

### **The Role of Awareness, Learning and Knowledge in Entrepreneurial and Firm Leadership Processes**

**Neus Vila Brunet**

*Department of Economics and Social Sciences  
Universitat Internacional de Catalunya*

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#### **ABSTRACT**

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Scholars in recent years have urged researchers to shift from their traditional focus on specific characteristics of entrepreneurs and leaders toward research on entrepreneurship and leadership processes. To do this, researchers must better understand entrepreneurs and leaders' cognitive processes involved in learning, awareness and knowledge acquisition. In this paper systems thinking theory and system dynamics methodologies are used in the development of a dynamic conceptual framework of learning effectiveness. The research applies the conceptual framework to nine U.S. wineries and identifies the consequences of varying levels of awareness and types of knowledge, as well as alternative learning processes on entrepreneurship and leadership effectiveness. Results indicate that one's level of awareness and knowledge are key factors in enhancing one's ability to learn. The types of awareness and knowledge identified most critical for enhancing entrepreneurship and leadership effectiveness are: (a) awareness of one's mental models and learning patterns, (b) systemic knowledge and (c) business related knowledge. Results also identify that there is a positive relationship between the level of entrepreneurs' intangible key resources and the scope of the learning process undergone. The higher the level of the intangible resources the entrepreneur moves from conducting single loop learning to double loop learning.

#### **KEYWORDS**

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Management, Learning, Knowledge, Awareness, Capabilities.

## **1. Introduction**

Currently, there is a growing societal demand for entrepreneurship and leadership processes that can effectively direct businesses practices under a more holistic approach that considers business relations with society and with its environment (Porter, 2011; Bocken et al. 2014; Joice and Paquin 2016). This demand requires understanding the whole system that encompasses leadership and entrepreneurship from a dynamic perspective (Senge et al., 2008; Leih and Teece 2016).

The substantial growth in entrepreneurship and leadership in the U.S. wine sector during the last decade goes hand in hand with the double number of U.S. wineries since 1995 and the increasing competition domestically and internationally (Silverman, 2004; Taplin, 2006; Alonso et al. 2013). An interesting result of this change in the U.S. wine sector is the success of some wineries to integrate the social and environmental dimensions in their business goals (Lorenzo et al. 2018). As a result, the U.S. wine sector provides a good scenario for further understanding which tangible and intangible resources and learning capabilities enhance entrepreneurship and leadership effectiveness in satisfying consumer needs and to identify what is the relative importance of each resource and capability.

Given the current need to expand our understanding of entrepreneurship and leadership processes under a systemic approach the present paper answers the following three questions under a systems thinking and system dynamics framework: (a) what are the key intangible resources that enhance entrepreneurship and leadership effectiveness to satisfy consumer needs?, (b) which learning capabilities are associated with each winery, and how these capabilities relate to the primary intangible resources that enhance entrepreneurship and leadership effectiveness to satisfy consumer needs?, and (c) how wineries' intangible resources and capabilities vary based on winery's size and activities undertaken?.

We proceed to review the literature related to the four questions posited. The first part of the literature review focuses on the topic of entrepreneurship and leadership and what makes these processes successful. After identifying the primary intangible resources that enhance entrepreneurship and leadership effectiveness to satisfy consumer needs the literature on learning processes is revised in order to identify the relationships between the key intangible resources and three types of learning capabilities. Afterwards, the literature that explores businesses size and activities of operation and the acquisition and

management of intangible resources is revised. Finally, the systems thinking literature on system archetypes is summarized.

The propositions explored in this study are posited in the concluding part of this section.

### 1.1. Entrepreneurship and Leadership

Literature on entrepreneurship and what makes entrepreneurs successful has grown substantially during the last two decades (Carland, 2002; Freytag & Thurik, 2010; Dimov, 2011; Ayala and Manzano, 2014). Initially research focused on identifying the shared personality characteristics among entrepreneurs that make them willing to start new businesses or other activities (Casson, 1982; Brockhaus & Horwitz, 1986; Blanchflower & Oswald, 1990). However, researchers noticed that these variables could not by themselves explain the various successful entrepreneurial practices and their dynamics since they just focused on specific personal traits and events and not on the underlying cognitive processes and outside factors such as society, culture and physical resources constraints (Mitchell, 2002; Welter, 2011; Wiklund, 2011). As a result, scholars and practitioners are now focusing more on studying the internal cognitive processes involved during entrepreneurial learning, and the impacts that the economic system, institutions and culture have on entrepreneurship success (Ashar, & Lane-Maher, 2004; Zahra, 2006; Weick, & Putnam, 2006; Holcomb, 2009; Grégoire, 2011; E St-Jean and Audet, 2012).

Literature on leadership has followed a similar trajectory as the research done on the entrepreneurship field. Over the first decades leadership research developed several classifications of leaders based on the qualities that the leader possesses and the leadership tasks for which the person is responsible. The main leadership theories developed in chronologic order are: (a) “great man” leadership theory (Carlyle, 1841); (b) trait leadership theory (Galton, 1869), (c) contingency and situational leadership theory (Hersey, 1985); (d) transactional leadership theory (Bass, 1985); (e) transformational leadership theory (Burns, 1998); (f) horizontal or collaborative leadership theory (Chrislip and Larson, 1994); and (g) ethical leadership theory (Mayer et al. 2009). Van Wart (2013) presents a succinct literature review of the abovementioned leadership theories. As a result, research has moved toward further understanding how to manage people instead of tasks and the role of cognition and group factors throughout the leadership process.

