Preface

INTELLECTUAL CAPITAL AND TECHNOLOGICAL INNOVATION: KNOWLEDGE-BASED THEORY AND PRACTICE. AN INTRODUCTION

This volume compiles a series of works devoted to the analysis of intellectual capital, innovation processes and outcomes, the link between the former two concepts, and also related to a phenomenon increasingly important for both intellectual capital and innovation, that is, social capital. This publication follows the way of the Intellectual Capital-Based View, considering that innovation is the best representation of competitive advantage in the present day. This first chapter introduces the four sections and fourteen contents chapters that built up the book, as well as the theoretical framework and concepts that lie at the heart of this project.

MAIN OBJECTIVE OF THE BOOK

This volume is titled ‘Intellectual Capital and Technological Innovation: Knowledge-Based Theory and Practice’. In short, it compiles a series of works devoted to the analysis of intellectual capital, innovation processes and outcomes, the link between the former two concepts, and also related to a phenomenon that is quite close for both intellectual capital and innovation, that is, social capital.

The main idea behind a research paper compilation like this is quite simple in essence, but quite complex in practice, because it involves intangible and multifaceted theoretical constructs as intellectual capital, technological innovation, and social capital. The idea, trying to express it in a single sentence, is that knowledge stocks (or intellectual capital), is one of the main determinant factors (if not the most) for obtaining innovations, which in turn improve the initial knowledge base and allow the starting of a virtuous cycle, when the innovator and owner of that intellectual capital socially interacts with other agents, developing also what can be labelled as social capital.

Although in the following chapters, readers may find formal and fully-developed definitions based on literature reviews and academic conversations, we are outlining the three main concepts that the book deals with. Thus, in the following paragraphs, brief definitions for intellectual capital, innovation, and social capital are provided, as well as the main assumptions of the Resource-Based View and the Intellectual Capital-Based View.

Intellectual capital is usually considered as a synonym for intangible assets (Edvinsson and Sullivan, 1996; Bontis, 1998; CIC, 2003). Assets and capital are economic and accountability terms, but the intellectual adjective makes reference to a certain dimension that has been generally neglected by economists
and accountants due to the inherent difficulties that intangibles show for an appropriate treatment and modelling. For this reason, intangible assets have also been named as hidden assets or invisible assets. And why has been intellectual capital neglected while land, labour, and capital have been so deeply studied? Because the intangible nature of intellectual capital makes especially difficult to measure, monitor, and in some cases enforce ownership for this kind of assets. Besides, the term intellectual capital includes a wide range of assets, each of them tied to a different kind of knowledge piece. Thus, we can find human, organizational, technological, or market knowledge that can be encapsulated in commitment and motivation, organizational culture and design, patents and routines, customer loyalty and reputation, and so on, showing different characteristics and implications in each case. For this reason, a deep study of intellectual capital is needed, trying to open the usually hidden or invisible black box in which they are generally contained for economists and accountants.

Innovation essentially involves the introduction of something new (Myers and Marquis, 1969; Damanpour and Evan, 1984; OECD, 2005). The Schumpeterian notion of innovation ties this novelty to inputs and outputs, regarding the introduction of new raw materials, productions processes, markets, supplies, or organization. As we can see, all the fields in which innovation can take place are tied to different kinds of intellectual capital or intangible assets. For this reason, it makes sense to think about intellectual capital as an antecedent for innovation. In general, academic literature has focused on radical versus incremental, and product versus process innovation. Nevertheless, in a rapid change environment as the present one, in which evolution and disruption coexist, and in economies becoming more service-oriented every day, this theoretical distinctions become increasingly blurred, and well defined and contextualized settings for analyzing innovation are needed. Thus, taking into account the most critical intangible assets needed for each kind of innovative outcomes in a certain setting becomes the only way for improving the study of the innovation phenomena.

Social capital represents the benefits that a certain agent can obtain from the network of relations in which it gets involved (Granovetter, 1985; Nahapiet and Ghoshal, 1998; Adler & Kwon, 2002). This concept is gaining and outstanding interest in recent years for several disciplines. Social capital has been related to intellectual capital because it shows an intangible nature itself, and because it can allow to develop and strengthen intellectual capital from external sources thanks to network ties. Social capital has also been considered as a critical antecedent or contextual trigger for innovation, as it can be followed from the notion of inter-firm collaborative agreements, innovation networks and systems, or clusters and industrial districts. Nevertheless, if the intangible nature and heterogeneous contents of intellectual capital require contextualized analysis for each kind of innovation according to firm, industry, or geographical variables, social capital shows an even more fuzzy nature that makes it an extremely specific asset. Thus, even two agents taking part in the same network of relations will not be at the same positions within that network. This determines the range of benefits that each of them could reach. Besides, the own intellectual capital available also determines the value of each relation because it locks in the possible combinations in order to create novel or improved applications, services, products or business processes. Social capital is an understudied phenomenon that, for this volume deserves great attention, because as it has been mentioned, can be critical for both intellectual capital and technological innovation.

