

Key factors for impelling an innovative social culture

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ABSTRACT: The aim of this paper is to identify the key factors that permit the gradual development of an innovative social culture which, in turn, influences the innovation process. After decades of theory development and empirical research into innovation, researchers still know surprisingly little about how the innovation process works. In this paper the capabilities, values and relationships that people, organizations and territories need to work on and develop to achieve innovation-oriented behaviour are identified. Thus, it is conducted qualitative research focused on a literature review, a workshop with 35 participants and 32 in-depth interviews with experts in different fields seeking to achieve a consensus on what values, capabilities and relationships enable people, organizations and territories to develop a propensity to become more innovative. As a result it is proposed a theoretical model which seeks to orient organizations, institutions and politicians about the factors to which they should pay attention to create and expand an innovative culture in people and/or organizations in a specific territory. That model also seeks to serve as a platform on which researchers can base future empirical analysis and approximate the level of innovative social culture in different territories. This study provides with a more dynamic, more complete view of the innovation process. However, this is only the first step in the identification of key factors for driving an innovative social culture and, therefore, encouraging innovation.

KEYWORDS: Innovative social culture, capabilities, values, relationships, theoretical model.

1 INTRODUCTION

It is commonly accepted that innovation plays a strategic role in economic development and competitiveness [1]-[3]. In the innovation age the necessary technology, equipment and R&D investments do not suffice to configure an innovation ecosystem [1], [4]-[6].

In fact, the literature on the knowledge economy is currently being enhanced by multidisciplinary contributions with a more socially (and less exclusively economically) oriented vision focused on science and innovation practices and policies [7]-[8]. The concept of business *innovation* has changed and taken on a more global [9]-[10], open approach [1], [4], [5] in which freshly-minted terms such as crowdsourcing and co-creation [11], [12], [6] denote that players outside an organization are now acknowledged as having a key role in the process of generating ideas and developing and improving products and services or new processes. In consequence, the in-house competences and resources of an organisation are no longer sufficient on their own to respond to dynamic market requirements, and collaboration and networks are becoming more and more necessary if organizations are to be competitive [13]-[15].

So genuine business participation in the knowledge economy depends not only on the internal R&D resources assigned by a company, but also on the capability of the surrounding economic, technological, social and cultural setting and the overall level of human capital of a particular region or country for supporting organizations that seek to make sustainable efforts in innovation [16], [17], [2].

Recognizing that innovation is a dynamic, iterative process which involves individuals, organizations and territories, previous studies have provided little or no practical guidance on how to identify the key factors for impelling an innovative

social culture. For this reason, the present paper sets out to identify and define the key factors for creating and driving an *innovative social culture* in a specific territory and among its people and organizations, focused on both theoretical and practical aspects.

Accordingly, the paper is structured as follows. Section 2 presents the literature background and discusses the lack of studies jointly considering the main agents of the innovation process. Section 3 introduces the method of research and data collection. Section 4 presents the theoretical model for impelling an innovative social culture, defining the key factors that people, organizations and territories need to develop to become more innovative agents. Section 5 draws conclusions and makes some final remarks.

2 TOWARDS AN INTEGRATIVE APPROACH TO THE INNOVATION PROCESS CONSIDERING THE KEY AGENTS JOINTLY: A LITERATURE REVIEW

An important limitation of previous studies is that they focus the innovation process mainly on organizations (firms) and on the way in which knowledge and information flows within and between organizations for innovation [15], ignoring the role that people, collectively or individually, and territory could play in the success of the innovation process. The social participation and quality of governance of a specific territory seem to exert considerable influence on innovative activity [2], but these factors have received little attention in the relevant literature, perhaps due to the fact that they are considered as social-level concepts rather than organization-level concepts. In this regard, most studies tend to overlook these groups and the social aspects of the innovation process [15], despite its relevance and influence [2].

