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Investigating the competitive intelligence practices of Peruvian fresh grapes exporters

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ABSTRACT This paper reports an empirical study of Peruvian fresh grapes exporters with the aim of delineating the behavioral and operational typology of their competitive intelligence practices. Cluster analysis was used as an exploratory tool to determine the correlation, if any, between the size of the company, grapes exports share of total exports, the percentage of the Red Globe variety in total grapes exports and the size of the grape farm with the typology and the average price received at export between August 2016 and July 2017. The behavioral and operational typology of competitive intelligence practices model, developed by Wright *et al,* (2012), was used. The findings reveal that exporters have a positive behavior towards competitive intelligence practices, but cannot make good use of them due to a lack of knowledge, and deficiencies in organization and in technological and IT systems support. As 37 companies participated in this experiment, this study could be extended to all non-traditional Peruvian agricultural exports. It has been possible to identify areas where changes are needed to enable these exporters to perform at a higher level of competence. In addition, it appeared that a slightly higher level of attitude and IT systems support pays off as medium-sized companies achieved a higher price per ton compared to big companies. This study is the first to present a typology of competitive intelligence practices in Peru and is one of the very first to study competitive intelligence in this country and agriculture.

KEYWORDS Behavior, competitive intelligence, grapes exporters, Peru, typology

1. INTRODUCTION

As companies face fiercer competition and a more uncertain environments, competitive intelligence (CI) is gaining ground (Blenkhorn and Fleisher 2005; Bisson and Yasar Diner, 2017). The Global Intelligence Alliance (GIA), using data from surveys done on the same sample in 2009 then in 2011, reported that the percentage of companies integrating CI functions increased from 63% to 76% in this period (GIA, 2011) and that decision making was 15% more efficient in companies that utilize CI functions (GIA, 2013).

CI originated from military intelligence and dates back to Sun Tzu and is thereby an art in addition to being a science (Prescott, 1999). Its systematic use in the commercial and business world is fairly recent and many academics have studied their country's CI practices (Calof *et al.,* 2015). Soilen (2013) reviewed fifty-one articles written by eighty-three authors, mostly from the United States, Canada and the United Kingdom, published in the *Journal of*

Competitive Intelligence and Management (JCIM) between 2004 and 2008. He found that the main topics of research were the development of CI in general or in specific countries, followed by studies defining CI and studying its growth in time, and finally, business intelligence and its applications.

Little research has been conducted on the application of CI in developing countries (Ifan *et al.*, 2004; Zhan and Chen, 2009; Wright *et al.*, 2013; Du Toit, 2013; Du Toit and Sewdass, 2014; Rodriguez Salvador and Salinas Casanova, 2012; Rodrigues and Thome e Castro, 2017) with only a few isolated efforts focusing on the Spanish speaking communities of South America (Aguirre, 2015; Guarrochena and Paul, 2013; Salazar *et al.,* 2014; Villaroelg *et al.,*2015).

Thus, this study explores for the first time the CI practices of export companies in the fresh grape sector in Peru. Hence, it could inspire Peruvian companies and promote more studies of CI in South America. In addition, very few studies about CI in agriculture have been undertaken (Bisson 2014). The purpose of this study is to create a typology of Peruvian fresh grapes exporters' CI practices and to investigate the relationship between the size of the company, the share of grapes exports in total exports, the percentage of the Red Globe variety in total grapes exports and the size of the farm with their CI practice levels and the average price received at export.

The remainder of the paper is organized as follows: we first provide a brief comparison of the conception of competitive intelligence in English and Spanish literature, then we deal with CI in Peru followed by the importance of fresh grapes in Peruvian exports. The methodology used in this research is described and the results are then presented and discussed. Finally, we conclude with an examination of the implications and limitations of this research and suggest further research that may be undertaken.

2. THEORETICAL BACKGROUND

2.1 The competitive intelligence conception in English and Spanish literatures

In the English literature, there is no universal definition of CI accepted by all (Du Toit, 2015; Wright et al., 2009). Haddadi et al. (2010) emphasize that the lack of an accepted definition renders this field unstable. CI was developed in the early 1980s (Presscot, 1999) in the US, focusing originally on competitors under the influence of Porter (1980) and was then broadened to include all actors in the market. Although it is commonly accepted that CI makes use of information from outside the organization (and is thereby based on monitoring or scanning the organization's environment), some authors (e.g. Wright, 2011) consider that CI should also encompass internal information to fulfil the needs of decision makers.