Researchers have found that some of the key aspects that enhance the evolution of one's cognition relate to one's ability to sense, ability to be present, ability to reflect, and ability to understand systems (Senge 1993; Teece 1994; Scharmer 2005; Scharmer and Kaeufer 2013; Vago et al. 2018). In that direction, Peter Senge in the Fifth Discipline book (1991) presents what it is called the "personal mastery discipline" as one of the five disciplines for successful leadership and entrepreneurship. The personal mastery discipline is the discipline of aspiration that enhances the creative process that moves people from their current reality to their personal vision. Senge et al. indicate that people who develop the capability to sustain a creative tension between their current reality and their vision are able to achieve their vision in a more serene way. Hence, personal mastery can be associated with characteristics such as self-knowledge, self-control, self-confidence and innovative. Psychology and neuroscience research suggest that people that develop clearer pictures of what they envision are more able to identify the means towards them (Johnson-Laird 1983; Denzau 1994; Hill and Levenhagen 1995). Weiner notes that aspiration is a fundamental driver for recognizing opportunities to achieve one's vision (1972). Psychology research also indicates that people who develop the capacity to hold inner dialogue are less reactive and experience higher mental clarity that allows them to achieve their goals more effectively (Fonagy and Target 1997; Siegel 2007; Kong, 2017). As mentioned above part of the evolution of one's cognition goes hand in hand with the ability to understand systems as a result of the globalization process and the resulting increasing interdependence among people. Developing such a cognitive process is paramount nowadays for the success of companies so that they can properly understand the consequences of changes in their supply chain and markets where they operate. Successful leaders and entrepreneurs are building new partnerships that enhance their sustainable competitive advantage by including the social and environmental systems into the business framework (Senge 2008; Porter 2011; Scharmer and Kaeufer 2013). Two examples of these new partnerships and ways of producing and delivering are Whole Foods Market and Nestlé. Whole Foods Market envisions people and societal well-being as their primary goal (Porter and Kramer 2006), and Nestlé collaborates with NGOs in South America in order to ensure the well-being of the communities and environment where they operate (Brugmann and Prahalad 2007). As the recent research of entrepreneurship and leadership is suggesting, in order to fully understand what makes entrepreneurship and leadership successful we need to consider

also how entrepreneurs and leaders understand their company, group, society and their surroundings. Entrepreneurship research has noticed that on average just a small percentage of entrepreneurs develop the vision, plan their innovation, and execute all the stages necessary for its full materialization (Stevenson and Jarillo 1990; Zahra 2006). Normally, entrepreneurs focus on the core innovation of the new output and partner with other people in order to develop the other ingredients necessary for the success of the new product or service (Meyer 2002; Sinisammal et al. 2016). When entrepreneurs are not able to fully transform the inspiration of their creation into a business vision the success rate diminishes. Researchers have complemented this argument by identifying the frequently low managerial skills that entrepreneurs possess and how this constrains the materialization and expansion of their ideas (Hitt 2002; Ikupolati et al. 2017)

Summing up, the recent literature on entrepreneurship and leadership points out that the intangible source of the success of these processes depends on the cognitive processes that entrepreneurs and leaders undertake when dealing with themselves and their surroundings. Furthermore, evolutionary cognition literature indicates the emergence of some capabilities and the globalization process demands the acquisition of systemic knowledge. As a result, proposition 1 posits:

The four primary intangible resources that enhance entrepreneurship and leadership effectiveness to satisfy consumer needs are: a) basic managerial knowledge, b) project clear vision, c) systemic knowledge, and d) personal mastery (personal growth)<sup>1</sup>

## 1.2. Learning Capabilities

In order to approach entrepreneurs and leaders learning capabilities from a system dynamics approach three learning theories are examined that distinguish the learning process based on the structural scope chosen by the individual. The three learning theories are: a) single loop learning, b) double-loop learning, and c) theory U.

Argyris and Schön (1978) defined the process of learning as the “detection and correction of error”. In system dynamics jargon this process is named “anchoring and adjustment”. It means that people have a goal, target that they want to achieve, and the learning process focuses on reducing the gap between the goal and the current situation.

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<sup>1</sup> Personal mastery as defined by Peter Senge et al. (1991) relates to one’s level of self-confidence, self-awareness, and ability to manage stress by “continually clarifying and deepening our personal vision, of focusing our energies, of developing patience, and of seeing reality objectively”.

Argyris and Schön (1978) described the single loop learning and the double loop learning processes in the context of organizational learning in the following way: “When the error detected and corrected permits the organization to carry on its present policies or achieve its presents objectives, then that error-and-correction process is *single-loop* learning. Single-loop learning is like a thermostat that learns when it is too hot or too cold and turns the heat on or off. The thermostat can perform this task because it can receive information (the temperature of the room) and take corrective action. *Double-loop* learning occurs when error is detected and corrected in ways that involve the modification of an organization’s underlying norms, policies and objectives.”

Hence, both learning processes are aimed to reduce the gap between the desired outcome and the current situation by thinking and doing. What distinguishes both learning processes is the scope of attention and performance. The scope of single loop learning relies on the correction of existing practices that are not working properly. The scope of the learning process does not question the existing macro organizational drivers as the company vision, goals, and main strategies, but rather focuses on micro organizational practices. As a result, proposition two and three identify that the level of the key intangible resources that enhance entrepreneurship and leadership effectiveness identified in proposition one varies under each learning process. Proposition two posits:

The level of the four primary intangible resources identified that enhance entrepreneurship and leadership effectiveness to satisfy consumer needs under the single loop learning process in a range of low to high is: a) business managerial knowledge – low; b) systemic thinking – low; c) clear business/project vision – low; and d) personal mastery – medium.

Proposition three posits:

The level of the four primary intangible resources identified that enhance entrepreneurship and leadership effectiveness to satisfy consumer needs under the single loop learning process in a range of low to high is: a) business managerial knowledge – medium; b) systemic thinking – medium; c) clear business/project vision – high; and d) personal mastery – medium.