Most research highlights the role of individuals and more specifically the importance of informal and interpersonal networking for the development and dissemination of innovation [18], but there is a lack of studies focused on individuals and on their particular features as drivers of innovation. Most of the studies of the roles of individuals in the innovation process that have been found come from the fields of psychology and sociology. Few of them deal with individuals in regard to the innovation process from an economic, management or organizational viewpoint (see: [19], [20], [2]). More and more studies are now being produced about flows of information and knowledge between lead users and organizations for innovation, but most of them fail to identify what features of the individuals involved in the innovation process mainly make them become more innovative. Therefore, politicians or managers who attempt to improve innovative capabilities and skills in citizens and workers to create innovation do not have enough information to make the right decisions.

Other streams of innovation research have focused on territorial (national or regional) systems of innovation, but there haven't been found studies on all three agents jointly. Nor are the main values or skills that organizations, people and territories must develop in order to become more innovative are not covered jointly in any study. In other words, there is a lack of studies that examine the big picture of innovation, i.e. that consider all the strategic agents involved in the innovation process and their key features for success in that process. This paper attempts here to shed some light on these aspects. To start with, some arguments related to the need to include the aforementioned agents in the innovation process in the globalizing economy are provided.

According to [21] successful innovation is the completion of a three-stage process: idea generation, acceptance and implementation. Ideas can only be generated by individuals, since only people possess the capability to think and create new ideas individually or within a group. These ideas are usually modified and shaped by other individuals, by the culture and routines of organizations, and by the environment or characteristics of the territory where they emerge before being accepted or rejected. Once a new idea is accepted, the necessary resources and personnel must be gathered and put into place to implement it [22], [15].

Therefore, innovation requires more than just creative skills and new ideas [23]. It needs to bring about new products, services or new organizational, marketing or production processes. Since organizations have the inputs, managerial capabilities and talents necessary to put new ideas into practice, they become part of the innovation process. Individuals and organizations are active agents of the innovation process. However they usually share a common territory, which can impel or inhibit the development of innovation, so that territory becomes the third key agent in the process.

In some studies territory is identified as a local or regional environment/system which impels innovation [24], [25]. Territory can be defined as a geographical area (region, state, nation) which shares common characteristics, such as a common history, language, culture, a certain institutional structure (education system, communication system, etc.) and public institutions that make decisions regarding that geographical area. A territorial innovation theory has emerged recently that emphasizes the significance of the regional level in economic development in addition to, and sometimes over and above, the national level. Thus, over the past twenty years researchers and policy makers have been paying more and more

attention to regions as designated sites of innovation and competitiveness in the globalizing economy. The popularity of this argument is due to various empirical studies of regional success stories, such as examples of successful regional clustering in most developed and developing economies [26], [27], the exemplary industrial system of Silicon Valley [28], the rapid economic growth of networked SMEs in industrial districts in the 'Third Italy' [29], etc. These studies all draw on the common rationale that territorial agglomeration provides the best context for an innovation-based globalizing economy because of localized learning processes and 'sticky' knowledge grounded in social interaction [30], [31].

There is no doubt that territory can play a strategic role in the way in which firms deal and collaborate with one another, in the way in which science and technology and R&D systems are organized [24], and in the way in which people and organizations learn, face change, innovate and assume risks. In general, territories evolve along different paths, through combinations of political, cultural and economic forces [24]. Those paths can be defined actively by innovation-supporting policies and more passively through the way in which individuals and organizations share, combine and implement knowledge and information. Therefore, some territories can have more innovative cultures than others. Institutional agents can encourage individuals and organizations to become innovators by developing appropriate means and policies, and people and organizations can demand that politicians and public institutions create structures and territorial environments to encourage the sharing of significant, specialised knowledge so as to create innovation (universities; technology centres and research institutes; clusters; industrial districts; living labs, etc.).

3 METHODOLOGY

The complexity of the issues involved necessitates a systematic review exploring all aspects of the existing literature and empirical evidence. The study seeks to provide such a review and thus enhance understanding of the values, capabilities and relationships of people, organizations and territory in regard to creating innovation, i.e. to encourage an innovative social culture.