Calof et al. (2015) categorize the definitions by those who focus on the objectives of CI, i.e. to enlighten decision makers and those who explain it by how CI is performed thereby centered on the intelligence cycle. This cycle has four steps (Kahaner, 1997): i) planning and direction; ii) collection; iii) analysis; and iv) dissemination. Thus, after defining the key intelligence topics, information is gathered, analyzed and the results are disseminated to people who triggered the cycle. Pellissier and Nenzhelele (2013) studied 50 CI definitions and determined that 38 referred to CI as a process and 4 as a product. In terms of its objectives, CI has been defined by Du Toit (2013, 30) as "… a strategic tool to facilitate the identification of potential opportunities and threats". In the same vein, Presscott and Miller (2001) define it as any actionable intelligence that could provide a competitive edge. As a process, Kahaner (1998, p.16) states that "Competitive intelligence is a systematic program for gathering and analyzing information about your competitors' activities and general business trends to further your own company's goals". Likewise, Fleisher (2004, 56) defines it as a "… systematic process by which organizations ethically gather and analyze actionable information about competitors and the competitive environment and, ideally, apply it to their decision-making and planning processes to improve their performance". In contrast, Rouach and Santi (2001, p.553) suggest it is a creative process, or "the art of collecting, processing and storing information to be made available to people at all levels of the firm to help shape its future and protect it against current competitive threats: it should be legal and respect codes of ethics; it involves a transfer of knowledge from the environment to the organization within established rules".

Soilen (2016) argue that definitions of CI and marketing intelligence are quite similar and overlapping, addressing the same phenomenon, but studied by different academic

disciplines. Du Toit (2015), based on 338 published peer-reviewed articles from 1994 to 2014 in the ABI/Inform database, found that the most popular term used in the literature is CI, followed by business intelligence and marketing intelligence.

Compared to the English literature, the main difference in the Spanish literature is that competitive intelligence is linked to the term 'technological watch' in accordance with the norm UNE 166006:2011 (the Spanish Association for Standardization and Certification [Aenor 2018]) and has risen in the Spanish speaking community independently to the English speaking CI and marketing intelligence academic communities. For instance, Professor Escorsa has written numerous articles in Spanish about technological watch while dealing with CI (see, for example, Escorsa and Maspons, 2001). In a similar vein Rodriguez Salvador and Slinas Casanova (2012) suggest that the ultimate objective of CI is to support innovation.

2.2   Competitive Intelligence in Peru

In Peru, based on the largest number of publications found by the search engine of the Peruvian repository for theses and academic papers, the most common terms associated with CI are business intelligence followed by marketing intelligence (Concytec, 2018). From the total of 375 titles that appear in a search carried out on March 27th 2018, all were monographs or news items and there were only nine peer-reviewed articles, from which only two are related to the research topic. These two articles are a study that covers ten in-depth interviews about factors needed to promote foresight and competitive intelligence in 2040 (Inche Mitma et al., 2016) and a survey of 28 Peruvian exporters and importers about implementations of market intelligence programs in their companies (Tang Tong, 2015).

The lack of peer-reviewed articles about intelligence processes or programs to scan the environment in order to be more competitive in Peru reflects the poor efforts to promote CI as well as the lack of human resources needed to develop CI as stated in the report by the National Council of Science, Technology and Technological Innovation (Concytec, 2017): i) there are only two Public Institutes of Research which have technology transfer units and that perform activities of technological surveillance; one of these is the Peruvian Technological Institute of Production (ITP). ITP has been recognized as the first organization in Latin America to obtain a certification for technological watch and CI according to the Norm UNE 166006:2011 (Aenor, 2018); ii) only two companies are offering this service of technological surveillance in the domestic market; iii) there are very limited educational offerings at universities and institutes. Recently, Concytec launched a five year-program (2017-2021) to promote capabilities in technological watch and CI as a means to achieve higher innovation, following the successful experiences observed in Argentina and Colombia. Indeed, these two countries have set up technological observatories, providing access to scientific, technological and competitive knowledge that can be adopted nationally (Concytec, 2017).

Some efforts to help exporters have been made through the Peruvian Export and Tourism Promotion Agency (Promperu), providing research studies of main export markets, which were developed by the market intelligence unit and are available on their web site (Promperu, 2018). However, there are no reports monitoring the main markets.

2.3   The importance of fresh grapes in Peruvian exports

Since the beginning of the 21st century, Peru has emerged as one of the fastest-growing and most stable economies in Latin America, with an average annual growth rate of 5.1% between 2007 and 2016 (the Central Reserve Bank of Peru [BCRP], 2018; World Bank Group, 2017). Non-traditional agricultural exports, with fresh grapes making up the largest share, have shown an impressive compound annual growth rate (CAGR) of 13.4% in the same period, accounting for 13% of total exports in 2016 (the National Superintendence of Customs and Tax Administration [Sunat], 2017).

The Peruvian fresh grapes exports sector has been developing since the end of the 1990s and has grown at double digit rates driven by private investments and modern technologies, and the sector is vertically integrated and created with the sole purpose of serving the exports market (Meade et al., 2010; World Bank Group, 2017). As a result, Peru is the world's fifth largest exporter of fresh grapes, accounting for 6.3% of worldwide grape exports in 2016 (International Trade Center [ITC], 2017).