Scharmer (2005) presents Theory U as a learning process that involves sensing and presence before the thinking and doing stage takes place. As a result, the author uses the term “presencing” (sensing + presence) to expose that deeper scopes of learning can take place when people “stop and listen to others and to what life calls you to do... allow the

inner knowing to emerge” (2005). Hence, the practice of the Theory U learning process requires the integration of the so called “right-brain and left-brain” capabilities and its scope encompasses micro and macro business practices. As Scharmer points out (2005), what differ from one type of learning to the other is the depth of the awareness about the forces that shape the current reality and the consequent source of action. Hence, with the development of our consciousness deeper learning occurs by sensing, witnessing and realizing. After this initial deeper learning process, thinking and doing finishes the details and integration process (Scharmer 2005). The power of deeper levels of learning is that it increases individuals' awareness of the larger whole -both as it is and as it is evolving. Hence, the development of the capability to undergo theory U learning process leads to entrepreneurial actions that increasingly serve the emerging whole and the satisfaction of consumer needs is enhanced.

Proposition four posits:

The level of the four primary intangible resources identified that enhance entrepreneurship and leadership effectiveness to satisfy consumer needs under the single loop learning process in a range of low to high is: a) business managerial knowledge – medium; b) systemic thinking – high; c) clear business/project vision – high; and d) personal mastery – high.

### 1.3. Businesses Intangible Resources by Size

One of the major soft internal challenges faced by small and medium wineries is the background of the founder or manager (Aggelogiannopoulos 2007; Charters, Clark-Murphy et al. 2008) and the ability to develop adequate managerial skills (Dillon 1992). Dillon et al. study indicates that adequate planning and management are key determinants of small and medium winery's success or failure. As the authors point out “economically unsuccessful wineries are not managed by individuals who plan to fail, but by managers who often fail to plan.” It is normally the case that wineries are operated by a grape grower that has vertically integrate downstream into winemaking (Chaddad 2013). When this is the case, and when wineries are small, there is a major need to ensure that the new winery owners acquire the necessary managerial knowledge to ensure the winery's sustainability. Poor time management and poor financial management tend to bring these wineries to failure (Morris 2008; Dobie 2009). White (2010) mentions that it is necessary to think

first about who is the ideal customer (the target market), before deciding about the produce, price, promotion and distribution strategies, a step that is frequently not taken.

Proposition five posits:

Small wineries' entrepreneurs and leaders have a relative lower level of winery managerial knowledge and systemic knowledge.

#### 1.4. Entrepreneur Personal Mastery and Activities Engaged

Peter Senge in the Fifth Discipline (1991) presents what it is called the “personal mastery discipline.” The personal mastery discipline is the discipline of aspiration that enhances the creative process that moves people from their current reality to their personal vision. Senge et al. indicate that people who develop the capability to sustain a creative tension between their current reality and their vision are able to achieve their vision in a more serene way. Hence, personal mastery can be associated with characteristics such as self-knowledge, self-control, self-confidence and innovative. Psychology and neuroscience research suggest that people that develop clearer pictures of what they envision are more able to identify the means towards them (Johnson-Laird 1983; Denzau 1994; Hill and Levenhagen 1995). Weiner notes that aspiration is a fundamental driver for recognizing opportunities to achieve one's vision (1972)

Recent research indicates that the key for sustained competitive advantage is to expand businesses mission beyond the creation of profit for shareholders to the creation of what is being called “shared value” (Wilber 2001; Porter 2011; Scharmer and Kaeufer 2013). Shared value is produced when the company's motivation is to provide something beneficial for people, animals, beings or the ecosystems, shifting the current standards towards the notion of serving the systems that the company is part of. The idea is to have the intention and create value not just for the company's stakeholders and direct consumers but also for the other systems that the company is part of (Senge 2008; Kramer 2011). As Porter argued (2011), it is the shift from seeing that if businesses increase profit it is good for society to seeing that what is good for society is good for businesses. One of the underlying principles is that by giving more at all levels, the company receives more at all levels as well. Employees feel more fulfilled, and some consumers and investors feel better directing their money to companies that take care of the bigger system and genuinely care about their customers (Friedman and Miles 2001; Sen and Bhattacharya 2001; Vargo and Lusch 2008)



Proposition 6 posits:

Entrepreneurs with higher level of personal growth (self-confidence, stress management, self-awareness) diversify winery activities to satisfy social and environmental consumer preferences.

Section two introduces the data sources and presents the research methodology. Section three exposes the results and section four presents the main discussion. Finally, section five summarizes the conclusions.

## **2. Methodology and Data**

The present section describes the methods used to study the entrepreneurship and leadership processes in nine U.S. wineries including the data collected and its analysis.

### **2.1. Systems thinking**

There are several methods typically used to study complex systems but systems thinking is the most suitable for the present study because it provides the tools to answer the systemic questions without having to run a simulation model. The particular systems thinking tools used to study the nine wineries are related with the construction of causal loop diagrams (CLD).

#### **2.1.1. Causal loop diagrams and systemic features of wineries**

Causal loop diagrams are a central tool used in system thinking. CLD summarize the direction and sequence of key relationships involved in the system under study. Systems thinking leads researchers through a series of steps that produce the CLD (Sterman, 2010). The main steps involved in developing meaningful causal loop diagrams are: (1) to define the problem or challenge, (2) to name the main variables that intervene in the problem, (3) to draw the reference mode<sup>2</sup> of the main variables over time, and (4) to develop dynamic hypotheses<sup>3</sup> that explain the shape of the reference modes identified.