The Resource-Based View (Wernerfelt, 1984; Barney, 1991, 2001; Peteraf, 1993) is the most influential paradigm for analyzing competitive advantage in the present. Although the notions of the Resource-Based View can be applied to different levels (i.e. business, corporation, network, region, nation…) explaining competitive advantages among agents, this theoretical stream was born within the field of strategic management. Its basic claim is that sustained differences in performance come mainly from
the differences in assets endowments among competitors. This way, two axioms are at the heart of the Resource-Based View: First, agents show heterogeneity about their asset endowments, and second, that asset endowments can not be transformed at will by decision-makers, because some assets show imperfect transferability and barriers for imitation. In an intuitive way, it makes sense to think that the firms which a better understanding about their customers, products, technologies, markets and organizational relations, that is, firms with a wide and strong endowment of intellectual capital will perform excellently. Therefore, according to the Resource-Based View, knowledge and intellectual capital should be strategically considered as the most important resources, and the capability to acquire, integrate, store, share and to apply them, will be the most valuable organizational capability to get and sustain competitive advantage (Grant, 1996).

The Intellectual Capital-Based View (Subramaniam and Yound, 2005; Reed, Lubatkin, and Srinivasan, 2006) is a refinement and middle range theory that aims to make operative the main assumptions of the Resource-Based View through the measurement indicators provided by the intellectual capital literature. The thoughtful Resource-Based thinking has been considered as excessively theoretical, assuming (but not explaining) the relationships between resources (or assets) and corporate value (or performance) (Tseng and Goo, 2005). Critics of the Resource-Based View (Priem and Butler, 2001; Foss and Knudsen, 2003) have raised questions about its legitimacy as theory, precisely because it is extremely difficult to parameterize and test empirically its main axioms without measuring intangible assets in some detail. Reed, Lubatkin, and Srinivasan (2006) propose a pragmatic, though partial, resolution from a mid-range theory that they call ‘an intellectual capital-based view of the firm’. Their main contribution is that, as a mid-range theory, the intellectual capital perspective enables a better hypotheses development and empirical testing for the Resource-Based View, adopting a partial rather than generalized view in this research.

This publication follows the way of the Intellectual Capital-Based View, considering that innovation is the best representation of competitive advantage in the present day. Thus, according to the point of view shown in this volume, Schumpeterian rents, which can be captured by firms, innovation networks and systems, regions or nations, come necessarily from their intellectual capital endowments, and especially from their ability to create and improve those endowments.

**STRUCTURE AND CONTENTS**

Along these pages, readers will find mainly academic papers dealing with the previously mentioned concepts and theoretical arguments. Most of the chapters are written by scholars and aimed for scholars, showing thoughtful literature reviews, conceptual models, and empirical research with findings supporting theory. However, some of them also are oriented toward debate and opinions, trying to provide advice for the management practice, and suggesting novel directions for managerial and academic thinking.

The intended audience for this publication are people interested in cutting-edge research in the field of intellectual capital and technological innovation, and especially interested in the link between these two concepts. Besides, this research interest in complemented with one of the most recent and promising notions in supporting both intellectual capital building and shared innovation processes, that is, social capital, which adds network and social perspectives to the mentioned analysis. Both academics and decision-makers interested in the implications and new directions for study suggested by the mentioned concepts and theoretical streams may find useful recommendations in the chapters of this volume.
The book is structured according to four sections. The first of them introduces the concept of intellectual capital, which constitutes the base for all the theoretical and empirical work gathered within this volume. The second addresses, in general, innovation processes, and technological innovation in particular. Then, the third section explores the causal relations between intellectual capital and innovation, what place it at the heart of the entire work because it represents the essential idea that triggered editing this cutting edge research publication. The fourth and last section is focused on social capital, bearing in mind that in the present day this has become an essential condition both for obtaining intellectual capital and strengthen the firm knowledge base, and for fostering innovation at a firm, industry, region, or national scale.

