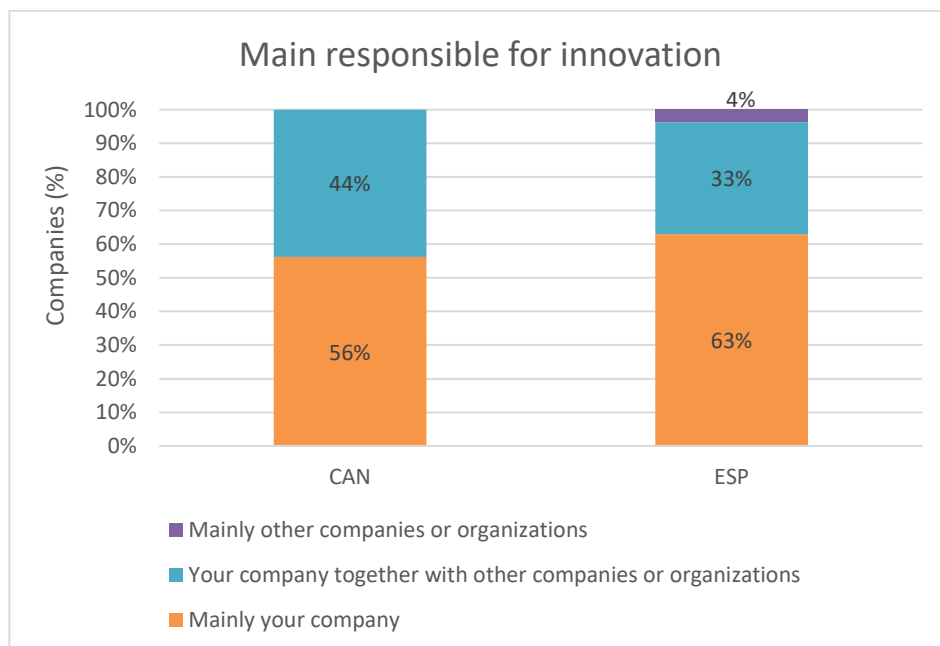


Figure 17

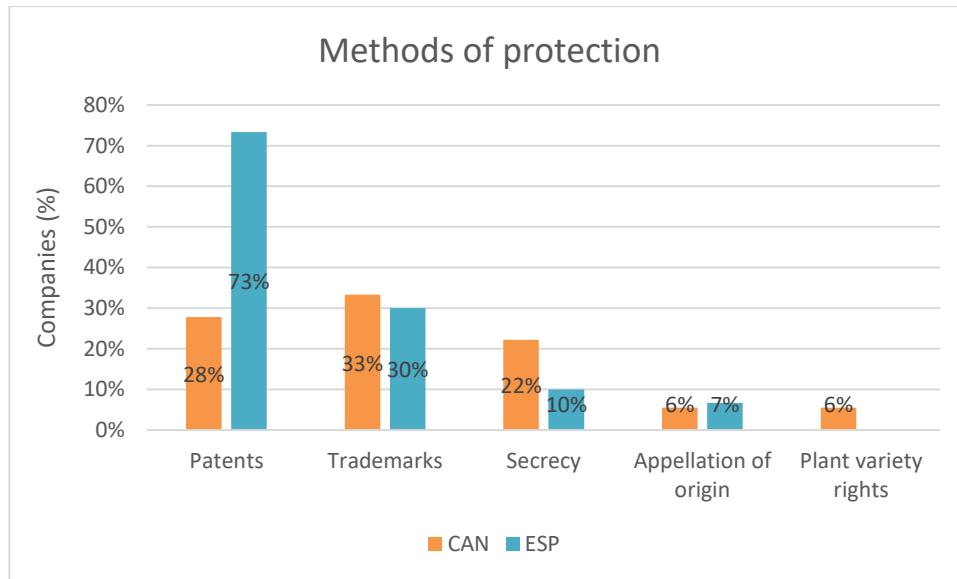


Figure 18

Lastly, with respect to the management and use of the enterprises' IP, the Spanish companies stated that either they have no issues to resolve related to their intellectual property or that if they do they prefer to solve them by means of a formal procedure. The Canadian companies, alternatively, tend to opt for resolutions through informal methods if a problem with their intellectual property arises (*Figure 19*). The most given purpose of the intellectual property protection is mainly to prevent competition from making profit of the companies' IP (*Figure 20*) with one of the following purposes: "Prevent competition from using its techniques/technologies", "Negotiate cross licenses with others in industry", "Attract investors" and "Profit from others using your company's IP". There is no perceived tendency of companies using its intellectual property to benefit from it in either country, implying that open innovation strategies may not be being applied in this regard.

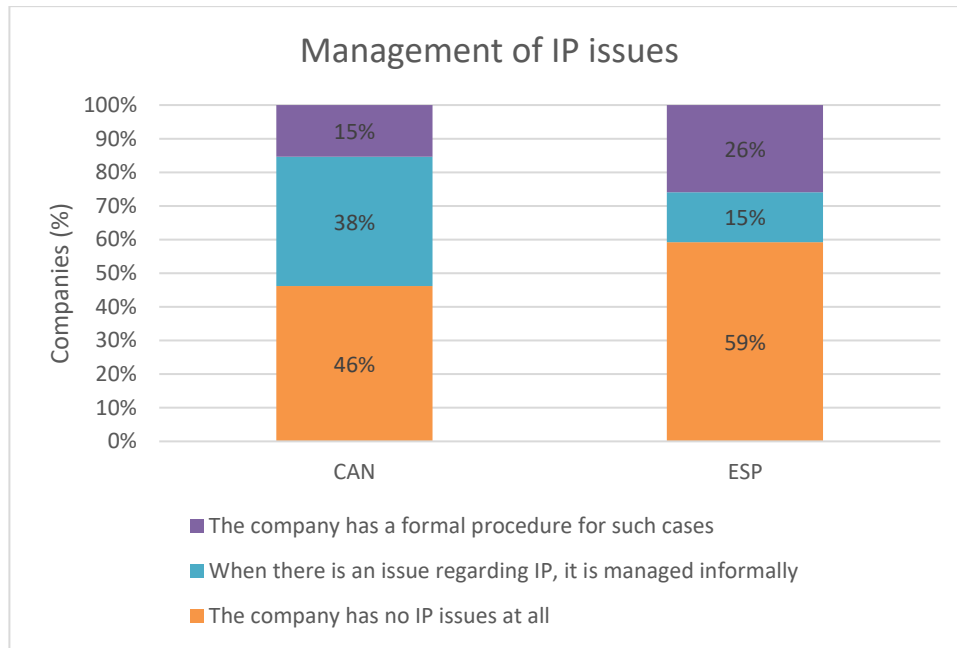


Figure 19

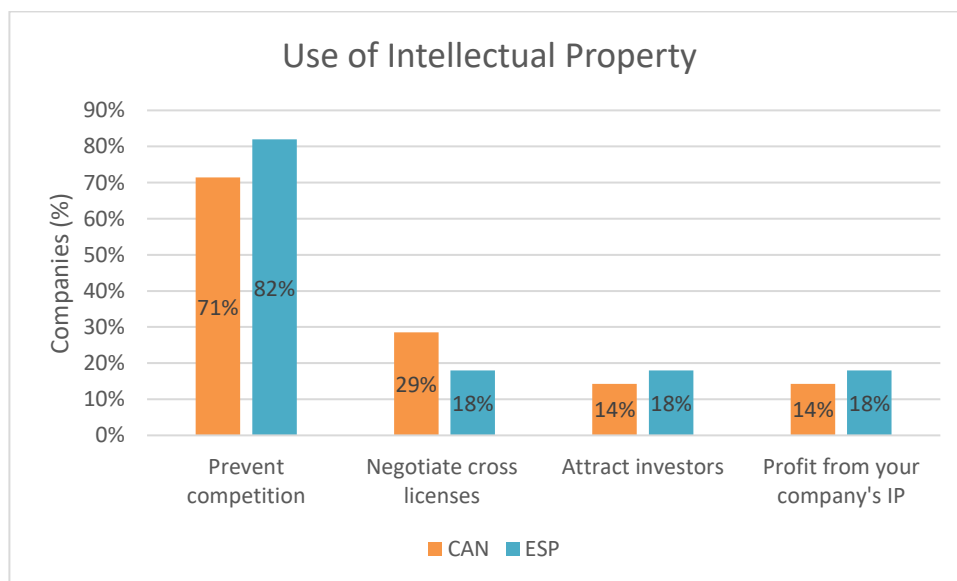


Figure 20

5.2 Inferential analysis

5.2.1 Open innovation level

After performing the descriptive analysis of the data collected by the survey, each participant is assigned a level of performance for each identified open innovation lever as described in section 2.1. with the aim of being able to evaluate and compare the level of implementation of the open innovation strategies in both countries. It is important to emphasize that the allocation of each company in a level for each lever of innovation, despite being performed following the same criteria as in the previous study [1], it is still achieved with a high level of subjectivity.