The main components of causal loop diagrams are the variables studied and the relationships between the variables studied. The relationships can be either positive, self-

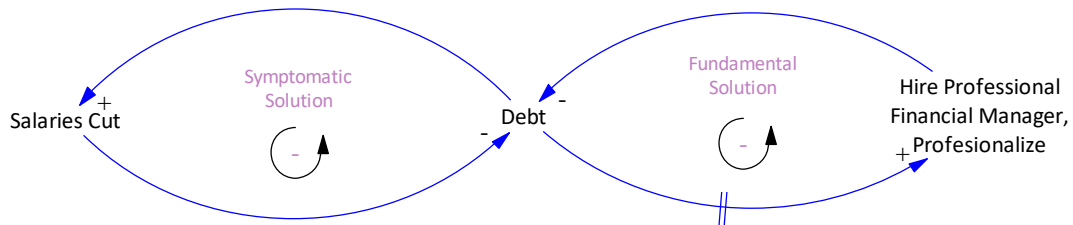
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<sup>2</sup> A reference mode is a pattern of dynamic behavior among system variables due to interrelationships and feedback loops among the variables.

<sup>3</sup> A dynamic hypothesis is a tentative explanation of how a system structure leads to observed dynamic behavior.

reinforcing loops that generate growth and amplify deviations, or negative, self-balancing loops that bring stability to the system. A third component of a CLD is delays that indicate the elapsed time between change in the causal variable and its effect on the influenced variable.

An example of a causal loop diagram for winery C. Winery C, when faced with a difficult financial situation, decided to cut salaries in order to bring the firm to a break-even situation. This strategy is represented by the negative --balancing feedback loop on the left, which indicates a symptomatic solution. A year after, winery C decided to professionalize the winery and hired a professional financial manager to handle the short run and long run winery decisions. The negative balancing feedback loop with a delay on the right reflects this fundamental solution.



**Figure 1.** Causal loop diagram example.

## 2.2. System Dynamics

In order to elucidate the behavior generated by the systemic features identified in the causal loop diagrams the stocks and flows variables must be distinguished. Stock variables are those that can accumulate units over time. Flow variables increase or reduce the level of units in stock variables over time. For instance, we have a variable that measures the stock of systemic knowledge (amount of systemic knowledge that we have accumulated over time) assuming a range from zero to a hundred, and we have another variable that measures how much systemic knowledge the individual has gained during the last year. The name of the variable that measures the amount of systemic knowledge that the individual has gained during the last year can be “systemic knowledge gained” and it measures the inflow of systemic knowledge. On the other hand, if during last year the individual has forgotten some systemic knowledge then we have an outflow of systemic knowledge. This variable can be called “systemic knowledge forgotten”. The surveys developed distinguish variables in terms of stocks and flows.

The rate of inflow or outflow is modeled with feedbacks that go from stock variables to flow variables and converters that directly affect the rate of flow. Finally, the system is modeled with variables that introduce delays in the process.

### 2.3. Sources of information

The data gathered are both, quantitative and qualitative in nature and come from four sources: (a) documentation, (b) observation, (c) interviews, and (d) surveys.

E-mails were sent to all wineries in Missouri that had websites – sixty out of one hundred and twelve—inviting them to participate in the research. Two additional wineries, one from Virginia and another from Maine were invited to participate in the study to provide a contrast to Missouri's system of wine distribution.

Seven Missouri wineries expressed an interest in participating in the study. Face to face interviews with these wineries took place during the months of March, April and May of 2013. The nine wineries participating in the study were categorized into small wineries (less than 10,000 cases per year), medium wineries (between 10,000 cases and 99,999 cases per year), and large wineries (equal or more than 100,000 cases per year) as the study of Dillon, 1992 et al. suggest.

#### 2.3.1. Face-to-face interviews and methods

Two methods were combined to gather the first set of data. These were qualitative interviews and the observation method. Given the nature of the face-to-face interviews conducted, mainly with winery managers and owners, a combination of the *general interview guide approach* and the *standardized open-ended interview approach* were implemented during the qualitative interview (Patton 1990). The general interview guide approach involves outlining a set of issues that are to be explored with the interviewee before the interview begins. The guide serves as a basic checklist during the interview to make sure that all relevant topics are covered. Under this approach as Patton mentions, “the interviewee remains free to build a conversation within a particular subject area, to word questions spontaneously, and to establish a conversational style but with the focus on a particular subject that has been predetermined” (1990). The standardized open-ended interview approach consists of a set of questions carefully worded and arranged. This approach is used when it is important to minimize variation in the questions posed to interviewees.

The rationale behind combining the general interview guide approach and the standardized open-ended interview approach is that the first allows the flexibility to explore specific areas that come into the conversation while having a clear direction about the key points that need to be elucidated. Having this flexibility is crucial for achieving the process feedback, the connection between interviewer and interviewee that allows sincere responses and a deeper understanding of the case studied (Patton 2005). The combination of these approaches also helps the development of probes and follow-up questions that allow the triangulation of observations that ensures the accuracy of the answers gathered. Also, having some questions carefully worded and being able to posit them at the appropriate time allows the comparison among case studies. This is necessary because as research has indicated (Creswell 2012), how a question is worded and asked affects how the interviewee responds. Finally, this approach to data collection allows the sequence of questions to move from less-controversial questions related to their background, present behaviors, activities and experiences, to more opinions and feelings about present and past situations, and to finally attitudes towards the future. This sequence is recommended when conducting qualitative interviewing (Patton 1990).

The observational methods applied were both as participant and onlooker, since in some occasions I walked with the winery manager to each part of the winery and I was invited to try some technologies or take part of some production processes, and in some other occasions I just observed while waiting. In every case the winery managers knew that I was there and that I was collecting data for the present research (the overt observational method). Researchers have posited some concerns about the validity of observational data since applying an overt methodology has an impact on what is being observed, since people may behave differently when they know that are being observed. However, researchers have also claimed the ethical issues involved when conducting covert observations, naming them “the debate over secrecy” (Patton 2005).