In the following pages the different chapters are briefly described, providing a comprehensive guide of contents for the readers. For each chapter, the main topics discussed, the theoretical streams and essential notions presented, as well as the theoretical or empirical character of the chapter are commented. Besides, for empirical papers, a research resume with the main research techniques and sample characteristics is also provided.

The first section of this volume addresses the intellectual capital topic. Within it, readers may find four papers. The first of them is entirely theoretical, with a review of the concept, components, and evolution of this research stream. The following two chapters show how intellectual capital represents an interesting phenomenon not only for firms, but also for regions or countries. In this vein, they provide interesting insights about how intellectual capital can be measured, analyzed, and developed. The fourth chapter included in this section shows the findings of a qualitative research with new technology firm, focusing on how certain components of intellectual capital, namely organizational capital, are developed through the process of organizational identity building.

The section devoted to intellectual capital starts with the theoretical review carried out by Sohrabi, Raeesi, and Khanlari, which is titled ‘Intellectual Capital Components, Measurement and Management: A Literature Survey of Concepts and Measures’. This chapter deals with the definitions, proposed components, and the advances in reporting initiatives for intellectual capital. Although it can be considered as an introductory chapter, this work provides a very useful tool for managers in charge of intellectual capital, because in its metrics section, it includes a comprehensive list of the most widely accepted indicators for measuring and managing intangible assets in practice. Besides, readers can find the method and utility, as well as a framework for preparing and using intellectual capital statements.

The second chapter, also within the intellectual capital section takes a national or institutional perspective for intellectual capital. In ‘Globalization of Instruction: Developing Intellectual Capital’, Holland and Holland address the problems that educational institutions have to face when trying to provide intellectual capital for individuals and educational systems that compete in an increasingly globalized context. As required from the Intellectual Capital-Based View, in this chapter authors focus the analysis on a certain kind of intangible assets related to human capital, trying to frame how educational institutions should change in order to provide that human capital with skills for global work environments. The chapter provokes a particular theoretical discussion, highlighting also the role of social capital and technological capital in the process of global adaptation. Besides, empirical evidence is also provided from a pilot study with college students at a small North-American University.

Another chapter dealing with intellectual capital at a regional scale, specifically at a national scale, is Chapter 3: ‘Measuring Science & Technology in Panama: Towards a National Intellectual Capital Framework’. In this work, Chang and Kan develop a framework for measuring and reporting the intellectual capital endowments of an entire country. This way, national competitive advantages (and dis-
advantages) are also supposed to be based on intellectual capital, and it is considered as a platform for innovation and economic development, which is especially interesting for developing countries. The perspective of the presented framework is closely related to other systems of national accountability and science and technology measurement like those employed by the OECD or the WEF. In addition to the methodological guidance for policy-makers that can be found in the chapter, readers will also find on it an application of the proposed framework for Panama, measuring different kinds of intangible assets as human capital, innovation capital, market capital and process capital.

The last chapter included in the intellectual capital section is titled ‘A Study on the Relations Between Organizational Identity and Intellectual Capital: Empirical Evidence in New Technology Based Firms at Madrid Science Park’. On the contrary to the previous chapters, the perspective for analyzing intellectual capital in this case is firm level. Besides, the focus of the work of Bueno, Longo, and Salmador is on understanding the connections of the process of framing organizational identity with the development of different aspects of a specific type of intellectual capital, this is organizational capital. Besides, qualitative research has been conducted for explaining this phenomenon. This way, the cases of five new technology-based firms created at Madrid Science Park, characterized by a highly reduced size and a rapid growth process are analyzed, using both primary data obtained from semi-structured interviews, and secondary data from direct observation and secondary sources. Findings of this research reveal that the social process of building an organizational identity also entails the development of some forms of organizational capital as organizational culture, organizational design, learning environments, and channels oriented towards internal and external customers.

The second section is devoted to innovation. Three heterogeneous chapters are included in it. The first one is methodological, introducing the problem-find-solving as a tool for improving innovation performance. The second is an empirical research about spillover in the case of technological capital, relating this phenomenon to the evolution and innovation results of the nonferrous metal industry in Japan. The section is closed with a theoretical-empirical chapter in which, innovation capacity, along with absorptive capacity, are taken as the main antecedents of firm dynamic capabilities. This framework is tested on an international sample of high-innovative firms from the software development industry.