Once each company has been evaluated in each of the levers and has all the lever's levels assigned from 1 to 5, each participant will be assigned a general level of implementation of the open innovation equal to the sum of the numerical value of the level obtained in each of the levers. This global variable will receive the name of *General Open Innovation Level* and will be used from now on. This approach will allow to evaluate the global degree of implementation of the open innovation for each participant and therefore to be able to compare the general performance of the industry of both countries.

Figures 21-26 show the percentage of the respondents that achieved each level for the 6 levers identified. These graphs serve to assess which levers are most relevant to open innovation in each country. It is easily observable that Canadian companies are more focused on open innovation applied to its organizational structure and corporate culture, while Spanish companies are slightly more focused on surveillance and self-evaluation.

However, since it is not possible to perceive in these graphs for each lever a significant difference to determine which of the two countries has a general higher performance in each of them, the variable created as sum of the levels of all the levers to assess the overall achievement of open innovation of each company is used and plotted in *Figure 27*. Accordingly, based on this graph showing how Canadian companies have a higher percentage of levels 4 and 5 achieved, it suggests that Canadian wine producing companies currently have a higher level of application of open innovation than Spanish companies.

On the other hand, *Figure 28* shows the average level acquired in each of the identified levers of Canadian and Spanish companies. From this graph, it is perceived that the least developed levers are self-evaluation and intellectual property, and that Canadian companies obtain a higher average level in the most developed and implemented levers.