Observational research allows the researcher to capture information that winery managers are not aware of given their daily routines and greater familiarity with their business. It is important to acknowledge that the data gathered from overt observation may not fully reflect the standard winery behavior since people were aware that they were being observed. Furthermore, the observational data reported are affected by the perspective of the observer that at the same time is being affected by its environment. The duration of the interview and observational processes was between 2 hours and 5 hours, the time

required to answer the interview questions and make the necessary observations. Researchers evaluate the quality of observational reports by the extent to which the report permits the reader to enter into and understand the situation described (Patton 1990).

All the conversations took place during at each winery and are recorded. This is crucial when conducting qualitative research since what matters the most is how interviewees phrase their responses and how they convey them (Patton 2005). Recording all the conversations allows the researcher to not worry about capturing the specific words expressed by the winery manager and to be able to take notes about the specific points that need to be emphasized. Hence, in this type of research the mechanics of gathering data require complete recording of all the conversations with each winery manager, specific notes taken during the face-to-face interviews and field observations, as well as the acquisition of certain documents that were requested from winery managers (mainly financial documents).

The questionnaire items used in the face-to-face interview are either open ended questions or questions requiring answers in the form of a Likert scale of five points (Likert 1932). One point represents a 'low degree' and five points represents a 'high degree'. The information gathered during the face-to-face interview covers the following topics: (a) background information; (b) winery goals – specificity, alignment, diversification; (c) winery performance – production, sales, costs and revenues; (d) winery inputs – grapes source, employees types; (e) winery specific assets; (f) winery's strategic means – imitability level, relevance level; (g) winery's values – fairness, truth, altruism; (h) employee and manager characteristics – well-being level, winery identification level, ; (i) employee management – learning enhancement, knowledge level, relationships quality and uniqueness; rewards system; (j) relationships with suppliers and distributors – quality and uniqueness; (k) organizational structure – fit, adaptation level; (l) intangible resources management – relevance level, imitability level, (m) main external challenges, (n) main internal challenges, (o) main external opportunities, and (p) main internal opportunities. Finally, the specific learning processes that the research focuses on are: (a) winery managerial knowledge; (b) personal mastery knowledge; (c) group knowledge; and (d) systemic knowledge.

The specific questions considered in the face-to-face interview can be found together with the consent form are reported in appendix 2.

After gathering the first set of winery information (face-to-face interview recordings, complementary documents and observational notes) it was coded and introduced into an excel document. The questions from the face-to-face interview that are based on a five-point Likert scale were converted into a scale of 0 or 100 points. The relevant information from the open-ended questions was coded based on the ranges observed from all the answers and relevant sentences and paragraphs are written down and used as a complementary proof to the results presented.

Once the data are organized and allocated certain codes, inductive analysis is used in order to identify patterns, to label themes and to develop category systems, insights and new understandings. System thinking theory and the system dynamics approach is used in order to elucidate generic structures from each winery and identify if there is any relationship between the patterns observed and the systems thinking archetypes.

The questionnaire can be improved by introducing additional questions similar to those above, to ensure the consistency of the answers. This strategy is sometimes introduced when researchers want to estimate the level of answers deviation related to key questions. In the present study the interviewer double checked interviewees' explanations and reasoning by posing extra questions not included in the questionnaire when necessary. However, it would be beneficial to develop the extra validation questions before the interview takes place. Finally, the coding process from the open-ended questions was conducted by the present author. A second researcher that also coded the open-ended questions would enhance the validity of the results presented in the aggregated results tables.

### 2.3.2. Online survey questions and methods

Following preliminary analysis of the face-to-face interview data, an online survey with questions designed to gather complementary data using a five-points Likert scale was distributed to all the nine participants via e-mail. These additional questions related to the wineries' strategies related to: (a) their desired production and sales, (b) their desired relationships among personnel, (c) their desired relationships with customers, and (d) their desired relationships with government officials. In particular, the questions were designed to identify the limiting factors that are blocking the success of each strategy, together with their evolution over time, and the main processes that have alleviated these limiting factors and affected their evolution over time. The specific questions related to

managers and personnel traits were designed to determine: (a) the leadership level, (b) the leadership type, (c) the level of risk aversion, and (d) the level of uncertainty borne. Some questions were open-ended, and some involved a five-point Likert scale.

The method used to code and analyze the data from the online survey is the same as the method used to code and analyze the data from the face-to-face survey explained above. The online survey questionnaire can be found in appendix three. The specific questions considered the online survey can be found in appendix 2.

### 3. Results

The present study addresses the four questions posited by testing the validation of seven propositions and providing complementary information from the face-to-face interviews and online survey. In order to summarize the relationship among the four questions posited, the propositions and the data collected table 1 and 2 are presented.

Research Questions	Propositions
1. What are the key intangible resources (stocks) that enhance entrepreneurship and leadership effectiveness in order to satisfy consumer needs?	1. The four primary intangible resources that enhance entrepreneurship and leadership effectiveness to satisfy consumer needs are: a) winery related knowledge, b) systemic knowledge, c) business clear vision and d) personal growth level
2. What learning capabilities are associated with each winery, and how these capabilities relate to the four primary intangible resources identified that enhance entrepreneurship and leadership effectiveness to satisfy consumer needs?	2. The level of the four primary intangible resources identified that enhance entrepreneurship and leadership effectiveness to satisfy consumer needs under the single loop learning process in a range of low to high is: a) business managerial knowledge – low; b) systemic thinking – low; c) clear business/project vision – low; and d) personal mastery – medium.
	3. The level of the four primary intangible resources identified that enhance entrepreneurship and leadership effectiveness to satisfy consumer needs under the double loop learning process in a range of low to high is: a) business managerial knowledge – medium; b) systemic thinking – medium; c) clear business/project vision – high; and d) personal mastery – medium.