The Ministry of Agriculture and Irrigation of Peru (Minagri, 2017) estimated that the total production was 689,800 metric tons (MT) in

2016. This number has more than doubled since 2010, as a consequence of a wider growing area. The last census in 2012 estimated there to be about 43,800 hectares dedicated to grapes, covering both wine production and fresh grapes for consumption (the National Institute of Statistics and Information [INEI], 2013). This figure is likely to have also increased and it is estimated that there are 30,000 hectares in Peru dedicated to fresh grapes, where the Red Globe variety is the most common with 80% of the total production (Fernandez-Stark et al., 2016).

The increase in growing areas is mainly due to the perfect match between the Peruvian production months and the months of lower production in the northern hemisphere. Almost half of the production is exported during the higher production season i.e. from August to April, when the export price is on average three times higher compared to the local price (BCRP, 2018; Minagri, 2017; Sunat, 2018).

As more companies got involved in exporting grapes due to higher prices, Peruvian exports grew rapidly with a CAGR of 24.2% between 2010 and 2016, impacting the world supply and leading to lower prices in recent years (ITC, 2010-2017).

3. METHODOLOGY

3.1 Sample and procedure

For the purposes of this study the model developed by Wright et al. (2012) is used, a behavioral and operational typology of CI practice applied to SMEs and construed as being robust (Ross et al., 2012; Gaspareniene et al., 2013; Smith, 2012; Bisson, 2013; Toker et al., 2016). This model was itself adapted from the study of Wright et al. (2002) of CI active firms in the UK which addressed four strands: attitude, gathering, use and location. This model has inspired further work and replication studies carried out by Adidam et al. (2009), April and Bessa (2006), Bouthillier and

Jin (2005), Dishman and Calof (2008), Liu and Wang (2008), Oerlemans et al. (2005), Priporas et al. (2005), Rodrigues and Thome e Castro (2017) and Wright et al. (2009). Wright et al. (2012) added two new strands: technological support ("as degree of investment made to assist with gathering competitive information") and IT support ("as the type of systems used to manage the flow of competitive information"). In this way each strand is related to specific questions that later can be translated into a typology verdict for each exporter.

A questionnaire using both closed and open questions was used to gather the data set. Self-declared position statements were also included in the questionnaire to either confirm or contradict answers given within each section. The latter served as a clarification mechanism to identify any contradiction in a typology verdict.

The questionnaire was available on-line in Spanish and a secured link was created for each exporter. The target group was the Peruvian grape exporters that had exported grapes according to the harmonized tariff code 08.06.10.00.00 in 2016 available in Sunat (2017). Peruvian customs provided a list of exporters that was then cleaned for the purposes of this research. The eligible sample comprised 80 export companies.

All companies were contacted by telephone and/or reached by e-mail to be invited to take part in this study between October 2017 and March 2018. A total of 37 questionnaires were completed. The sample used in this research represents more than 60% of the total exporters (detailed in Table 1). The unit price achieved by the companies of the sample was higher than the average for all companies. Companies were classified as being a big, medium, small or micro company using as a reference the European Union definition of an SME in terms of turnover and employee numbers (EU Commission, 2003).

Table 1

Characteristics of the sample

UNIVERSE season 2016/17						SAMPLE season 2016/17					
Size	No. of Companies		Total exports$		Exports $/MT	Size	No. of Companies		Total exports$		Exports $/MT
Big	14	8%	280,716,249	40%	2,267	Big	8	22%	187,290,212	44%	2,336
Medium	26	15%	191,600,688	28%	2,404	Medium	15	41%	167,838,700	39%	2,518
Small	51	30%	175,494,106	25%	2,080	Small	10	27%	60,790,851	14%	2,309
Micro	81	47%	46,430,922	7%	1,922	Micro	4	11%	9,639,173	2%	1,988
TOTAL	172	100%	694,241,965	100%	2,225	TOTAL	37	100%	425,558,936	100%	2,391

- The season starts in August and finishes in July the following year.

More than half of the interviewees were top management, holding positions of CEO or Chairman of the Board, one fourth were management positions reporting to the CEO, and the remaining respondents were those reporting to first line management.

Most companies stated that they exported more than 75% of their sales and 32 out of 37 companies were vertically integrated throughout the main steps of cultivation, harvesting, processing and export. Five of the companies did not cultivate grapes but acted as processors and exporters on behalf of other producers.

The size of the farm was asked to those involved in cultivation and most companies stated they had more than 100 hectares for grapes cultivation. According to the last farm structure survey carried out in the European Union in 2013, the largest agricultural holding size was found to be more than 100 hectares and these made up 2.7% of 12 million farms accounting for over 30% of standard output across the EU (European Commission, 2013). Similarly, in the latest Peruvian Agriculture Census carried out in 2012, the largest farms were also found to be larger than 100 hectares and they were estimated to be 0.9% of 2.2 million farms (INEI, 2013).