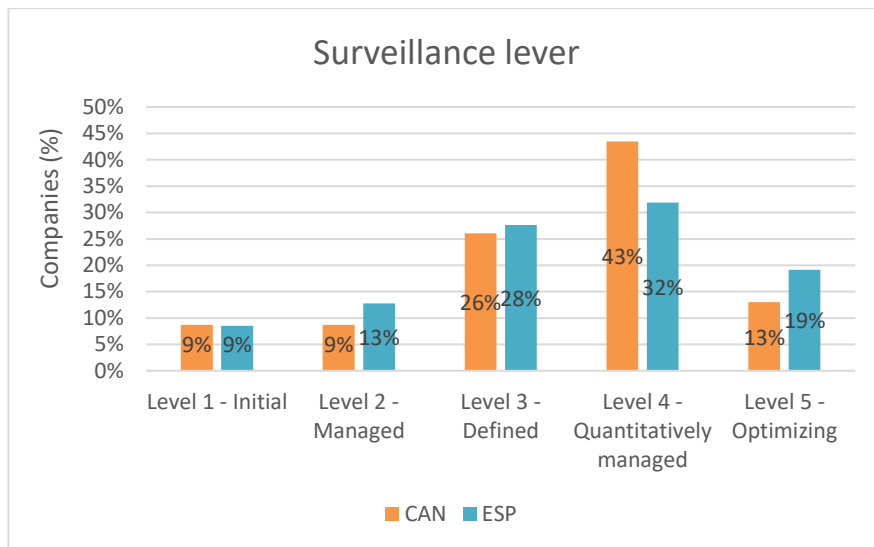


Figure 21

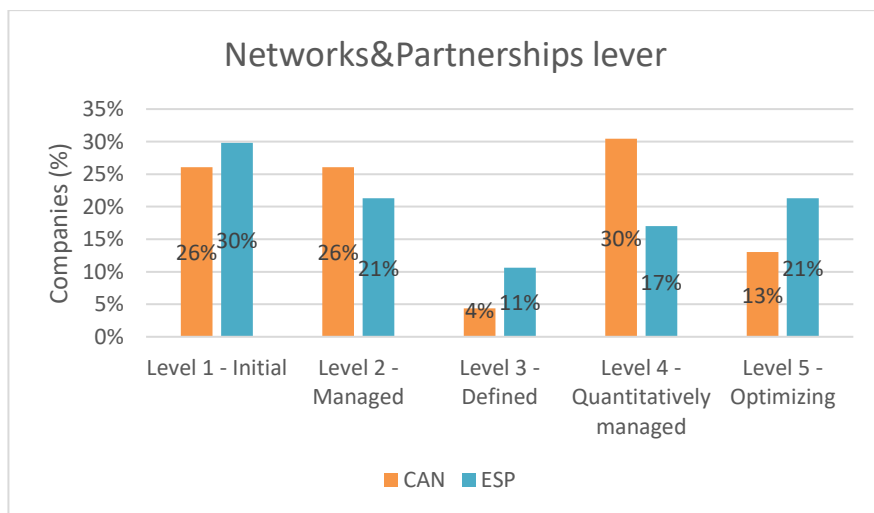


Figure 22

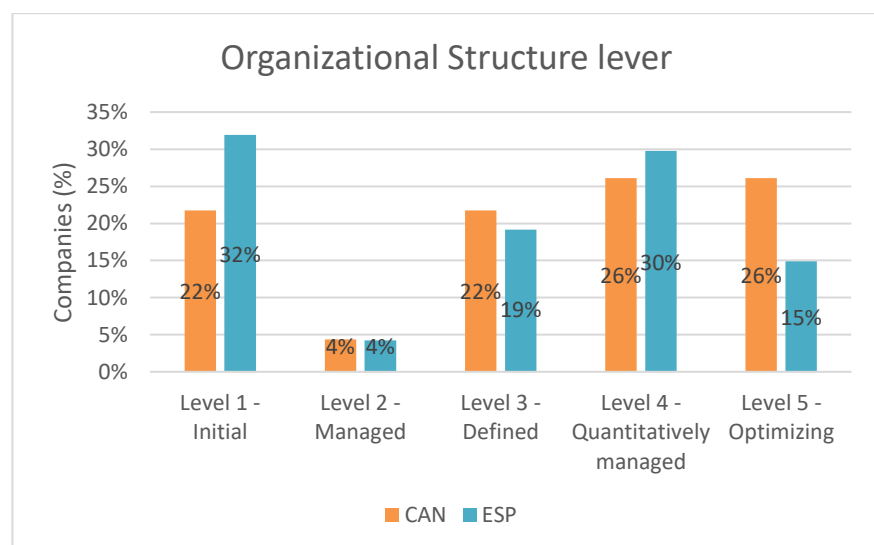


Figure 23

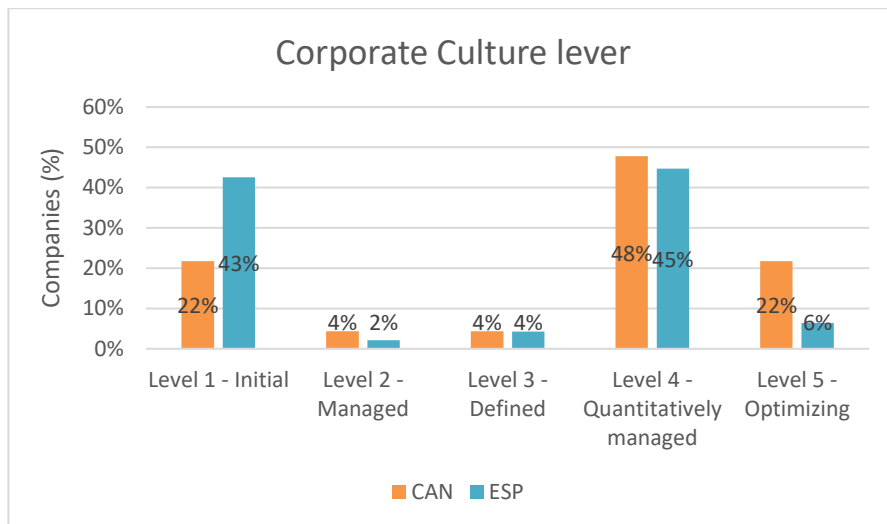


Figure 24

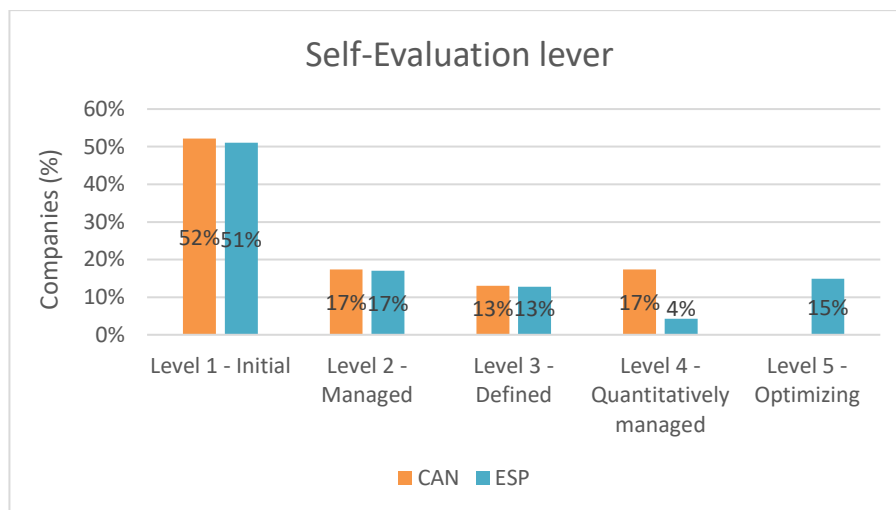


Figure 25

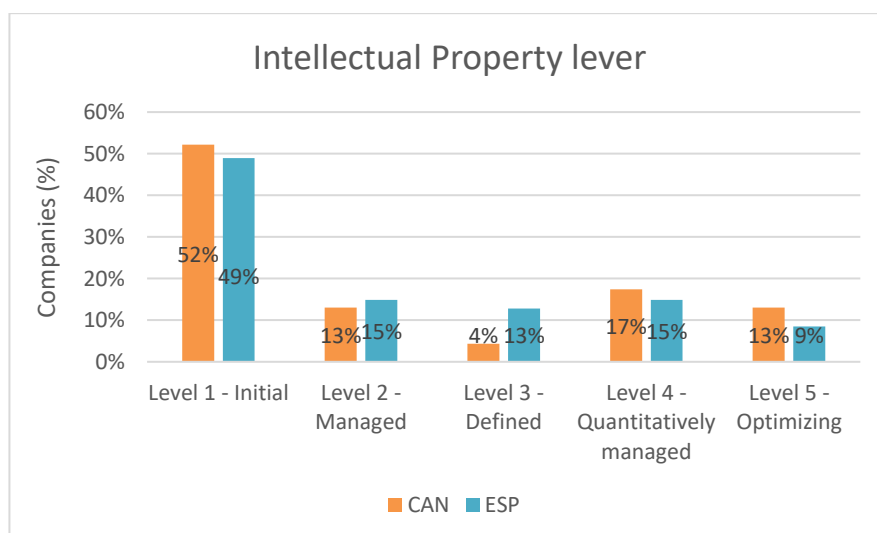


Figure 26

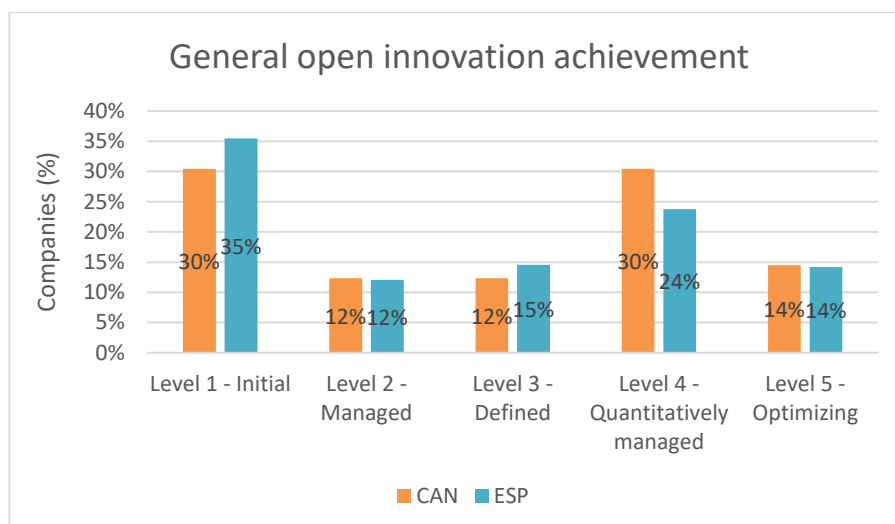


Figure 27

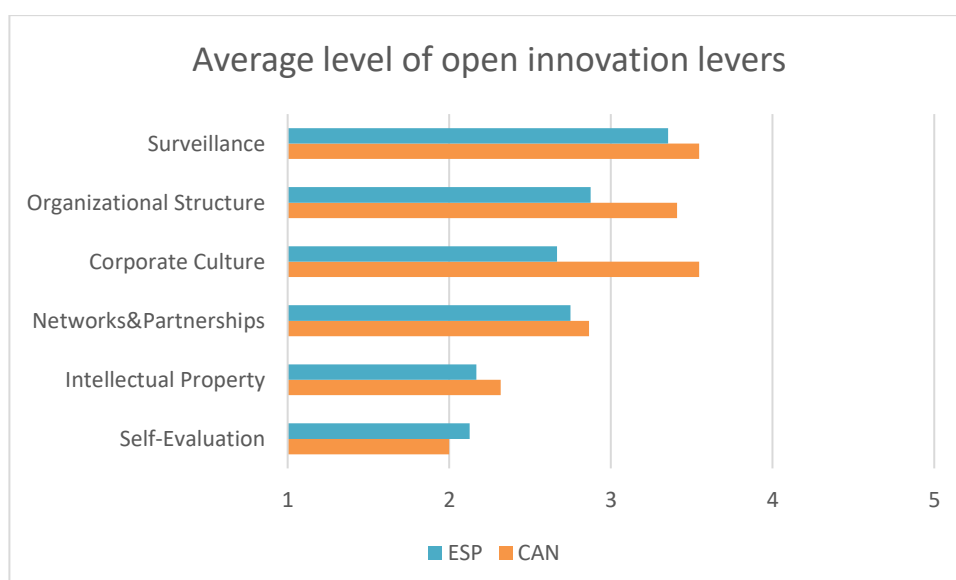


Figure 28

5.2.2 Hypotheses

To ensure that the conclusions made in the descriptive and by levels analysis are in agreement with the information provided by the data collected, a statistical analysis was performed using the *Minitab* software.

When checking whether the difference in the total degree of application of the open innovation strategies in both countries was significant, it was obtained the following results of the analysis of the variance known as ANOVA.

One-way ANOVA: General Open Innovation level versus Country

Source	DF	SS	MS	F	P
Country	1	16,2	16,2	0,38	0,542
Error	68	2937,3	43,2		
Total	69	2953,5			



S = 6,572 R-Sq = 0,55% R-Sq(adj) = 0,00%

				Individual 95% CIs For Mean Based on Pooled StDev
Level	N	Mean	StDev	
CAN	23	17,174	6,365	(-----*-----)
ESP	47	16,149	6,669	(-----*-----)
				-----+-----+-----+-----+-----
				15,0 16,5 18,0 19,5

Pooled StDev = 6,572

The ANOVA analysis compares the means and variances of the variable to be studied for each of the two possible values of the categorical variable and indicates if the hypothesis that both means are different in the two cases is fulfilled or not. Accordingly, the ANOVA analysis helps to detect whether the categorical variable has a significant influence on the variable to be studied. The p-value obtained greater than 0.05 percent indicates that there is a 95% probability that the difference between the two countries is not significant, and so, both countries show similar degrees of adoption of the open innovation.

The same analysis was then performed to determine the differences for each of the levers identified:

One-way ANOVA: Surveillance lever versus Country

Source	DF	SS	MS	F	P
Country	1	0,01	0,01	0,01	0,919
Error	68	92,97	1,37		
Total	69	92,99			

S = 1,169 R-Sq = 0,02% R-Sq(adj) = 0,00%

				Individual 95% CIs For Mean Based on Pooled StDev
Level	N	Mean	StDev	
CAN	23	3,435	1,121	(-----*-----)
ESP	47	3,404	1,192	(-----*-----)
				-----+-----+-----+-----+-----
				3,00 3,25 3,50 3,75

Pooled StDev = 1,169

One-way ANOVA: Networks&partnerships lever versus Country

Source	DF	SS	MS	F	P
Country	1	0,00	0,00	0,00	0,991
Error	68	159,79	2,35		
Total	69	159,79			

S = 1,533 R-Sq = 0,00% R-Sq(adj) = 0,00%

Individual 95% CIs For Mean Based on

Level	N	Mean	StDev	Pooled StDev
CAN	23	2,783	1,476	(-----+-----+-----+-----+)
ESP	47	2,787	1,559	(-----*-----)
				(-----*-----)
				(-----+-----+-----+-----+)
				2,45 2,80 3,15 3,50

Pooled StDev = 1,533

One-way ANOVA: Organization structure lever versus Country

Source	DF	SS	MS	F	P
Country	1	2,34	2,34	1,04	0,310
Error	68	152,53	2,24		
Total	69	154,87			

S = 1,498 R-Sq = 1,51% R-Sq(adj) = 0,06%

Level	N	Mean	StDev	Individual 95% CIs For Mean Based on Pooled StDev
CAN	23	3,304	1,490	(-----+-----+-----+-----+)
ESP	47	2,915	1,501	(-----*-----)
				(-----*-----)
				(-----+-----+-----+-----+)
				2,80 3,20 3,60 4,00

Pooled StDev = 1,498

One-way ANOVA: Corporate culture lever versus Country

Source	DF	SS	MS	F	P
Country	1	8,29	8,29	3,58	0,063
Error	68	157,48	2,32		
Total	69	165,77			

S = 1,522 R-Sq = 5,00% R-Sq(adj) = 3,60%

Level	N	Mean	StDev	Individual 95% CIs For Mean Based on Pooled StDev
CAN	23	3,435	1,472	(-----+-----+-----+-----+)
ESP	47	2,702	1,545	(-----*-----)
				(-----*-----)
				(-----+-----+-----+-----+)
				2,50 3,00 3,50 4,00