Entering the innovation section, readers will find the chapter titled ‘Problem Finding and Solving: A Knowledge-Based View of Managing Innovation’ by Heiman & Hurmelimna-Laukkanen. This work is basically theoretical, but with the particularity that it introduces a novel perspective and methodology for innovation analysis: the problem finding/problem solving (PF/PS) perspective. This chapter also follows the theoretical background of this publication, arguing that knowledge-based processes and managerial decisions regarding these processes play a critical role in determining innovation outcomes, and ultimately firm success. Thus, organizations need a better understanding about what problems must they find and solve in order to improve their performance. This requires taking problems as unit of analysis for attaining a high performance innovation, and authors of this chapter support their claim with different contributions form the innovation management literature, as well as from the strategic management and micro-organizational behaviour fields. Analyzing problems involves identification of different kinds of biases (individual, team, and environmental), and solving problems is mainly a task related to overcoming these biases, which leads to superior innovation outcomes.

Nakagawa and Watanabe also address technological innovation, although they provide an empirical piece of research with ‘Innovation Dynamics of Materials Technology: An Empirical Analysis and Recommendations’. They carry out a longitudinal study with patent data focusing on one specific kind of intellectual capital, namely technological capital, and its relevance for innovation dynamics at the
industry level. For conducting their empirical research regarding changes in the use of technological capital from the technology spillover perspective, which is quite related to the notion of social capital and its evolution, Nakagawa and Watanabe focused on the nonferrous metal industry in Japan over the past quarter of a century, tracking patent applications and analyzing the relationships among them have enabled us to conduct microscopic analyses of technology spillovers, classifying them according to organization and technological field. Their results show that the management of technology spillover influences firm performance and profitability. Thus, changes from intra-intra spillover, to intra-inter and inter-inter spillover for firm technological capital are used to explain firm performance and the evolution towards the open innovation and social capital based perspectives that rule in the present day, which authors consider a post-information society.

The last chapter devoted especially to innovation is titled ‘Absorptive Capacity, R&D Intensity and Innovation Results’. The nature of this work is twofold, because it attempts to make both theoretical and empirical contributions. Along its theoretical part, Cruz & Delgado provide a literature review for the concept and components of dynamic capabilities, ending up with a definition following the seminal work of Teece, Pisano, and Shuen (1997) and framing two related concepts, namely absorptive capacity and innovation capacity, as the key components for developing dynamic capabilities. Innovation, according to this chapter, and in line with the research stream followed by this publication, appears as a way for capitalizing firm intellectual capital, capturing value, and improving performance. An interesting perspective of this chapter is that chances for obtaining superior returns from innovation come directly from the ability of the firm to identify and internalize the new external knowledge through its absorptive capacity. As a complement for the proposed relations between the notions of dynamic capabilities, absorptive capacity and innovation capacity, authors carry out an empirical study with an international set of firms from the software development industry. Their results support the claim that those companies that jointly develop their absorptive and innovative capacities, showing the theoretical balance proposed as dynamic capabilities, reach a higher performance than those that only develop absorptive capacity, which show a negative impact on performance when acting alone, or innovative capacity, that only provides a limited impact on firm results when appear individually.

The third and central section of the book introduces the key question that has guided the process of compiling this volume: the relationship between intellectual capital and technological innovation. Three chapters are included within this section. The first one presents the ‘intellectual-capital based view’, that as has been commented previously, is a refinement of the Resource Based View, and provides some propositions for its empirical development on the field of technological innovation. The second chapter of this section follows this vein, but with an empirical research focused on only one intellectual capital component, namely structural capital, analyzing its impact on firm innovation capabilities. The last chapter of this section is also an empirical research about how choosing intellectual capital components and indicators can be critical for developing firm innovation capabilities along the input, process, and result oriented stages.

In the chapter titled ‘An Intellectual Capital-Based View of Technological Innovation’, Delgado and Cruz address the main topic of this publication, deepening in the idea of Subramaniam and Youndt (2005) that organizational innovation capabilities are closely related to intellectual capital. This theoretical chapter provides a framework for the identification and classification of different kinds of intellectual capital, namely human, organizational, technological, relational, and social capitals. Besides, this theoretical model takes the different elements of intellectual capital as sources of different types of technological innovation, which are considered according to the classical notions of radical vs. incremental, and product
vs. process innovation. The main contribution of this work is explicitly considering the relationship of each component of intellectual capital with the different kinds of innovation, trying to provide a deeper focus for the main thesis of the Intellectual Capital-Based View. Although it has a strictly theoretical nature, this chapter provides a guideline for all readers interested in exploring the relations between intellectual capital and innovation that may be attracted by the topic of this book. This way, some of the types of intellectual capital considered in other chapters, as technological, organizational, or social capital, can be easily framed within this model in order to gain insights about their connections with innovation and even with performance.