3.2   Analytical approach

The same set of descriptors utilized by Wright et al. (2012) was used (see Appendix 1), and the findings from this study were applied to this behavioral and operational typology of CI to reach verdicts regarding levels of gathering, attitude, use, location, IT systems and technology support. Furthermore, cluster analysis was used as an exploratory tool (Kaufman and Rousseeuw, 2005) to investigate whether there was any correlation between the size of the company, grapes exports share of total exports, the percentage of the Red Globe variety in total grapes exports and the size of the grape farm with the typology and the average price received at export between August 2016 and July 2017.

4.   RESULTS AND DISCUSSION

4.1   Gathering

This section asked about the type of information they collected, the sources they used, how much competitive information they obtained from their own employees, how they prepared their employees to address competitors, what type of financial return they expected from their CI effort and how much financial support was provided for CI activities.

With regards to the type of information they collected, 284 responses were recorded, with customers, competitors, products in their market, suppliers and scientific articles and publications taking the top five places, closely followed by job market, laws, economy, politics and taxation policies. The items that were revealed as being of less interest were ISO standards, patents, industrial processes, social and finance. Interestingly, only one respondent included weather information, which is of utmost importance in agriculture, another respondent included certification requirements, which are compulsory for this kind of business due to food safety and traceability issues, and another respondent included yields in other countries, and phytosanitary barriers among non-tariff as well as tariff trade barriers.

The most popular source of information was stated to be trade fairs followed by industry experts and industry magazines. This is indicative of reliance on a well-informed set of sources. An additional source of information was input received from employees, as 86% of respondents stated that they obtained either a moderate or high amount of competitive information from their own employees. However, the most sophisticated sources such as written evidence from verified sources, competitor research obtained from an external source, media analysis, management consultants and forecasting models were the least used.

About 70% of respondents stated that they always or often trained and prepared their employees before they went to trade shows, exhibitions, conventions and other public events to make them aware of the type of information they should look for. However, the remaining 30% did this only 'occasionally' or 'never'. Only 59% of respondents said that they always or often briefed their employees on what they should not talk about to competitors, which demonstrates that companies are paying less attention to this area. This leaves 41% who are either naive or reckless about the importance of protecting the company's sensitive information.

Considering that 81% of respondents stated that they evaluated the reliability of their sources of information, it is interesting to note that this task is not an easy one as the top three barriers to effective competitive information

gathering in the open question section, were reported as: i) access to the information; ii) reliability of the information; iii) lack of resources (mostly time) which were indicated by 57%, 54% and 38% of the respondents, respectively.

Concerning the financial support given by the organization for the task of monitoring the competitive environment, about 57% of respondents considered the support given to be adequate to do a reasonable job or enough to do a good job. On the other hand, 30% stated that: i) no funds were available as the tasks were done by interested people rather than intelligence experts; ii) funds were provided if an immediate financial benefit could be produced; iii) minimal support was provided to cover the basic tasks and simple gathering. The remainder stated that the activity received a set budget or that funds were available on request.

Based on the provided answers, the overall verdict inclined towards a hunter gathering level. However, the self-declared control statement showed that the verdict may be more nuanced as half of the companies used only public domain sources for their competitive information. Thus, the verdict is hunter gatherer, but several of these companies take their desire for real as they are not using sophisticated ways to collect information.

4.2 Attitude

Regarding how often the firm collected information about competitors, technologies and customers, the most frequent answer was weekly for customers and competitors while both monthly and irregularly were answered 'when it becomes available or required for a project' for technology. Even though there seems to be a regular process to gather data, 41% agreed that it is not an organized process, and only 5% of the companies had a written process and a system dedicated to CI. Therefore 95% of firms have no formalized process or dedicated system to handle gathered information.

Furthermore, 11% claimed that their companies provided 'full commitment for understanding competitors' and 70% stated that there was either 'active support for current activities' or 'just about sufficient for immediate needs'. These findings are in line with the self-declared control statement in which 30% 'try to understand specific questions for one-off projects', 41% 'try to understand the

market in the short term' and 22% had an integrated competitive information process where competitors were monitored to anticipate their moves and to plan a reaction. Only 8% agreed that 'we are too busy thinking about today to worry about tomorrow'. Here the verdict was a task-driven attitude but significantly biased towards both an immune and operational stance.

4.3 Use

When asked how they used the collected information, 68% of respondents stated that they use it for both short and long-term decision making and 54% for scenario planning, leading to a verdict of strategic user. However, 41% stated that 'there is no organized process for feeding CI output into the decision-making processes, leading to a verdict of Joneses user.

Concerning the impact different factors have in the company decision making, 'customer demands' was the most frequent choice, followed by 'competitors' long term predicted behavior', 'competitors' short term predicted behavior' and 'technological/technology standard changes'. These are congruent with the self-declared control statement in which 38% 'use competitive information to help make decisions about price changes and promotional efforts' and 46% use competitive information to identify opportunities and threats as well as to build scenarios. These findings suggest a verdict of strategic user but with a strong tendancy towards a Joneses user stance.