Pooled StDev = 1,522

One-way ANOVA: Self-evaluation lever versus Country

Source	DF	SS	MS	F	P
Country	1	0,57	0,57	0,30	0,588
Error	68	130,91	1,93		
Total	69	131,49			

S = 1,388 R-Sq = 0,43% R-Sq(adj) = 0,00%

Level	N	Mean	StDev	Individual 95% CIs For Mean Based on Pooled StDev
CAN	23	1,957	1,186	(-----+-----+-----+-----+)
ESP	47	2,149	1,474	(-----*-----)
				(-----*-----)
				(-----+-----+-----+-----+)
				1,50 1,80 2,10 2,40

Pooled StDev = 1,388

One-way ANOVA: IP lever versus Country

Source	DF	SS	MS	F	P
Country	1	0,07	0,07	0,03	0,853
Error	68	145,71	2,14		
Total	69	145,79			

S = 1,464 R-Sq = 0,05% R-Sq(adj) = 0,00%

				Individual 95% CIs For Mean Based on Pooled StDev			
Level	N	Mean	StDev	-----+-----+-----+-----+-----			
CAN	23	2,261	1,573	(-----*-----)			
ESP	47	2,191	1,409	(-----*-----)			
				-----+-----+-----+-----+-----			
				1,75	2,10	2,45	2,80

Pooled StDev = 1,464

Again, all the p-values are bigger than 0.05 and this fact indicates that there is not a significant difference in the performance of both countries for any lever, which is consistent with the previous conclusion.

After concluding that there is not a significant difference between the application of the open innovation in both countries, it was continued to discover if there was any factor or characteristic of the company that provoked or was related to a higher level of the General Open Innovation level variable. To achieve so, a regression analysis was performed with 31 possible predictive variables of categorical type (of value 1 if the characteristic is fulfilled and 0 otherwise) using the stepwise analysis method, which consists of making consecutive regressions until remaining with only the statistically significant variables which make the model as close as possible to the variable to be described. The results obtained were as follows:

Stepwise Regression:

Response is General Open Innovation level on 31 predictors, with N = 70

Step	7	8	9
Constant	17,67	17,80	18,24
DM_1	-7,61	-7,58	-7,72
T-Value	-7,59	-7,69	-7,84
P-Value	0,000	0,000	0,000
WineP	3,43	3,17	3,39
T-Value	3,50	3,26	3,51
P-Value	0,001	0,002	0,001
Logis	1,97	1,98	2,25
T-Value	2,06	2,10	2,43
P-Value	0,043	0,040	0,018
New_prod	2,88	3,04	3,09

T-Value	2,95	3,16	3,20
P-Value	0,004	0,002	0,002
Dessert wine	3,1	3,0	3,2
T-Value	2,74	2,69	2,92
P-Value	0,008	0,009	0,005
RegiSt	1,8	1,4	
T-Value	1,69	1,33	
P-Value	0,096	0,187	
White wine	-2,2	-2,4	-2,8
T-Value	-1,59	-1,78	-2,08
P-Value	0,118	0,080	0,042
third		3,0	3,5
T-Value		1,78	2,07
P-Value		0,081	0,043
S	3,55	3,49	3,51
R-Sq	73,56	74,86	74,13
R-Sq (adj)	70,57	71,56	71,21

These results indicate that the binary variables or factors, which if equal to 1 imply that their definition is true and false otherwise, that should be included in the regression model to predict the level of implementation of open innovation in a company are those with a p-value lower than 0.05:

- **DM_1** indicates if decision-making in a company is made based on experience only and accordingly without considering any information obtained by means of indicators.
- **WineP** indicates if the innovation practices related to the networks&partnerships lever are affecting the wine production area.
- **Logis** indicates if the innovation practices related to the networks&partnerships lever are affecting the logistics area.
- **New_prod** indicates if the company has introduced at least one new product in the last five years.
- **Dessert wine** indicates if the company produces dessert wine.
- **White wine** indicates if the company produces white wine.
- **Third** indicates if third parties are involved in the surveillance of the company.
- The regression equation obtained by these variables is the following:

$$\text{General Open Innovation level} = 18,2 + 3,48 \text{ Third} + 3,39 \text{ WineP} + 2,25 \text{ Logis} - 7,72 \text{ DM}_1 + 3,09 \text{ New_prod} - 2,77 \text{ White wine} + 3,22 \text{ Dessert wine}$$

Predictor	Coef	SE Coef	T	P
Constant	18,239	1,380	13,21	0,000
third	3,479	1,683	2,07	0,043

WineP	3,3888	0,9657	3,51	0,001
Logis	2,2486	0,9255	2,43	0,018
DM_1	-7,7215	0,9854	-7,84	0,000
New_prod	3,0923	0,9674	3,20	0,002
White whine	-2,765	1,332	-2,08	0,042
Dessert wine	3,221	1,104	2,92	0,005

S = 3,51068 R-Sq = 74,1% R-Sq(adj) = 71,2%

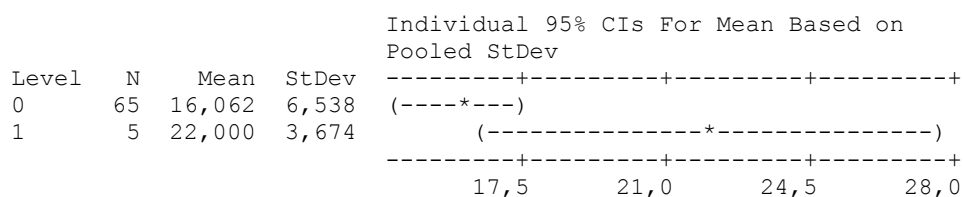
The fact that the p-values of all variables included in the regression are minor than 0.05 once more indicates that they all directly influence the general level of achievement of open innovation or that they are a direct result of the company's adoption of open innovation. Similarly, it should be noted that those variables with a positive coefficient affect positively the level of open innovation achieved, i.e., if these variables are met (so that the characteristic that they define is true), a higher level of adoption of open innovation is expected. Contrariwise, those variables with a negative coefficient reduce the achieved level of open innovation if present.

However, it is important to bear in mind that the calculation of the regression model is a first step to discard those variables that may not directly interfere with the level of open innovation of a company. It should not be forgotten that it is possible that the model obtained will include some variables that do not really influence the variable to be described. In addition, if several predictive variables are related and influence each other, the model will only contemplate some of them, although all of them directly infer the variable to be described. Accordingly, to verify that the variables found with the regression model are actually directly related to the level of open innovation of a company, an ANOVA analysis was performed for each variable. The results were the following:

One-way ANOVA: third

Source	DF	SS	MS	F	P
third	1	163,7	163,7	3,99	0,050
Error	68	2789,8	41,0		
Total	69	2953,5			

S = 6,405 R-Sq = 5,54% R-Sq(adj) = 4,15%



Pooled StDev = 6,405

One-way ANOVA: WineP

Source	DF	SS	MS	F	P
WineP	1	861,0	861,0	27,98	0,000
Error	68	2092,5	30,8		
Total	69	2953,5			

S = 5,547 R-Sq = 29,15% R-Sq(adj) = 28,11%

Level	N	Mean	StDev	Individual 95% CIs For Mean Based on Pooled StDev
0	39	13,359	5,788	-----+-----+-----+-----+----- (-----*-----)
1	31	20,419	5,227	(-----*-----) -----+-----+-----+-----+----- 12,0 15,0 18,0 21,0

Pooled StDev = 5,547

One-way ANOVA: Logis

Source	DF	SS	MS	F	P
Logis	1	304,9	304,9	7,83	0,007
Error	68	2648,6	39,0		
Total	69	2953,5			

S = 6,241 R-Sq = 10,32% R-Sq(adj) = 9,00%

Level	N	Mean	StDev	Individual 95% CIs For Mean Based on Pooled StDev
0	46	14,978	6,695	-----+-----+-----+-----+----- (-----*-----)
1	24	19,375	5,240	(-----*-----) -----+-----+-----+-----+----- 15,0 17,5 20,0 22,5

Pooled StDev = 6,241

One-way ANOVA: New_prod

Source	DF	SS	MS	F	P
New_prod	1	660,7	660,7	19,60	0,000
Error	68	2292,7	33,7		
Total	69	2953,5			

S = 5,807 R-Sq = 22,37% R-Sq(adj) = 21,23%

Level	N	Mean	StDev	Individual 95% CIs For Mean Based on Pooled StDev
0	40	13,825	6,168	-----+-----+-----+-----+----- (-----*-----)
1	30	20,033	5,282	(-----*-----) -----+-----+-----+-----+----- 12,0 15,0 18,0 21,0

Pooled StDev = 5,807

One-way ANOVA: Dessert wine

Source	DF	SS	MS	F	P
Dessert wine	1	20,5	20,5	0,48	0,493
Error	68	2933,0	43,1		
Total	69	2953,5			