The research conducted is based on a literature review and on the responses of experts in different fields. First, a half-day workshop was organized to collect suggestions from a nurture group of representative people from different fields and disciplines (politicians, managers, anthropologists, entrepreneurs, sociologists, marketers, university lecturers, artists, directors of innovation organizations, clusters, research institutes, etc.). The 35 participants were grouped into 7 roundtables, which were conducted separately by two members of the research team, one of whom was also the moderator. Each researcher asked the participants in each roundtable general questions regarding the improvement of innovative culture in people, organizations and territory, in order to check the first approach to a theoretical model for impelling an innovative social culture. The participants spent about one hour discussing each agent (people, organizations and territory) and their possible determinant factors. After each hour, one member of each roundtable moved to a different one to share the main conclusions of his/her roundtable concerning the agent that they had been discussing. Afterwards, each roundtable had half an hour to share their main conclusions with the participants from the rest of the roundtables so that they could arrive at an agreement as to what the key factors of innovative culture were for people, organizations and territory. All the discussions were recorded and subsequently transcribed and analyzed in depth. The main suggestions and contributions of the participants were incorporated into the proposed theoretical model.

Our model was then enriched by another subsequent qualitative study, in which 32 different experts underwent individual in-depth interviews, in order to test the model. Their responses were recorded and analyzed so that conclusions could be drawn. A structured questionnaire was also put to these 32 experts in order to measure the importance that they attributed to the different dimensions identified for each agent. In general, the responses of these experts regarding the key factors to be considered for developing an innovative social culture coincided with those included in the model.

The research methodology used can be regarded as mainly qualitative in nature: in such methods interviews with experts are frequently used for exploratory and theory building research. Based on the analysis drawn up, a set of factors for fostering innovation were identified that involved embedding people, organizations and territory in an innovative social culture. This encourages the development of certain capabilities, values and relationships in the various participants in the innovation process. The results of previous studies identified during the literature review are also used in the model to reinforce and support the experts' arguments and considerations.

4 APPROACH TO A THEORETICAL MODEL FOR IMPELLING INNOVATIVE SOCIAL CULTURE: DEFINITION AND PROPOSAL OF KEY FACTORS

The term *innovative social culture* is defined in this work as the set of capabilities, values and relationships possessed by people, organizations and their home region or territory which, jointly and in a coordinated fashion, provide a basis for and legitimizes innovative actions in society.

Specifically, this paper presents a proposal for a theoretical and operational model to identify factors from capabilities, values and relations that are key in enabling people, organizations and territories to respond successfully in the innovation process through the development of an innovative social culture (see Figure 1). To determine how these three analysis units (people, organization and territory) can be measured to define a specific innovative social culture, it is first necessary to conceptualize their structural dimensions, i.e. capabilities, values and relationships:

1. **Capabilities** are defined as the abilities, skills and aptitudes possessed by people, organizations and territories.
2. **Values** are defined as cultural norms and attitudes that characterize people, organizations and territories.
3. **Relationships** refers to the degree of networking between people, organizations and territories, enabling them to establish exchange relationships, networks, cooperation agreements, diversity, multidisciplinary meetings, etc.

Innovation is a multi-level, multidimensional process which represents both individual and collective achievements [15] and requires economic, cultural and institutional changes, where the way in which relationships are managed is crucial. Consequently, for an innovative social culture to be developed several aspects need to be taken into account (see Figure 1).