	4. The level of the four primary intangible resources identified that enhance entrepreneurship and leadership effectiveness to satisfy consumer needs under Theory U learning process in a range of low to high is: a) business managerial knowledge – medium; b) systemic thinking – high; c) clear business/project vision – high; and d) personal mastery – high.
3. How do wineries' intangible resources and capabilities vary based on winery's size and activities undertaken?	5. Small wineries' entrepreneurs and leaders have a relative lower level of winery managerial knowledge and systemic knowledge
	6. Entrepreneurs with higher level of personal growth (self-confidence, stress management, self-awareness) diversify winery activities to satisfy social and environmental consumer preferences.

**Table 1.** Research Questions and Propositions Correspondence.

Propositions	Survey Questions Number that relate to the Proposition
1. The four primary intangible resources that enhance entrepreneurship and leadership effectiveness to satisfy consumer needs are: a) winery related knowledge, b) systemic knowledge, c) business clear vision and d) personal growth level	Q.13, Q.14, Q.21, Q.22, Q.29, Q.30, Q.32, Q.34, Q.35, Q.37, Q.53, Q.66, (Face-to-face survey); Q.39, Q.40 (Online survey)
2. The level of the four primary intangible resources identified that enhance entrepreneurship and leadership effectiveness to satisfy consumer needs under the single loop learning process in a range of low to high is: a) business managerial knowledge – low; b) systemic thinking – low; c) clear business/project vision – low; and d) personal mastery – medium.	Q.21, Q.29, Q.35 (Face-to-face survey); Q.39, Q.40 (Online survey)
3. The level of the four primary intangible resources identified that enhance entrepreneurship and leadership effectiveness to satisfy consumer needs under the single loop learning process in a range of low to high is: a) business managerial knowledge – medium; b) systemic thinking – medium; c) clear business/project vision – high; and d) personal mastery – medium.	Q.21, Q.29, Q.35 (Face-to-face survey); Q.39, Q.40 (Online survey)
4. The level of the four primary intangible resources identified that enhance entrepreneurship and leadership effectiveness to satisfy consumer needs under the single loop learning process in a range of low to high is: a) business managerial knowledge – medium; b) systemic	Q.21, Q.29, Q.35 (Face-to-face survey); Q.39, Q.40 (Online survey)



thinking – high; c) clear business/project vision – high; and d) personal mastery – high.	
5. Small wineries’ entrepreneurs and leaders have a relative lower level of winery managerial knowledge and systemic knowledge	Q.13, Q.14, Q.21, Q.29, Q.35, (Face-to-face survey); Q.39, Q.40 (Online survey)
6. Entrepreneurs with higher level of personal growth (self-confidence, stress management, self-awareness) diversify winery activities to satisfy social and environmental consumer preferences.	Q.13, Q.14, (Face-to-face survey) and Q.39 (Online survey)

**Table 2.** Propositions and Data Sources for their Test Correspondence.

The answer of question one is based on the answers received in the face-to-face interview and online survey. The level of entrepreneurship and leadership effectiveness to satisfy consumer needs is estimated by the number of customers’ economic goals, social goals and environmental goals that the winery is able to satisfy (Q.13 and Q.14 in the face-to-face survey). The level of the winery owner intangible resources is estimated via the Likert scale survey questions. With these two sets of data we can see the relationships between customer satisfaction levels and what intangible resources levels possess the most effective wineries. Finally, the initial results are contrasted with the answers related with the identification of the main internal and external challenges and opportunities. Results are presented in tables 3 to 7 below.

Table three presents producer goals gap levels by category. Winery owners estimate how much consumer’s value price and efficiency, social values and winery’s relationship with the community, and winery’s environmental practices. Based on that estimation and the winery current satisfaction of consumers’ preferences table three indicates that Winery G is the one that satisfies the least consumers and winery D is the one that satisfies the most. Small wineries show less effectiveness in satisfying consumers’ preferences especially in terms of economic goals.

Goals Gaps Levels*	Winery A	Winery B	Winery C	Winery D	Winery E	Winery F	Winery G	Winery H	Winery I
Winery Economic Goals Gap	6.0	4.0	5.0	1.0	6.0	0.1	5.0	1.0	3.0
Winery Social Goals Gap	1.0	0.5	0.5	0.1	2.0	1.5	5.0	2.0	2.0
Winery Environmental Goals Gap	1.0	1.0	0.5	1.0	1.0	1.0	0.0	1.0	1.0
Total Goals Gap	8.0	5.5	6.0	2.1	9.0	2.6	10.0	4.0	6.0

\* Goals gaps range from 0 to 10

**Table 3.** Winery Goals Gap Levels by Category.

Table four indicates entrepreneurs' knowledge stocks for four categories and wineries' investment level on the development of the four knowledge categories for its employees. Small wineries entrepreneurs interviewed present lower levels of personal mastery, systems thinking and winery managerial knowledge. The small winery entrepreneur with higher knowledge stock is the only small winery that facilitates wine tours, and catering.

Knowledge Stocks and Inflows	Winery A	Winery B	Winery C	Winery D	Winery E	Winery F	Winery G	Winery H	Winery I
Personal Mastery Knowledge (PMK)	50	70	70	85	60	70	65	75	65
Group Learning Knowledge (GLK)	60	80	80	90	70	80	80	90	80
Systems Thinking Knowledge (STK)	50	70	70	85	60	75	60	80	65
Winery Managerial Knowledge (WMK)	50	70	70	85	60	85	60	85	60
Inflow Rate PMK	10	70	70	80	60	70	60	70	80
Inflow Rate GLK	70	70	60	80	60	70	60	70	80
Inflow Rate STK	60	70	80	70	50	80	40	80	70
Inflow Rate WMK	80	70	80	80	60	80	70	80	70

**Table 4.** Entrepreneurs' Knowledge Stocks and Wineries' Knowledge Inflows.

Table five presents entrepreneurs risk aversion level and business clarity levels. The entrepreneurs interviewed from small wineries tend to be more risk averse than entrepreneurs from medium and big wineries. The entrepreneurs interviewed that run small wineries and experience comparatively lower risk aversion levels than the other

small wineries entrepreneurs experience lower economic goals gap than their peers. The entrepreneurs from the present research that lead big and medium wineries have higher levels of business vision clarity.