S = 6,567 R-Sq = 0,70% R-Sq(adj) = 0,00%

				Individual 95% CIs For Mean Based on Pooled StDev			
Level	N	Mean	StDev	-----+-----+-----+-----+-----			
0	53	16,792	6,663	(-----*-----)			
1	17	15,529	6,246	(------*-----)			
				-----+-----+-----+-----+-----			
				12,8 14,4 16,0 17,6			

Pooled StDev = 6,567

One-way ANOVA: DM_1

Source	DF	SS	MS	F	P
DM_1	1	1528,5	1528,5	72,94	0,000
Error	68	1424,9	21,0		
Total	69	2953,5			

S = 4,578 R-Sq = 51,75% R-Sq(adj) = 51,04%

				Individual 95% CIs For Mean Based on Pooled StDev			
Level	N	Mean	StDev	+-----+-----+-----+-----+-----			
0	34	21,294	4,079	(----*----)			
1	36	11,944	5,003	(----*---)			
				+-----+-----+-----+-----+-----			
				10,5 14,0 17,5 21,0			

Pooled StDev = 4,578

One-way ANOVA: White wine

Source	DF	SS	MS	F	P
White wine	1	3,7	3,7	0,08	0,772
Error	68	2949,8	43,4		
Total	69	2953,5			

S = 6,586 R-Sq = 0,12% R-Sq(adj) = 0,00%

				Individual 95% CIs For Mean Based on Pooled StDev			
Level	N	Mean	StDev	-----+-----+-----+-----+-----			
0	9	15,889	6,660	(------*-----)			
1	61	16,574	6,576	(-----*-----)			
				-----+-----+-----+-----+-----			
				12,5 15,0 17,5 20,0			

Pooled StDev = 6,586

After this verification, it is demonstrated that the hypothesis that states that the companies whose surveillance of the environment is carried out by third parties are more innovative is not completely veridical, since it is the limit to be considered a significant relation.

Moreover, it is also proved that neither the production of dessert wine nor the production of white wine really affect the open innovation level of adoption in a company, and therefore these two hypotheses can be dismissed. Likewise, it was checked by means

of the ANOVA analysis if the rest of the variables related to the production of some specific product significantly affected the variable General Open Innovation level. As all the categorical variables of products obtained a p-value greater than 0.05, it can be ensured that none of them influences the variable.

For this same reason, to detect if the variable General Open Innovation level is influenced not only by the production areas of wine production and logistics but by all the areas, another ANOVA analysis was performed for each of the categorical variables of area. In this manner, it was confirmed that all of them significantly affect the global innovation variable. The reason why the rest of the area variables did not appear as noteworthy in the previous regression model is that these area variables are correlated with each other, that is, the fact that the open innovation is applied in an area is directly related to it being applied also in other areas. An additional ANOVA analysis among the area variables confirmed that these variables related to the area in which the open innovation is applied affect each other so that they all influence the variable General Open Innovation level. Accordingly, it is concluded that companies that have identified a particular area in which they have applied open innovation strategies have a higher level of implementation of open innovation. Likewise, the more the areas where open innovation has been applied, the higher the level of implementation of open innovation the company will obtain, due to the relationship between the area variables previously verified. Exactly the same thing happens with the variables that indicate if the company has introduced a new product, process or marketing strategy in the last 5 years, which also are interrelated and significantly affect the level of open innovation of a company.

Finally, a similar analysis was performed for all the possible options of decision-making of the company (based on whether the company relies heavily on the experience or on the use of indicators). In this way, it is possible to determine if only DM_1 affects the variable General Open Innovation level or if, on the contrary, all variables related to decision-making affect the variable as well but do not appear in the regression model because they are related to each other. After the ANOVA analysis, the variables DM_1 and DM_3, corresponding to the levels 1 and 3 of decision-making, are those that significantly affect the response. The other levels may not appear to be important because there are very few companies that have selected them and therefore there is not enough data to determine whether they are actually relevant or not. It has been proved that the variables DM_1 and DM_3 are interrelated, which is the reason why only the first one appeared in the regression model. For this reason, it is concluded that companies with a decision-making based solely on experience (corresponding to

variable DM_1) have a lower degree of adaptation of open innovation than those based on indicators (which Corresponds to the variable DM_3). This results reinforce the idea that in order to adopt open innovation more advanced managerial skills are required.

To summarise, this analysis has led to the following findings:

- The companies that have started to adopt the open innovation often have third parties to monitor their environment and have the areas in which they have applied the networking practices of open innovation identified. This in turn results in high values in the general level of open innovation achieved by these companies.
- Companies that have introduced at least one new product, process or marketing strategy in the last five years, i.e., companies that have innovated recently are evidently more likely to reach higher levels of open innovation.
- Conversely, those companies that perform decision-making based on experience, which in turn implies a lower management maturity, are less probable to reach higher levels of open innovation.

These findings lead to the following conclusions:

- A requirement for companies to practice open innovation is to innovate and to be mature in management.
- The features of open innovation that are more relevant in our sample are the identification of those parts of the business in which the strategies of open innovation are directly applied by the companies themselves and the use of third parties to monitor the companies' environment.

It should be added that all the remaining available variables that could affect the overall level of open innovation of an enterprise have been checked one by one with the ANOVA method and none of them has been proved significant, which is consistent with the results of the regression performed at the beginning of the analysis. This includes the binary variables related to the company's size, of which unexpectedly none has been proved to be correlated with a higher level of adoption of open innovation.

6. Conclusions

After analysing the results, it is verified that the Canadian wine industry has a similar degree of implementation of the open innovation strategies than their Spanish counterparts. However, it should be noted that due to the limited number of complete responses available and the fact that there was a different number of responses from

each country (23 from Canada and 47 from Spain) this conclusion may not be fully fit the perceived reality. It is also possible that this conclusion is not completely true because of the limited data available which causes the variance to be very high. A high variance provokes lower levels of security in the statements that can be made from the data.

As could be appreciated in the analysis by levels, Canadian companies may be perceived to be more dedicated to open innovation than the Spanish industry because the latter is essentially focused on surpassing the numerous existing competition, as could be deducted from its high levels achieved for the surveillance and self-evaluation levers. In addition, the greater levels attained in the levers of organizational structure and corporate culture of the Canadian companies and the fact that they appear to be more prone to team up with other organizations of the sector supports this assumption. Conversely, the Spanish wine producing companies are more reticent to share their knowledge and consequently cannot follow the open innovation strategies as easily, even though some of them are inclined to innovate as a method to improve their products and processes and to stand out from the competition. Furthermore, due to the need to overcome the existing vast competition, the Spanish companies may use indicators related to innovation to improve its performance and ensure good results, and the information provided by these indicators may be subsequently used in decision-making and to improve their processes, which is consistent with the high levels accomplished by Spanish companies on the self-evaluation lever. Finally, the great importance given by Spanish wineries to its product protection may be due to the need to avoid others from imitating its product or making profit of its renown, which is less likely to occur within the Canadian industry. This prevents the Spanish companies from using their intellectual property for purposes other than to avoid being imitated and lowers its level on the intellectual property lever.

Subsequently, the statistical analysis of the information obtained with the survey has allowed validating a series of hypotheses about which factors are correlated or propitiate that a company is more innovative. It has been verified that those companies that have third parties supervising the environment for them, those that have identified the areas in which they apply the practices of open innovation, those that have introduced a new product, process or strategy of marketing in the last 5 years and those that base their decision making based on indicators are more innovative than those that do not.

It should be added that the analysis of the level of innovation open at the regional level of companies in both countries has not been performed due to the limited number of responses from some regions.

It is also worth mentioning the difficulties encountered in the data collection phase, since the conclusions drawn from them may be useful for future studies that need to acquire information in similar ways. The low response rate was the main problem to come across, and therefore attempts were made to overcome this obstacle by approaching the potential participants in different manners. However, none of these methods was especially effective, although the one that was most helpful in getting answers was the weekly email reminder. Nevertheless, since the third reminder the wineries started replying asking not to be contacted again, which is understandable. These companies were appropriately answered and it was avoided to contact them anymore. Surprisingly, the methods that were supposed to be most effective, calling the wineries and sending personalized emails, failed to significantly increase the number of responses. In the first case, when calling the wineries these mostly responded that they were busy and provided an email from an employee who could complete the survey later. In almost all cases, that person never answered the survey. Another usual answer when calling the companies was that they did not answer any type of survey. Of all the calls that were made only 2 persons agreed to answer the survey on the phone, and one of the calls almost had to end before finishing because a customer appeared and the person responding had to serve him. For this reason, the use of the phone call as an alternative mode for responding may be only convenient as a final effort to get more participants and it should be focused on obtaining the response of participants of special interest, as was concluded in [5]. The companies contacted through personal emails did not seem to have answered more than those who received the generic email. The conclusion drawn from this is that if a company is not interested in responding to the survey, it will not do so, regardless of how many times it is asked or contacted. Therefore, it is not worthwhile to make extra efforts to get a particular response of a company in case it does not respond to the generic email.