4.4 Location

In this section, participants were asked whether employees knew who to pass information on to when they acquired it, and 92% of respondents stated either 'always' or 'often', with only 8% stating they knew 'occasionally'. The top four departments that took responsibility for collecting CI were first sales (59%) and then general management (43%), followed by manufacturing & production (27%) and research & development (22%) with 22% of respondents stating also that all departments take responsibility. The latter response suggests that some companies work in a loose manner as they do not have a clear idea of who should take overall responsibility.

When asked whether a dedicated intelligence unit is essential to successfully accomplish the monitoring task, only 16% responded with 'always' and 30% 'sometimes'

while 38% stated this to be 'a good idea but not always essential'. The remainder responded with either 'not needed at all' or 'it seems to work well without a dedicated unit'.

Based on the above findings, it came as no surprise that 89% of respondents stated that they did not have a dedicated intelligence unit, although 54% did have a person in their firm whose job is to gather, analyze, disseminate and store the competitive information, and in 65% of the cases this person participated in senior management meetings. In sum, the verdict was an ad-hoc location approach.

4.5   Technology support

This strand deals with the type of tools used by the companies to gather information. The most frequently used tools were websites (92%) and Google (86%), followed much less frequently by specialized databases such as Derwent, Dun & Bradstreet and Euromonitor (41%) and specialized websites, for example Espacenet for patents (22%). This is in line with the self-declared control statement in which 72% of respondents stated they 'use common, freely available tools for web searching, such as Google'. However, 14% of respondents 'use full versions of meta-search engines and are also familiar with specialist databases for patent and financial information' and 14% 'use software that allow users to collect, analyze and disseminate information automatically'. The verdict was overwhelmingly a simple technology support stance.

4.6   IT Systems

This section addresses the IT systems used to manage competitive information in the companies. About 49% of the respondents stated that they did not use any systems at all to manage their competitive information and agreed with the statement that 'it is in our minds and we rely on our memories'. This contrasted with the next largest categories, chosen to a much lesser extent, with 16% stating that 'we use IT systems to manage competitive information but to ensure the safety of our information we prefer paper records and do not really like relying on computers, or somebody else', 19% stating they used off-the-shelf and 14% stating they used a bespoke development.

This is in line with the control self-declaration in which 38% agreed they did not use IT systems to manage competitive information and 'rely on our memories and the good will of staff to share what they learn' and

22% stating they 'prefer to stick to traditional methods of managing competitive information by using paper records' and agreed with the statement that they 'do not really trust computers'. However, this is in contrast to the 22% which claimed to have designed their own in-house system unique to the firm and its needs. Here the verdict was a dismissive IT systems stance with a strong tendency towards bespoke IT systems.

4.7   The typology of Peruvian grape exporters' CI practice levels

The verdicts for each strand i.e. gathering, attitude, use, location, IT systems and technology support are summarized in Figure 1. The Peruvian grape exporters appear to be aware of the importance of CI but they lack knowledge, organization and dedicated IT. Hence, thanks to the evaluation carried out in this study, companies can see the path to follow that should lead them towards higher CI practice levels to help them better address a faster and harsher competitive environment.

4.8   Cluster analysis by size of company

With regards to the six strands of the CI typology studied, practices among big, medium, and small & micro companies are rather similar to the findings for the total sample as shown in Table 2 (for more details, see Appendix 2). However, big companies have a more immune attitude compared to the task driven attitude of medium companies and the operational attitude of small companies. Furthermore, about the use of information, if big and small & micro companies are at a strategic level, medium companies are the lowest one.

In general, for all the CI strands, the percentage of small & micro companies are at higher levels. One can construe that these small & micro companies need to be more aggressive to survive as they compete with bigger companies and that consequently they seem to be more aware of the value of information for competitiveness.

Despite this, medium companies registered higher average prices (Free On Board [FOB] Peruvian port US$ 2,518 per metric ton) compared to big companies (FOB US$ 2,336 per metric ton). The small & micro companies registered the lowest average price (FOB US$ 2,259 per metric ton). This cannot be interpreted to mean that big companies have a
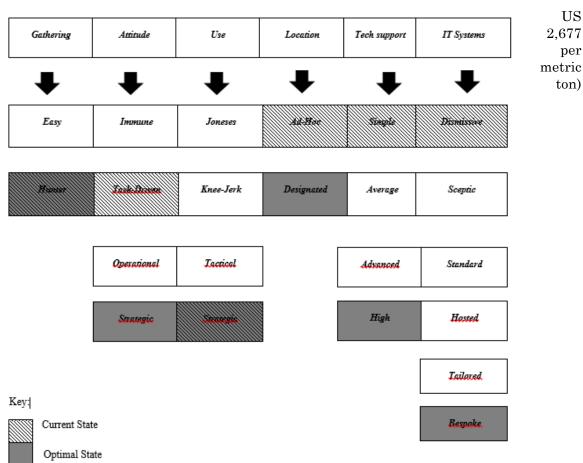
more US 2,677 per metric ton)

Figure 1 The behavioral and operational diagnostic typology of Peruvian grape exporters' competitive intelligence practice.

challenging job placing their grapes in the market compared to medium sized companies as it is shown later that the larger the grape farm the better results in price per ton. This suggests that a positive behavior towards CI pays off as medium sized companies show a higher level in this strand compared to big companies, with more cases of technology and IT support being utilized. This also suggests that the CI level is independent of the size of the company in line with the results of Priporas et al. (2005).