Taking into account the framework presented in the previous chapter, a perfect complementary empirical analysis of its logic can be found on ‘Structural Capital and Innovation Capabilities. Theory and Empirical Evidence from Spain’. In this chapter, Alama provides empirical evidence in order to test the main claim of the Intellectual Capital based View, focusing the analysis on one kind of intellectual capital: structural capital, which includes those pieces of knowledge that provide coherence and guidance for the whole organization (Edvinsson and Malone, 1997), and is quite close to the definition of organizational capital provided in other chapters. As dependent variable for testing the mentioned research approach, competitive advantage has been considered in the shape of innovation outcomes, whereas it is understood as the successful development of new projects, products, services and ideas. Taking a sample of Spanish professional service firms, factor analysis reveals five components of structural capital, as well as only one kind of innovation for this type of knowledge-intensive industry. Regression analysis results support the idea that structural capital is one of the main sources of firm innovation. Thus, this chapter contributes with empirical evidence for moving from ‘Resource Based View of the innovation process’ (Pike, Roos, and Marr, 2005) towards an ‘Intellectual Capital based View of Innovation’.

Another empirical chapter for testing the relationship between intellectual capital and innovation is ‘Prioritizing Corporate R&D Capabilities: The Intellectual Capital Perspective’. In this research piece, Chang, Yu, and Chi apply the conception that managing intellectual capital directly impacts business performance, but for making it operative, they focus their study in searching critical components and indicators of intellectual capital in order to develop firm innovation capabilities, distinguishing three stages: input, process, and result. With 43 indicators collected from the intellectual capital literature on IC research, R&D management and innovation management, authors surveyed Taiwanese corporate R&D managers of high-tech manufacturing companies, in order to assess the relevance of the different intellectual capital components on each of the mentioned R&D stages. The results of factor analysis obtained 11 intellectual capital components according to the perspective of the R&D managers. From them, analytical hierarchy process (AHP) methodology allowed to find the most critical elements of intellectual capital for input, process, and result phases. Findings show that the relevance of intellectual capital dimensions and indicators is phase specific. According to the results of this research, the most influential factors of intellectual capital for innovation are organizational and human capital, in the input phase, and relational and process capital in the result phase. R&D managers may find advice in this chapter about what pieces of intellectual capital must be monitored and enforced for success and performance improvement when managing firm innovation.

The fourth and last section of the book introduces social capital as an increasingly relevant complementary topic for the fields of intellectual capital and technological innovation. This section includes four chapters. The first three deal with the relevance of this topic for innovation and the development of intellectual capital, presenting the concept and its dimensions from a theoretical perspective, as well as its different configurations in order to improve the innovation performance. Then, the last chapter,
that also closes this volume, provides empirical evidence from case studies in order to demonstrate the interaction among social capital, intellectual capital, and technological capital in a cluster scale.

The first chapter in the section devoted to social capital keeps contact with the innovation section and also with the intellectual capital-innovation one, because it suggest an intangible organizational asset (the organizational sweet spot) and describes its usefulness for firm innovation. In ‘Co-Evolving Relationships and Innovation Dynamics’, Charles Ehin raises the need of social systems to be fully recognized as organizational ‘hidden assets’, in order to address their management and capture the value that they can provide for firms. The reflection of the author is oriented towards the self-organization principles that rule social interactions among agents, trying to emphasize how developing constructive social contexts can support the dynamics that allow people to establish meaningful relationships and organizations to expand their sweet spot. This chapter claims for the development of pragmatic approaches from multi-disciplinary research from fields like evolutionary psychology and social neuroscience, in order to gain a better understanding of social capital and its benefits, explicitly remarking that higher emphasis must be placed on the organizational shared-access ecology success factors such as individual autonomy for responsible experimentation, a culture of sharing information, and fostering situational leadership.