Another curious fact of the data collection phase was that several enterprises entered the survey, read it and did not answer it, and there is proof of it because in the results of the survey these responses are recorded as empty. This may have happened because the person who entered the questionnaire did not want to answer any of the questions or because he did not know the answers. This last supposition was verified by contacting a couple of companies that had only answered the first question that asks for their email, as by having their email they could be reached asking why they had not answered the survey.

Taking into account these difficulties, this work yields a series of recommendations when collecting information based on online surveys:

- Expect really low response rates. Accordingly, create a database large enough so that if only a 5% of the contacted participants answer the survey the minimum number of complete answers required for the study is obtained. The fastest and easiest way to contact a large number of participants at once is with generic emails, so combined with an extensive contact database this is the most effective way to ensure that a higher number of companies complete the survey, which was also concluded in [5]. In case there are not so many potential participants, it is advisable to try to contact them prior to sending the survey in an individual and personalized way by email or phone to increase the chances of them actually answering the survey.
- If the contact information of the owner or any other executive is obtained, it is interesting to address them personally as they are more likely to answer the survey. This is due to the fact that these people usually do know the answers and also do not have to ask permission from their superiors to share company information.
- It is essential to pay full attention to those potential participants who show interest in the study. This involves writing to each participant in his language of preference, replying as soon as possible any questions or suggestions they make and contacting all those who open the survey but do not complete it to ask why they did not and encourage them to complete it.
- If some trait is shared with some of the participants, make proof of it. For example, if in a region an own language is spoken, try to contact the companies from that region in that language slightly increases the probability of response, as the participants are more motivated to help someone similar to them.
- Design the survey to so that it is easy to answer. That implies few questions per page and clear and concise statements and an intuitive interface. Avoid repetitive questions and those that may make the participant feel uncomfortable to answer (a clear example of this is the question about the company's last revenue, which in the present study has had a lower response rate than the rest of the survey questions). Also, include small definitions of those terms that may not be familiar to respondents.
- Mark all contacts who are known to have answered the survey so that they are not reminded again and to send them back the results of the report at the end of

the study. Similarly, mark all those contacts who have refused to answer the survey or who have asked not to be contacted again.

- Out of all the online survey tools that were tried for this study (*SurveyMonkey*, *LimeSurveys* and *KwikSurveys*) the last one was chosen because it is the only one that in its free version allows unlimited responses and to download both the total and individual responses in pdf or excel format, which is of great help to analyse the data and achieve results. For this reason, since all platforms are practically the same in form and ease of use, it is recommended to use *Kwiksurveys* to develop an online survey.

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9. Annex

9.1 English survey

Report request

Create your own
FREE ONLINE SURVEY

-
- 1 If you would like to receive a report with the final results of the survey, please fill in your email adress.

Open Innovation assessment Survey

The following survey is intended to estimate to what extent are the open innovation strategies being applied in your company. Please answer the following questions so that we can classify your company for research purposes.

2 How many people are employed at your company?

- ☐ 10 or less
- ☐ Between 11 and 99
- ☐ Between 100 and 499
- ☐ 500 or more

3 What was the annual revenue of your company last year?

- ☐ Less than 1 million cad
- ☐ Between 1 and 3 million cad
- ☐ Between 3 and 10 million cad
- ☐ More than 10 million cad

4 How many bottles of wine on average does your company produce in a year?

5 What of the following products does your company produce?

- ☐ Red wine
- ☐ Rosé wine
- ☐ White wine
- ☐ Fortified wine
- ☐ Dessert wine
- ☐ Sparkling wine
- ☐ Cider
- ☐ Vinegar
- ☐ Liquor

Other (Please Specify)

6 What % of your company's revenue comes from wine production?

7 Where is your company located?

- ☐ Quebec
- ☐ Ontario
- ☐ Atlantic provinces
- ☐ Central Canada

Surveillance

8 How often does your company use the following external surveillance tools?

	Never	Rarely	Sometimes	Often	All the time
Customer feedback	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Early involvement of supplier	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Competitive monitoring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
New technology monitoring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patent monitoring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9 Who is responsible for performing the external surveillance mentioned in the previous question?

- ☐ The owner
- ☐ Employees
- ☐ Third parties

Networks and partnerships

10 How much importance does your company give to the following practices?

	None	Little	Some	High	Extremely high
Networks or partnerships with other companies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Configuration of a contact network	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Joint-ventures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participation in clusters and industry associations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spin-offs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outsourcing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Licensing agreements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11 Which of the following areas are affected by the practices mentioned in the previous question?

- ☐ Cultivation
- ☐ Harvesting
- ☐ Wine production
- ☐ Wine storage
- ☐ Bottling/Labeling
- ☐ Marketing
- ☐ Logistics
- ☐ Regional standards

12 Is your company the one to establish conditions and set the limits in its partnerships and collaborations?

- ☐ Yes
- ☐ No

13 What is the approximate size of your company's current partnership network?

- ☐ From 1 to 10 contacts
- ☐ From 11 to 50 contacts
- ☐ More than 50 contacts

Organizational structure

14 Select your degree of agreement with the following statements regarding your company

	Totally disagree	Partially disagree		Neutral	Agree	Strongly agree
"My company is aware of the importance to adapt itself towards open innovation"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"The interactions of my company within the supply chain are informal"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"Structures to support the innovation process are in place of being implemented"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"The structures mentioned in the previous item also include the interaction with the external environment"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"Top management supports and incentives open innovation"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"There is a close interaction among all the departments of my company"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"There is a group of people within my company responsible for managing and evaluating new ideas."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"Financial resources are dedicated to new product development"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Corporate culture

15 Select your degree of agreement with the following statements regarding your company

	Totally disagree	Partially disagree		Neutral	Agree	Strongly Agree
"Open innovation is an important component of my company's culture"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"New ideas are usually embraced"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"My company is aware of the importance of innovating"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"My company is prone to risk-taking"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"The top management spends time and efforts to foster a climate towards innovation"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"Employees at all levels are encouraged to proactively contribute to innovations"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"All areas and parties of the company are aligned to work jointly towards open innovation"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"My company is prone to work with clients and suppliers to improve products and processes"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"My company is prone to work with universities and government players for innovation purposes"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"My company is attentive to the voice of the customer"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Self-Evaluation

16 Does your company measure the investment in R&D and innovation?

☐ Yes

☐ No

17 If so, what is this indicator/metric used for?

☐ Strategic decision-making

☐ Continuous improvement of internal processes

18 Does your company measure the number of Patents and other IP assets?

☐ Yes

☐ No

19 If so, what is this indicator/metric used for?

☐ Strategic decision-making

☐ Continuous improvement of internal processes

20 Does your company measure the innovation lead time?

☐ Yes

☐ No

21 If so, what is this indicator/metric used for?

☐ Strategic decision-making

☐ Continuous improvement of internal processes

22 Does your company measure or analyze the impact of innovations?

☐ Yes

☐ No

23 If so, what is this indicator/metric used for?

☐ Strategic decision-making

☐ Continuous improvement of internal processes

24 Regarding the balance between the use of indicators and the informal judgment based on personal experience, how are decisions in general taken in your company?

- ☐ Decision-making is essentially made based on experience
- ☐ Experience prevails over indicators in decision-making
- ☐ Both the experience and indicators are equally taken into consideration for decision-making
- ☐ Indicators prevail over experience in decision-making
- ☐ Decision-making is essentially made based on indicators

Intellectual Property

25 Has your company introduced any of the following in the last five years (2011-2016)?

- ☐ New or significantly improved products
 - ☐ New or significantly improved processes
 - ☐ New or significantly improved marketing strategies
-

26 If so, how many?

New or significantly improved products

New or significantly improved processes

New or significantly improved marketing strategies

27 Who developed these product / process / marketing innovations?

- ☐ Mainly your company
 - ☐ Your company together with other companies or organizations
 - ☐ Mainly other companies or organizations
-

28 Has your company introduced any of the following formal methods of protection in the last five years (2011-2016)?

Secrecy: to keep the formula, invention or know-how confidential.

Appellation of origin: promote and protect names of quality agricultural products.

Plant variety rights: rights granted to the breeder of a new variety of plant that gives the breeder exclusive control over the propagating material (including seed, cuttings, divisions, tissue culture) and harvested material (cut flowers, fruit, foliage) of a new variety for a number of years.

- ☐ Patents
- ☐ Trademarks
- ☐ Secrecy
- ☐ Appellation of origin
- ☐ Plant variety rights

29 If so, how many?

Patents

Trademarks

Plant variety rights

30 How are Intellectual Property (IP) issues managed?

- ☐ The company has no IP issues at all
- ☐ When there is an issue regarding IP, it is managed informally
- ☐ The company has a formal procedure for such cases

31 Does your company use its Intellectual Property (IP) to...

- ☐ Negotiate cross licenses with others in industry
- ☐ Attract investors
- ☐ Profit from others using your company's IP
- ☐ Prevent competition from using its techniques/technologies

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Demande de rapport

- 1 Pour recevoir le rapport avec les résultats finaux de cette enquête, s'il vous plaît indiquer votre adresse email.