Risk Aversion & Business Vision Clarity Level*	Winery A	Winery B	Winery C	Winery D	Winery E	Winery F	Winery G	Winery H	Winery I
Risk Aversion	9	2	2	1	8	3	6	3	3
Business Vision Clarity	8	8	9	10	3	8	6	10	7

\* Risk aversion and Business/Project vision levels range from 0 to 10

**Table 5.** Entrepreneurs’ Risk Aversion and Business Clarity Levels.

Wineries’ main internal and external challenges are presented in table 6. Most small wineries interviewed identify that one of their main internal challenges it the low business background that limits the efficiency and effectiveness of the managerial side of the winery. Difficulties with personnel management and capitalization are identified as the main internal challenges in the medium and big size wineries interviewed.

Main Challenges	Winery A	Winery B	Winery C	Winery D	Winery E	Winery F	Winery G	Winery H	Winery I
<b>Internal</b>									
<b>First</b>	Low Sales	Accounting Effectiveness	Capitalization	Keeping up supply to satisfy demand	Business background	Strategy to utilize the facility to its maximum	Marketing	Personnel Management	Right Size Equipment Strategy
<b>Second</b>	Low Tasting Room Capacity		Personnel Management	Accounting Effectiveness	No clear business vision	Personnel Management	Location	Effective Capital Management	Marketing
<b>Third</b>	Business background		Accounting Effectiveness		No clear sales strategy		Low Tasting Room Capacity	Retail Room Underinvested	Business background
<b>External</b>									
<b>First</b>	Distribution	Distribution	Distribution	Bugs and Animals from Grapes	Distribution		Demand Seasonality	Retailers Negotiation Power	Distribution
<b>Second</b>	Weather	Weather	Grape Provision	Online Distribution	Competition		Poor Distribution Contract		

Third			New Competitors Closer to Main Market						
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**Table 6.** Wineries’ Main Internal and External Challenges.

The main sources of wineries’ success identified during the interviews are location and natural amenities for small wineries. For the medium and big wineries interviewed the main sources of success identified are a clear business vision, high quality products, high quality treatment and nice atmosphere, and business background.

Main Success Sources	Winery A	Winery B	Winery C	Winery D	Winery E	Winery F	Winery G	Winery H	Winery I
First	Location	Good community and politicians connections	Pets Friendly	Long Term Vision	Natural Amenities Around	High Quality Products	Quality Wine	Business Background	Location
Second	Same wine in sweet and dry	Both family generations engaged	Inside and Outside Areas	Confident and Motivated People		High Quality Facility	Good Combination with B&B and Restaurant	Sufficient Initial Capital	Good partnership with close wineries
Third	Location		Happy atmosphere			High Quality Treatment		Clear Vision and Constancy of Aim and Effort	Community relationships

**Table 7.** Wineries’ Main Success Sources.

Based on the information presented the above tables the four primary intangible resources that enhance entrepreneurship and leadership effectiveness to satisfy consumer needs in the wine sector are the: a) business managerial knowledge, b) clear business vision, c) systemic knowledge, and d) personal mastery.

In order to answer the second question, “what learning capabilities are associated with each winery, and how these capabilities relate to the four primary intangible resources identified that enhance entrepreneurship and leadership effectiveness to satisfy consumer needs?” we first need to present wineries sizes and activities engaged. The next two tables indicate the size of wineries, based on the number of cases that they sell per year, and the type of activities in which they engage. Small wineries produce less than 15,000 cases per year and big wineries produce more than 100,000 cases per year based on mid-west

and east coast standards (Dillon et al. 1992). Results indicate that small wineries do not engage in as many activities as medium and big wineries. In particular, some wineries do not offer tours and do not host business related events. On the other side, the big winery distributes the wine through a national chain distributor. See table 9 for a detail of all the activities engaged in by each winery.

	Winery A	Winery B	Winery C	Winery D	Winery E	Winery F	Winery G	Winery H	Winery I
Size	Small	Small	Medium	Medium	Small	Medium	Small	Big	Small

**Table 8.** Wineries’ Size.

Activities	Winery A	Winery B	Winery C	Winery D	Winery E	Winery F	Winery G	Winery H	Winery I
grapes production	1	1	1	1	1	1	1	1	1
several wines	1	1	1	1	1	1	1	1	1
wines and other beverages	0	1	1	1	1	1	1	1	1
wine tasting	1	1	1	1	1	1	1	1	1
winery tours	0	1	1	1	1	1	0	1	0
winery events									
families/community businesses	1	1	1	1	1	1	1	1	1
self-wine distribution	0	0	0	1	0	1	0	0	0
hostel service	1	1	1	1	0	1	1	0	1
hostel service	0	1	0	1	0	0	1	0	0
catering	0	1	0	1	0	0	0	0	0
restaurant	0	1	0	0	0	1	1	0	0

**Table 9.** Wineries Activities Engaged.

Based on the above two tables, the results presented in table 4, and entrepreneurs’ verbal explanations about the strategies and approaches implemented in order to reduce goals gaps and the gaps that they see in terms of their relationships with employees, customers, suppliers and politicians, we see that small wineries interviewed mainly apply the single loop learning technique. In some instances, when experiencing critical situations, double loop learning technique is applied. The medium and big wineries interviewed are able to apply single and double loop learning processes. No winery interviewed has reported the application of Theory U learning. A summary of these results is presented in table 10.