4.9 Cluster analysis by percentage of grapes exports in total exports

This cluster confirms that those companies that do not concentrate primarily on grapes, with grapes representing less than 75% of their total exports, have a stronger attitude towards an operational stance compared to those which are less diversified and tend towards a task-driven attitude. However, it shows that a concentration as opposed to a diversification strategy pays off as the price per ton is significantly higher in those companies concentrating on grapes (FOB Peruvian port

compared to those that do not (FOB US$ 2,133 per metric ton).

4.10 Cluster analysis by percentage of Red Globe variety in total grapes exports

Companies with a concentration of the Red Globe variety higher than 50% received a significantly lower price (FOB Peruvian port US$1,881 per metric ton) compared to those that have less concentration in this variety (FOB US$ 2,605 per metric ton). However, this cluster shows homogeneous results compared to the sample. It is worth noticing that higher value grapes increase the labor and handling costs, which moderate the variety choice (Fernandez-Stark et al. 2016).

4.11 Cluster analysis by size of farm

This cluster was analyzed based on those companies that have grape cultivation. It indicates that the companies with less than 100 hectares and more than 501 hectares behave differently from the average sample. Indeed, those companies with less than 100 hectares show a stronger attitude towards an operational stance, which somehow is

Table 2 Cluster analyses.

Strand	Gathering	Attitude	Technology	Information System	Use	Location
Cluster	Verdict	Verdict	Verdict	Verdict	Verdict	Verdict
Company size*						
Big	G2	A1	TS1	IS1	U4	L1
Medium	G2	A2	TS1	IS1	U1	L1
Small & micro	G2	A3	TS1	IS1	U4	L1
% of grapes exports in total exports**						
Higher than 75%	G2	A2	TS1	IS1	U4	L1
Lower than 75%	G2	A3	TS1	IS1	U4	L1
% of red globe in total grapes**						
Lower than 50%	G2	A2	TS1	IS1	U4	L1
Higher than 50%	G2	A2	TS1	IS1	U4	L1
TOTAL	G2	A2	TS1	IS1	U4	L1
Grapes farm size						
Lower than 100 hectares	G2	A3	TS1	IS1	U4	L1
between 101 and 500 hectares	G2	A2	TS1	IS1	U4	L1
Higher than 501 hectares	G2	A3	TS1	IS1	U1	L1
TOTAL	G2	A2	TS1	IS1	U4	L1

Sources:

* - Peru: Top Publications (2018)

** - Sunat (2016-2017)

translated into a higher level of IT systems use, and the use of the information strategically. On the other hand, those companies with more than 501 hectares also show a stronger attitude towards an operational stance, which is also translated into different levels of higher IT systems with more technology support, but they do not use the information strategically.

This cluster confirms that the largest grape farms, with more than 501 hectares, obtained a better price (FOB Peruvian port US$ 2,444 per metric ton) compared to the lower prices seen for 101-500 hectare grape farms (FOB US$ 2,413 per metric ton) and much higher prices than 100 hectares grape farms (FOB US$ 1,932 per metric ton). This can be interpreted to indicate that there is an advantage in having a higher critical mass volume for exports, since some importers prefer larger volumes from a few growers that can ensure quality consistency, food safety and traceability.

5. CONCLUSION

This paper aims to create a typology of Peruvian fresh grapes exporter CI practices. Overall, this sector shows positive behaviors towards CI but cannot make the most of it due to the lack of technological and IT systems support, lack of knowledge and dedicated organizational structures. The first verdict is that this sector displays the hunter gathering stance, which is a key indicator to engage in CI practice. However, evidence also suggests that there is still too much effort spent on easy gathering from public sources producing volume, not value. The second verdict is that exporters show a task-driven attitude where questions are asked and answered with little value added. In order to reach the ideal state of a strategic attitude, top management should embrace CI as essential for future success, addressing 'what if' questions for both short and long-term decisions, anticipating changes and planning possible courses of action. The third verdict is that this sector is a strategic user, which is the optimum state but is strongly biased towards Joneses user as the knowledge learnt is not retained for the future. The fourth verdict is ad-hoc location instead of dedicated location for CI practice, despite the fact that almost half of respondents have a person who gathers, analyzes, disseminates and stores competitive information. In order to have a successful CI program, it is necessary to define roles and responsibilities with a specific location within the organization. This way

redundant work is avoided and it empowers the person in charge to develop technical and cognitive skills to deliver the right CI to the right person at the right time. The fifth verdict is that this sector uses very simple tech support, which does not require specific knowledge, commonly using spreadsheets for their analysis and accessing web sites displaying old information that provides limited value. With globalization, increasing data complexity and speed of change, it is of the utmost importance to invest in integrated systems (e.g. scanning systems) that provide information in real time and allow this information to be aggregated. The last verdict is dismissive IT systems support as companies do not use any IT systems to manage strategic information.