Enquête sur l'innovation ouverte

Cette enquête vise à estimer dans quelle mesure les stratégies d'innovation ouverte sont appliquées dans votre entreprise. S'il vous plaît répondez aux questions suivantes afin que nous puissions classer votre entreprise pour l'étude.

2 Combien d'employés a votre entreprise?

- ☐ Moins de 10
- ☐ Entre 10 et 49
- ☐ Entre 50 et 249
- ☐ 250 ou plus

3 Quelle était la dernière chiffre d'affaires de votre entreprise?

- ☐ Moins de 1 million de cad
- ☐ Entre 1 et 3 million de cad
- ☐ Entre 3 et 10 million de cad
- ☐ Plus de 10 million de cad

4 Combien de bouteilles de vin produit chaque année votre entreprise?

5 Lesquels de ces produits suivants votre entreprise produit-elle?

- ☐ Vin rouge
- ☐ Vin rosé
- ☐ Vin blanche
- ☐ Vin fortifié
- ☐ Vin de dessert
- ☐ Vin éillant
- ☐ Cidre
- ☐ Vinaigre
- ☐ Liqueurs

Autres (s'il vous plaît préciser)

6 Quel % du chiffre d'affaires de votre entreprise provient de la production de vin?

7 Où se trouve votre entreprise?

- ☐ Quebec
- ☐ Ontario
- ☐ Provinces de l'Atlantique
- ☐ Canada Central

Surveillance

8 À quelle fréquence votre société utilise les outils de surveillance externes suivants?

	Jamais	Rarement	Parfois	Souvent	Constamment
Commentaires des clients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Implication des fournisseurs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Surveillance de la concurrence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Surveillance des nouvelles technologies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Surveillance des brevets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9 Qui est responsable de faire cette surveillance externe dans la question précédente?

- ☐ Le propriétaire
- ☐ Les employés
- ☐ Tierces parties

Réseaux et partenariats

10 Quelle est l'importance de les pratiques suivantes pour votre entreprise?

Spin-off: Société commerciale née d'une scission d'une société plus grande.

	Aucune	Faible	Certaine	Beaucoup	Grande
Collaborations ou des partenariats avec d'autres entreprises	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Configuration d'un réseau de contacts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coentreprises ou des alliances stratégiques (joint-ventures)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participation à des clusters et des associations industrielles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spin-offs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Externalisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contrats de licence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11 Lesquels des domaines d'activité suivants sont affectés par les pratiques mentionnées dans la question précédente?

- ☐ Cultivation
- ☐ Récolte
- ☐ Production de vin
- ☐ Élevage du vin
- ☐ Embouteillage / Étiquetage
- ☐ Commercialisation
- ☐ Logistique
- ☐ Normes régionales

12 Votre entreprise fixe les conditions et les limites de leurs partenariats et collaborations?

- ☐ Oui
- ☐ Non

13 Quelle est la taille approximative du réseau de contacts de votre entreprise actuellement?

- ☐ 1 à 10 contacts
- ☐ 11 à 50 contacts
- ☐ Plus de 50 contacts

Structure organisationnelle

14 Sélectionnez votre niveau d'accord avec les affirmations suivantes concernant votre entreprise

	Entièrement en désaccord	Assez en désaccord		Neutre	D'accord	Totalement d'accord
"Mon entreprise est consciente de l'importance de s'adapter à l'innovation ouverte"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"Les interactions de mon entreprise dans la chaîne d'approvisionnement sont informelles"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"Les structures pour soutenir le processus d'innovation sont mises en œuvre"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"Les structures mentionnées précédemment comprennent également des interactions avec l'environnement externe"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"La direction appuie et encourage la l'innovation ouverte"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"Il existe une interaction étroite entre tous les départements"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"Il y a un groupe de personnes dans mon entreprise responsable de la gestion et l'évaluation de nouvelles idées présentées"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"Des ressources financières sont consacrées au développement de nouveaux produits"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

15 Sélectionnez votre niveau d'accord avec les affirmations suivantes concernant votre entreprise

	Entièrement en désaccord	Assez en désaccord		Neutre	D'accord	Totalement d'accord
"L'innovation ouverte constitue un élément important de la culture de l'entreprise"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"La création de nouvelles idées est encouragée"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"Mon entreprise est consciente de l'importance d'innover"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"Mon entreprise a tendance à la prise de risques"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"La direction utilise du temps et des efforts pour favoriser un climat favorable à l'innovation"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"Les employés à tous les niveaux sont encouragés à contribuer activement aux innovations"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"Tous les domaines et les parties de mon entreprise sont alignées à travailler ensemble vers l'innovation ouverte"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"Mon entreprise est encline à travailler avec ses clients et fournisseurs afin d'améliorer ses produits et processus"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"Mon entreprise est encline à travailler avec les universités et les membres du gouvernement à des fins liées à l'innovation"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"Mon entreprise est attentive à la voix du client"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Auto-évaluation

16 Votre entreprise mesure l'investissement réalisé dans la R&D et l'innovation?

- ☐ Oui
☐ Non
-

17 Dans le cas affirmatif, pourquoi cette mesure / indicateur est utilisée?

- ☐ La prise de décisions stratégique
☐ L'amélioration continue des processus internes
-

18 Votre entreprise compte le nombre de brevets qu'elle possède et le reste de sa propriété intellectuelle?

- ☐ Oui
☐ Non
-

19 Dans le cas affirmatif, pourquoi cette mesure / indicateur est utilisée?

- ☐ La prise de décisions stratégique
☐ L'amélioration continue des processus internes
-

20 Votre entreprise compte le temps d'attente entre le moment où l'innovation est définie et quand elle se produit?

- ☐ Oui
☐ Non
-

21 Dans le cas affirmatif, pourquoi cette mesure / indicateur est utilisée?

- ☐ La prise de décisions stratégique
☐ L'amélioration continue des processus internes
-

22 Votre entreprise mesure et analyse l'impact qui génèrent des innovations?

- ☐ Oui
☐ Non
-

23 Dans le cas affirmatif, pourquoi cette mesure / indicateur est utilisée?

- ☐ La prise de décisions stratégique
☐ L'amélioration continue des processus internes

25 Considérant l'équilibre entre l'utilisation d'indicateurs et le jugement formel basée sur la propre expérience, comment les décisions sont habituellement prises dans votre entreprise?

- ☐ La prise de décisions est essentiellement basée sur l'expérience
- ☐ L'expérience prévaut sur les indicateurs dans la prise de décisions
- ☐ L'expérience et les indicateurs sont considérés conjointement dans la prise de décisions
- ☐ Les indicateurs prévalent sur l'expérience dans la prise de décisions
- ☐ La prise de décisions est essentiellement basée sur les indicateurs

Propriété intellectuelle

25 Votre entreprise a développé un les éléments suivants dans les cinq dernières années (2011-2016)?

- ☐ Nouveaux produits ou produits existants améliorés considérablement
 - ☐ Nouveaux processus ou processus existants améliorés considérablement
 - ☐ Nouveaux stratégies de marketing ou stratégies de marketing existants améliorés considérablement
-

26 Dans le cas affirmatif, combien?

Nouveaux produits ou produits existants améliorés considérablement

Nouveaux processus ou processus existants améliorés considérablement

Nouveaux stratégies de marketing ou stratégies de marketing existants améliorés considérablement

27 Qui a développé ces innovations de produits / processus / marketing?

- ☐ Principalement mon entreprise
 - ☐ Mon entreprise en collaboration avec d'autres entreprises et organisations
 - ☐ Principalement d'autres entreprises et organisations
-

28 Votre entreprise a développé les méthodes formelles de protection de la propriété intellectuelle suivantes dans les cinq dernières années (2011-2016)?

- ☐ Brevets
- ☐ Marques enregistrées
- ☐ Confidentialité
- ☐ Appellation d'origine protégée
- ☐ Droits d'obteneur des variétés végétales

29 Dans le cas affirmatif, combien?

Brevets

Marques enregistrées

Droits d'obteneur des variétés végétales

30 Comment sont traités les problèmes de propriété intellectuelle dans votre entreprise?

- ☐ L'entreprise n'a pas de problèmes liés à la propriété intellectuelle
- ☐ Quand un problème lié à la propriété intellectuelle apparaît, il est géré de manière informelle L'entreprise dispose d'une procédure formelle pour
- ☐ tels cas

31 Votre entreprise utilise sa propriété intellectuelle avec l'un des buts suivantes?

- ☐ Négocier le transfert des licences avec d'autres dans l'industrie
- ☐ Attirer les investisseurs
- ☐ En bénéficier d'autres institutions en utilisant leur propriété intellectuelle
- ☐ Empêcher les concurrents d'utiliser sa technique / technologie

Petición de informe

24 Si desea recibir un informe con los resultados finales de esta encuesta, por favor indique su dirección de correo electrónico completa.