	Learning Scope	Learning Main Steps	Intangible Resources Level			
			Business knowledge	Systemic Knowledge	Business clear vision	Personal Growth
Single loop learning	Micro, existing processes	Thinking - Doing	low	low	low	medium
Double loop learning	Macro, structural change	Thinking - Doing	medium	medium	high	medium
Theory U	Any	Presencing* - Thinking - Doing	medium	high	high	high

\*Presencing is defined by the author of Theory U as the process of Sensing + Presence (Scharmer, 2005)

**Table 10.** Relationship between the four Intangible Resources Level and the three Learning Capabilities.

Table 10 results confirm propositions 2, 3 and 4.

In order to answer question three, we look at table 4, table 5, table 8, table 9, and table 10. Table 4, table 8 and table 10 indicate that small wineries have on average lower levels of personal mastery, systemic thinking knowledge and winery related knowledge. The small winery with a higher knowledge stock contrasts with the other small wineries; it facilitates wine tours, and catering. There are no significant knowledge differences between medium and big wineries. In terms of knowledge inflow differences, small wineries tend to have a lower inflow of systemic thinking knowledge.

In terms of wineries engagement with social and environmental goals results indicate that small wineries tend to have bigger economic goal gap. This may be related to the lower level of winery related knowledge and systemic knowledge. The disparity of social goal gaps among wineries sizes is not as big as the disparity of economic goal gaps; however, medium wineries report smaller social goal gaps than small and big wineries. This higher performance may be associated to their higher level of winery managerial knowledge, systemic knowledge and personal mastery. There is no significant difference among wineries in terms of the level of environmental goal gap.

## **4. Discussion**

### **4.1. Theoretical Implications**

The present investigation expands on the theoretical framework of entrepreneurs and leader’s development of learning capabilities in two ways. Firstly, by exploring

entrepreneurs and leader's relationship with two well-known learning processes (single loop, and double loop), and a newer learning process associated with higher levels of awareness (Theory U), and identifying the level of intangible resources needed in order to be able to engage in each type of learning process. Secondly, by using the systems thinking framework and identifying the relative importance of certain stock and flow variables in the development of learning capabilities in order to ensure the satisfaction of clients.

#### 4.2. Practitioners Implications

The results from the present study to nine wineries of different sizes (small, medium and large) indicate that the four primary intangible resources that enhance entrepreneurship and leadership effectiveness to satisfy consumer needs are: a) business management knowledge, b) business/project clear vision, c) systemic knowledge and d) personal mastery. In order to ensure the satisfaction of economic goals business management knowledge and business clear vision are identified of paramount, hence, entrepreneurs have to ensure that there are sufficiently equipped with these foundations in order for the business to not go bankrupt soon after its inception. Systemic knowledge and personal mastery skills are associated with the ability of entrepreneurial and leadership abilities to sustain the business as long as the management knowledge and business clear vision are in place. Hence, managers that invest in enhancing their systemic understanding and personal mastery will be more equipped to maneuver the business over time.

Results also indicate that the level of a) business management knowledge, b) business/project clear vision, c) systemic knowledge and d) personal mastery, effect entrepreneurs learning capabilities. The owners of the small wineries interviewed presented on average lower levels of the above four intangible resources and reported to undertake single loop learning processes. Entrepreneurs of the medium and large wineries mainly experience higher business vision and systemic knowledge, and undergo single loop learning processes and double loop learning processes. None of the entrepreneurs interviewed express to follow Theory U learning process. Hence, it is important to implement time-management strategies as well as networking strategies that will allow small wineries to develop their intangible resources and be able to perform more double-loop learning processes.

Finally, research indicates that in both tangible and intangible resources, small wineries experience lower levels of resources, which limits their ability to undertake effective entrepreneurship and leadership processes and develop more effective capabilities. In this regard, business owners would benefit by identifying which public administrations can support them during the initial years in order to be more equipped and be able to compete in seemingly more equal conditions.

The results presented are part of a pilot study conducted to nine wineries. Further research that investigates the questions posited to a larger number of wineries is necessary. Besides the need of investigating a larger sample, interesting systemic features to study in future research are the key feedbacks, converters and delays that enhance entrepreneurship and leadership learning capabilities to satisfy consumer needs, and to identify which are their characteristics under the three main learning processes studied. Furthermore, research on practitioners that apply Theory U learning processes is needed in order to identify other intangible stocks, converters and feedback loops that may be unique for this type of capability.

#### **4.3. Educators Implications**

Results indicate that tools and techniques to enhance entrepreneurs and leader's ability to undergo theory U or deep learning processes need to be more available and taught so that the people who are able to undergo this learning process can actually undertake it. Complementarily, more tools and techniques that enhance systems thinking and system archetypes education for entrepreneurs and leaders would help to substantially enhance their ability to effectively address recurring detrimental behaviors.

### **5. Conclusion**

This paper investigates entrepreneurship and leadership learning processes and their effectiveness in satisfying consumer's needs in nine wineries. Results from the case studies show that in order for entrepreneurs and leader to effectively satisfy consumer needs the primary intangible resource that has to be acquired is substantial managerial knowledge together with a clear business vision. The other two intangible resources that are key for entrepreneurship and leadership ability to satisfy consumer needs are above average systemic knowledge and personal growth.



Results also indicate that there is a positive relationship between the type and level of intangible resources possessed by entrepreneurs and leaders and the type of learning performed. The higher the level of the four intangible resources the wider and deeper the learning scope results. However, entrepreneurs and leaders with high levels of the four intangible resources explored are not equipped enough with tools and techniques that would allow them to undergo deep learning processes.

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