The second aim of this paper explored whether the size of the company or the export level of these companies impact their CI practice level. According to the cluster analysis by size of company, CI practice level is independent of the size of the company as big, medium and small & micro companies show almost homogeneous results among the six strands. However, it seems that a slightly higher level of attitude and IT systems support pays off as medium companies show a higher price per ton compared to big companies. This does not mean that large companies have to struggle more to place more volume as cluster analysis by size of farm makes it clear that the larger the grapes farm size the higher the price per ton. The cluster analysis of grapes exports in total exports suggests there are advantages to specialization instead of diversification, as companies with grapes exports representing more than 75% of their total exports receive a higher price per ton compared to those whose grapes exports were below 75% of their total exports. Finally, the cluster analysis of the ratio of the Red Globe variety in total grapes exports, shows that significantly lower prices are received by companies that have more than 50% Red Globe in their total grapes exports. However, this cluster shows homogeneous results compared to the sample.

The results of this study provide empirical evidence to the Peruvian Government authorities about the need to promote training and the adoption of dedicated technology among companies in order to achieve higher levels of CI practices. Furthermore, Peruvian authorities as well as other South American governments can benefit from the experience of other countries that have government sponsored CI programs, specifically Canada (Brouard, 2006; Tanev and Bailetti, 2008; Tarraf and Molz, 2006), France (Bisson, 2010, 2013; Salles, 2006; Smith et al., 2010) and Switzerland (Begin et al., 2007).

5.1   Limitations and further research

As the sample size is limited, this experiment could be extended, for example, to all non-traditional agricultural Peruvian exports to confirm the findings reached in this study and to be able to address SMEs, which are known as PYMES in Latin America, to help Peruvian authorities to better address their needs.

Based on the experiences in Canada, evaluations of CI programs do not measure the direct economic impact and Calof (2017) points out that this needs to be addressed in future research. Therefore, it could be quite interesting to create a longitudinal analysis of this non-traditional agricultural Peruvian exports sector to measure the impact of CI workshops, training and dedicated IT tools on the competitive and financial performances of these companies.

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7. ACKNOWLEDGEMENT

8. APPENDİCES

Attitude	
Immune Attitude A1	Too busy thinking about today to worry about tomorrow. Thinks that the firm is either so small, so big or so special that it enjoys immunity from competitors and thus CI is a waste of time. Minimal or no support from either top management or other departments.
Task Driven Attitude A2	Finding answers to specific questions and extending what the firm knows about its competitors, usually on an ad-hoc basis. Departments more excited about CI than top management who don't see the benefits.
Operational Attitude A3	A process, revolving around the company as its centre, trying to understand, analyse and interpret markets. Top management usually trying to develop a positive attitude towards CI because they can see it might increase profit, and therefore personal bonuses. Unwilling or unable to think about the application of CI for the long term.
Strategic Attitude A4	An integrated procedure, in which competitors are determined as those who are satisfying our customer's needs, current and/or future. Monitoring their moves, anticipating what they will do next and working out response strategies. Receives both top management support, co-operation from other departments and is recognised by all as essential for future success.

Gathering

Easy Gathering G1	Firms which use general publications and/or specific industry periodicals and think these constitute exhaustive information. Unlikely to commit resources to obtain information which may be difficult or costly to obtain. Always looking for an immediate return on investment.
Hunter Gathering G2	Firms knowing that Easy Gathering information is available to all who care to look. Realise that if CI is to have a strategic impact then additional, sustained effort is required. Resources are available which allow researchers to access sources within reasonable cost parameters, back their instinct, follow apparently irrelevant leads, spend time talking, brainstorming and thinking about CI problems without always being pressured for "the answer". Firms which appreciate and support intellectual effort.

Use

Joneses User U1	Firms trying to obtain answers to disparate questions with no organisational learning taking place. Has commissioned a CI report from a consultant because that is what everybody else has done.
Knee Jerk User U2	Firms which obtain some CI data, fail to assess its quality or impact, yet act immediately. Can often lead to wasted and inappropriate effort, sometimes with damaging results. Such firms are most vulnerable to planted mis-information by competitors who are more CI aware.
Tactical User U3	CI used mostly to inform tactical measures such as price changes, promotional effort. Some firms can successfully argue that CI loses its impact and timeliness if it gets stuck at the strategic level but are, nevertheless, acutely aware of its potential value to the business.
Strategic User U4	CI is used to identify opportunities/threats in the industry and to aid effective strategic decision making. All levels of staff, both management and operational, are aware of CSF's and their attendant CI requirements. Continuous, legal measures are used to track competitors, simulate their strengths and weaknesses, build scenarios, and plan effective counter attacks. Decision makers are involved in a high number of "what-if?" discussions to which CI data is applied. Contingency planning and counter intelligence is a part of normal strategic thinking. Action plans are implemented and mistakes are seized upon as learning rather than firing opportunities. Open and facilitative management culture which displays trust and encourages involvement.