Encuesta sobre Innovación Abierta

Esta encuesta tiene por objetivo estimar en qué medida están siendo aplicadas las estrategias de innovación abierta en su empresa. Por favor, conteste a las siguientes preguntas para que podamos clasificar su compañía para el estudio.

2 ¿Cuántos empleados tiene su empresa?

- ☐ Menos de 10
- ☐ Entre 10 y 49
- ☐ Entre 50 y 249
- ☐ 250 o más

3 ¿Cuál fue la última cifra de negocios de su empresa?

- ☐ Menos de 2 millones de euros
- ☐ Entre 2 y 10 millones de euros
- ☐ Entre 10 y 50 millones de euros
- ☐ Más de 50 millones de euros

4 ¿Cuántas botellas de vino produce anualmente?

5 ¿Cuáles de los siguientes productos produce su empresa?

- ☐ Vino tinto
- ☐ Vino rosado
- ☐ Vino blanco
- ☐ Vino generoso
- ☐ Vino de postre
- ☐ Vino espumoso
- ☐ Sidra
- ☐ Vinagre
- ☐ Licores

Otro (por favor especifique)

6 ¿Qué % de los ingresos de su empresa proviene de la producción de vino?

7 ¿Dónde está situada su empresa?

- ☐ Andalucía
- ☐ Aragón
- ☐ Asturias
- ☐ Baleares
- ☐ Cantabria
- ☐ Castilla-La Mancha
- ☐ Castilla y León
- ☐ Cataluña
- ☐ Extremadura
- ☐ Galicia
- ☐ La Rioja
- ☐ Comunidad de Madrid Murcia
- ☐ Navarra
- ☐ País Vasco
- ☐ Comunidad Valenciana

Vigilancia

8 ¿Con qué frecuencia su empresa utiliza las siguientes herramientas de vigilancia externa?

	Nunca	Raramente	A veces	A menudo	Constantemente
Comentarios / Opiniones de los clientes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Implicación de los proveedores	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seguimiento / Control de la competencia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seguimiento de las nuevas tecnologías	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seguimiento de patentes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9 ¿Quién se encarga de realizar la vigilancia externa mencionada en la pregunta anterior?

- ☐ El propietario
- ☐ Los empleados
- ☐ Terceros

Redes de contactos y asociaciones

10 ¿Cuánta importancia le da su empresa a las siguientes prácticas?

Spin-off: proyecto nacido como extensión de otro anterior, o también una empresa nacida a partir de otra mediante la separación de una división subsidiaria o departamento de la empresa para convertirse en una empresa por sí misma.

	Ninguna	Poca	Alguna	Mucha	Muchísima
Colaboraciones o asociaciones con otras empresas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Configuración de una red de contactos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Empresas conjuntas o alianzas estratégicas (joint-ventures)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participación en clústers y asociaciones de industrias	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spin-offs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subcontrataciones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Acuerdos de licencia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11 ¿Cuáles de las siguientes áreas de negocio son afectadas por las prácticas mencionadas en la pregunta anterior?

- ☐ Cultivo
- ☐ Cosecha
- ☐ Producción de vino
- ☐ Crianza del vino
- ☐ Embotellado / Etiquetado
- ☐ Marketing
- ☐ Logística
- ☐ Estándares regionales

12 ¿Es su compañía la que establece las condiciones y los límites en sus asociaciones y colaboraciones?

- ☐ Sí
- ☐ No

13 ¿Cuál es el tamaño aproximado de la red de contactos de su empresa actualmente?

- ☐ De 1 a 10 contactos
- ☐ De 11 a 50 contactos
- ☐ Más de 50 contactos

Estructura organizativa

14 Seleccione su nivel de acuerdo con las siguientes afirmaciones respecto a su empresa

	Totalmente en desacuerdo	Parcialmente en desacuerdo	Neutral	De acuerdo	Totalmente de acuerdo
"Mi empresa es consciente de la importancia de adaptarse hacia la innovación abierta"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Las interacciones de mi empresa en de la cadena de aprovisionamiento son informales"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Las estructuras para soportar el proceso de innovación están siendo implementadas"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Las estructuras mencionadas previamente incluyen también la interacción con el entorno externo"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"La dirección apoya e incentiva la innovación abierta"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Hay una interacción estrecha entre todos los departamentos"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Hay un grupo de personas en mi empresa responsable de gestionar y evaluar las nuevas ideas que se presentan"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Se dedican recursos financieros a desarrollar nuevos productos"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15 Seleccione su nivel de acuerdo con las siguientes afirmaciones respecto a su empresa

	Totalmente en desacuerdo	Parcialmente en desacuerdo	Neutral	De acuerdo	Totalmente de acuerdo
"La innovación abierta es un componente importante de la cultura de la empresa"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Se incentiva la creación de nuevas ideas"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Mi compañía es consciente de la importancia de innovar"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Mi empresa es propensa a la toma de riesgos"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"La dirección emplea tiempo y esfuerzo en fomentar un clima adecuado para la innovación"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Empleados de todos los niveles son alentados a contribuir de manera proactiva a las innovaciones"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Todas al áreas y partes de mi empresa están alineadas para trabajar conjuntamente hacia la innovación abierta"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Mi empresa es propensa a trabajar con clientes y proveedores para mejorar sus productos y procesos"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Mi empresa es propensa a trabajar con universidades y miembros del gobierno con propósitos relacionados con la innovación"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Mi compañía está atenta a la voz del cliente"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Auto evaluación

16 ¿Su empresa mide la inversión que realiza en I+D e innovación?

- ☐ Si
☐ No
-

17 En caso afirmativo, ¿para qué se utiliza esa medida / indicador?

- ☐ Toma de decisiones estratégica
☐ Mejora continua de procesos internos
-

18 ¿Su empresa cuenta el número de patentes que posee y el resto de su propiedad intelectual?

- ☐ Si
☐ No
-

19 En caso afirmativo, ¿para qué se utiliza esa medida / indicador?

- ☐ Toma de decisiones estratégica
☐ Mejora continua de procesos internos
-

20 ¿Su empresa cuenta el tiempo de espera entre que se idea y se produce la innovación?

- ☐ Si
☐ No
-

21 En caso afirmativo, ¿para qué se utiliza esa medida / indicador?

- ☐ Toma de decisiones estratégica
☐ Mejora continua de procesos internos
-

22 ¿Su empresa mide o analiza el impacto que generan las innovaciones?

- ☐ Si
☐ No
-

23 En caso afirmativo, ¿para qué se utiliza esa medida / indicador?

- ☐ Toma de decisiones estratégica
☐ Mejora continua de procesos internos

29 Considerando el equilibrio entre el uso de indicadores y el juicio formal basado en la propia experiencia, ¿cómo se toman generalmente las decisiones en su compañía?

- ☐ La toma de decisiones está basada esencialmente en la experiencia
- ☐ La experiencia prevalece sobre los indicadores en la toma de decisiones
- ☐ Tanto la experiencia como los indicadores son considerados por igual en la toma de decisiones
- ☐ Los indicadores prevalecen sobre la experiencia en la toma de decisiones
- ☐ La toma de decisiones está basada esencialmente en los indicadores

Propiedad intelectual

25 ¿Ha introducido su empresa alguno de los siguientes en los últimos cinco años (2011-2016)?

- ☐ Productos nuevos o mejorados significativamente
 - ☐ Procesos nuevos o mejorados significativamente
 - ☐ Estrategias de marketing nuevas o mejoradas significativamente
-

26 En caso afirmativo, ¿cuántos?

Productos nuevos o mejorados significativamente

Procesos nuevos o mejorados significativamente

Estrategias de marketing nuevas o mejoradas significativamente

27 ¿Quién desarrolló estas innovaciones de producto / proceso / marketing?

- ☐ Principalmente mi empresa
 - ☐ Mi empresa de forma conjunta con otras compañías u organizaciones
 - ☐ Principalmente otras compañías u organizaciones
-

28 ¿Ha introducido su empresa alguno de los siguientes métodos formales de protección de la propiedad intelectual en los últimos cinco años (2011-2016)?

- ☐ Patentes
- ☐ Marcas registradas
- ☐ Confidencialidad
- ☐ Denominación de origen protegido
- ☐ Derechos de obtentor de variedades vegetales

29 En caso afirmativo, ¿cuántos?

Patentes

Marcas registradas

Derechos de obtentor de variedades vegetales

30 ¿Cómo son gestionados los problemas de propiedad intelectual en su empresa?

- ☐ La compañía no tiene ningún problema relacionado con la propiedad intelectual
- ☐ Cuando surge un problema relacionado con la propiedad intelectual, se gestiona de manera informal La compañía dispone de un procedimiento formal a
- ☐ seguir para tales casos

31 ¿Utiliza su empresa su propiedad intelectual con alguno de los siguientes fines?

- ☐ Negociar la cesión de licencias con otros en la industria
- ☐ Atraer inversores
- ☐ Sacar provecho de los que utilicen su propiedad intelectual
- ☐ Evitar que la competencia utilice sus técnicas / tecnología