After raising the relevance of social perspectives in analyzing innovation and firm performance and claiming for multi-disciplinary approaches for this concept, in ‘Social Capital: Definition, Dimensions and Measurement’ a theoretical review of the concept and dimensions of this construct is provided. Blasco devotes his work on this chapter to propose a consensus definition of social capital and to identify the ways in which extant literature has tried to make this topic operative. In spite of the fact that in other chapters social capital is considered as a component or dimension of intellectual capital, this work argues that it shows characteristics that allow us to include it within any of the dimensions of intellectual capital, as human, structural, or relational capital. After illustrating that social capital has acquired an important relevance in a wide range of disciplines, and the increasing interest of academics in explaining how the social context influences firm behavior and results, the chapter adopts the definition proposed by Nahapet & Ghoshal (1998) and explains two dimensions for this construct which also provide two different easy methods for capturing or measuring it. Thus, on one hand the structural dimension of social capital implies the analysis of the essential features of a network structure that connects diverse groups in order to obtain and exchange information and transfer knowledge, and how this can improve intellectual capital boosting technological innovation. On the other hand, the relational dimension of social capital is shaped by the characteristics and processes of relating each other between agents. This chapter provides a theoretically sound base for designing future research about social capital, especially when considering its connections with intellectual capital and innovation, as is the case of this book.

In particular, when relating social capital to intellectual capital and innovation, the chapter titled ‘Social Capital, Knowledge and Technological Innovation’ analyzes the different views of social capital and explains its contribution within the organization studies, discussing the implications of this construct for innovation performance, distinguishing between radical and incremental innovation. In this theoretical work, Alguezauzi and Fillieri propose a theoretical framework for analyzing the effect of different configurations of the structural dimension of social capital on the innovation performance. For doing so, cohesive and sparse network configurations are presented, as well as its main benefits and constraints for innovation. Cohesive networks are based on strong and highly interconnected ties and this kind of social capital provides trust, norms, and commitment. Whereas, sparse networks provide the focal firm the ability to access novel information, benefiting firm’s innovation performance through...
a wider number of loose ties. Nevertheless, both kind of social capital can pose problems. On one side, cohesive networks may turn over-embedded and lead to lock-in situations, with a high cost of maintaining strong ties, and an inability for exploration and experimentation beyond their existing network. On the other side, sparse networks can lead to the inability to a fully development of the innovation. With a thoughtful explanation of both types of social capital networks, this chapter proposes that cohesive network configurations are more suitable for radical and product innovation, and that sparse networks are more appropriate for incremental and process innovation.

The last chapter of the book was written by Massa and Testa, and it provides empirical support for the arguments presented in the rest of chapters included in the social capital section, taking a cluster based perspective and using the case study method. Thus, ‘Do Top-Down Cluster Policies Succeed in Fostering Social Capital and Innovation? Some insights from Italian cases’ gather all the topics presented in this publication: intellectual capital, technological innovation, and social capital at once. The scheme presented in this chapter propose that the effectiveness of top-down cluster policies is critical for creating new social capital at this regional level, which in turn lead to the development of new intellectual capital, hence improving the innovation capabilities of the firms located at the cluster. For illustrating this proposed scheme, two case studies about deliberate cluster promoted programs in Italy are included in the chapter. These cases present different drivers for cluster development: demand side based and supply side based. Results argue the superiority of supply-side driven clusters, because although they may experience slower return on investments on the short term, their strong export-orientation has a higher probability of success in the long-term. Thus, this chapter explains to policy makers and managers of cluster based firms how clusters may become a privileged locus of social capital that enhances dynamics of learning and knowledge creation based on socially embedded vertical and horizontal linkages of co-locating firms and on their interaction with education and research and development agents. This way, social capital provides access to an improved base of intellectual capital that fosters firm innovation.

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**KEY TERMS AND DEFINITIONS**

**Intellectual Capital:** Intangible assets or knowledge stocks.

**Innovation:** Introduction of something new, whatever it will be a new thing (product, raw material, supply source…) or way to do things (production or management process).

**Social Capital:** Benefits that a certain agent can obtain from the network of relations in which it gets involved.

**Resource-Based View (RBV):** Theory of competitive advantage which argues that sustained differences in performance among competitors come mainly from the differences in asset endowments. Its explanation of competitive advantage is based on asset endowments heterogeneity among competitors, and on the imperfect transferability and barriers for imitation regarding those asset endowments.

**Intellectual Capital-Based View:** Refinement and middle range theory that aims to make operative the main assumptions of the Resource-Based View through the measurement indicators provided by the intellectual capital literature. This perspective enables a better hypotheses development and empirical testing for the Resource-Based View, adopting a partial rather than generalized view in this research.