Location

Ad-Hoc Location L1	No dedicated CI unit. Intelligence activities, where undertaken are on an ad-hoc basis, subsumed into other departments, with intermittent or non-existent sharing policies.
Designated Location L2	Firms with a specific intelligence unit, full time staff, dedicated roles, addressing agreed strategic issues. Staff have easy access to decision makers, status is not a barrier to effective communication.

Technology Support

Simple Technology Support TS1	The company is just using the free web such as a search engine or looking at some web sites which require no specific knowledge. Also use general office software such as spreadsheet.
Average Technology Support TS2	Using "off the shelf" products such as meta-search engines which simply reorganise publicly available information for the firm use. The company might use web site which require specific knowledge (e.g. espacenet) and pay to use some specialised websites and databases (e.g. patent and finance).
Advanced Technology Support TS3	This information system holds vital and high level information as well as operational and tactical material. Is fully integrated across the business and continually evolves to meet the firm's requirements. Content analysis (e.g. statistical analysis) provided.
High Technology Support TS4	In addition to advanced tools, firms use "clever" algorithms aimed at understanding automatically the competitive information collected. These algorithms are based on semantics.

IT Systems

Dismissive IT Systems ITS1	Does not use any IT system to manage competitive information
Sceptic IT Systems ITS2	Has a system to manage competitive information but prefers to use paper based records. Does not trust IT systems sufficiently and is wary of their reliability
Standardized IT Systems ITS3	A standard existing system is purchased from a software vendor and installed on computers located within an organization.
Hosted IT Systems ITS4	A standard system is used, but it is not managed by the company itself (e.g. pay per view system).
Tailored IT Systems ITS5	In a tailored development, an off-the-shelf system or hosted solution is tailored according to an organization's needs regarding its competitive information.
Bespoke IT Systems ITS6	Unique to the firm system which has been designed in-house and aiming at collecting, analyzing and disseminating competitive information.

Cluster	Average FOB $/ton**	Gathering			Attitude					Technology					Information System							Use					Location		
		G1	G2	Verdict	A1	A2	A3	A4	Verdict	TS1	TS2	TS3	TS4	Verdict	IS1	IS2	IS3	IS4	IS5	IS6	Verdict	U1	U2	U3	U4	Verdict	L1	L2	Verdict
Company size*																													
Big	2.336	3	5	G2	3	2	2	1	A1	7	0	1	0	TS1	4	2	1	0	0	1	IS1	3	0	1	4	U4	7	1	L1
Medium	2.518	6	9	G2	5	6	3	1	A2	11	1	3	0	TS1	6	2	4	2	0	1	IS1	8	0	0	7	U1	12	3	L1
Small & micro	2.259	2	12	G2	1	6	7	0	A3	13	1	0	0	TS1	8	1	1	1	0	3	IS1	2	0	0	12	U4	9	5	L1
% of grapes exports in total exports**																													
Higher than 75%	2.677	3	14	G2	3	8	6	0	A2	16	0	1	0	TS1	9	2	3	2	0	1	IS1	5	0	1	11	U4	12	5	L1
Lower than 75%	2.133	8	12	G2	6	6	6	2	A3	15	2	3	0	TS1	9	3	3	1	0	4	IS1	8	0	0	12	U4	16	4	L1
% of red globe in total grapes**																													
Lower than 50%	2.605	8	16	G2	6	9	7	2	A2	18	2	4	0	TS1	12	5	3	1	0	3	IS1	8	0	1	15	U4	19	5	L1
Higher than 50%	1.881	3	10	G2	3	5	5	0	A2	13	0	0	0	TS1	6	0	3	2	0	2	IS1	5	0	0	8	U4	9	4	L1
TOTAL	2.391	11	26	G2	9	14	12	2	A2	31	2	4	0	TS1	18	5	6	3	0	5	IS1	13	0	1	23	U4	28	9	L1
Grapes farm size																													
Lower than 100 hectares	1.932	2	3	G2	1	0	4	0	A3	5	0	0	0	TS1	2	1	1	0	0	1	IS1	2	0	0	3	U4	3	2	L1
between 101 and 500 hectares	2.413	7	13	G2	4	12	3	1	A2	18	1	1	0	TS1	11	2	3	2	0	2	IS1	7	0	0	13	U4	16	4	L1
Higher than 501 hectares	2.444	1	6	G2	2	1	3	1	A3	4	0	3	0	TS1	3	1	2	0	0	1	IS1	3	0	1	3	U1	6	1	L1
TOTAL	2.419	10	22	G2	7	13	10	2	A2	27	1	4	0	TS1	16	4	6	2	0	4	IS1	12	0	1	19	U4	25	7	L1

Sources:

* - Peru: Top Publications (2018)

** - Sunat (2016-2017)