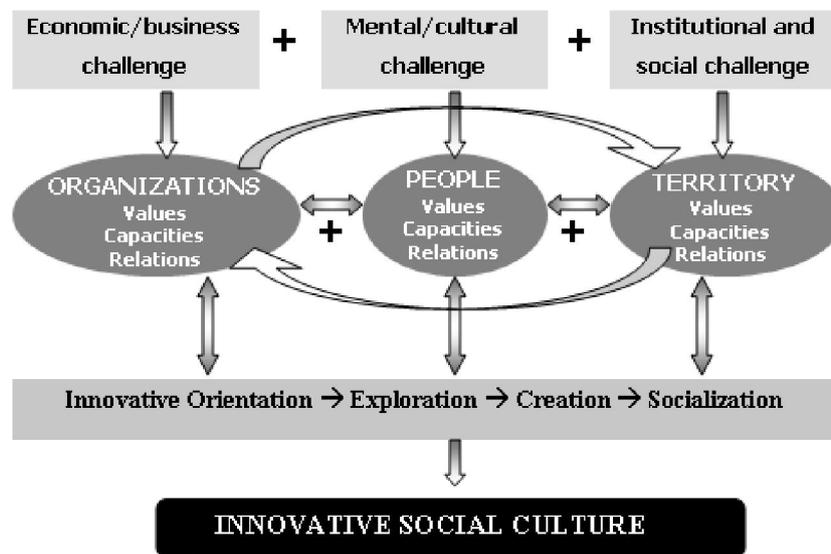


Fig. 1. Approach to a theoretical model for developing an innovative social culture

On the one hand, the development of an innovative environment is normally associated with permanent, complex institutional changes, which usually require long periods of time to mature [24].

On the other hand, the establishment or improvement of networks among the three key agents (within and between each type of participant) is essential to facilitate information sharing, which is expected to encourage innovation [2], [3]. Any network basically consists of nodes (participants) and relationships [32]. In an organizational context a network can be defined as an appropriate structure for encouraging members of an organization to learn and, correspondingly, develop innovative practices [18]. Relatively little research has focused explicitly on the dynamic links between networks and the development and utilization of knowledge during innovation processes [18], [14]. In fact, innovation networks first appeared in the relevant literature in the late 1980s, although the concept did not start to be analyzed extensively until the 2000s [14]. More recently the innovation network concept has been extended by [1] concept of *open innovation*, which is characterized

by cooperation for innovation within broad vertical and horizontal networks (with customers, suppliers, competitors, start-ups, etc.).

As mentioned above, the review of the relevant literature does not provide to identify any prior explanatory model or even a framework for analyzing innovative social culture. This paper proposes a process defined by the following four phases connected to the innovation process in order to study and develop an innovative social culture:

1. Orientation: This is understood as a preliminary stage, which predisposes people and/or organizations to adopt a positive attitude towards continuous improvement, lifelong learning, the desire to better oneself and pro-activeness in the face of change.

2. Exploration: This is a questioning phase, in which people and organizations should analyze the environment, capture information and identify opportunities to be exploited or weaknesses to be remedied.

3. Creation: This is the broadest and most complex phase of the process. It starts with the generation of ideas to solve the problems identified in the exploration phase. Then the most viable ideas are selected. Finally, the selected ideas are designed, modelled (conceptualization and prototype development) and tested to check whether they actually solve the problem identified (experimentation).

4. Socialization: This phase involves the implementation and deployment of the innovation and the progressive adoption of the innovation, starting with the first adopters and extending to the vast majority of people, organizations and potential customers. Socialization usually refers to the launching of the innovation on the market and its acceptance by the vast majority.

Table 1 shows the key factors of the proposal for a theoretical and operational explanatory model for developing an innovative social culture in a given environment or territory (region, nation, etc.). The proposed model contains the structural dimensions (capabilities, values and relationships), the three agents (people, organizations and territory/government) and the drivers for each different phase of the innovation process for the development of the innovative social culture.

Table 1. Model of Innovative Social Culture (MISC): Key factors in people, organizations and territories

<i>Dimension</i>	CAPABILITIES	VALUES	RELATIONSHIPS
<i>Innovation phase</i>	PEOPLE (P)		
ORIENTATION	C1. CAPABILITY FOR CRITICAL THINKING	V1. PROACTIVENESS AND CONTINUOUS IMPROVEMENT	R1. EXCHANGE
EXPLORATION	C2. CURIOSITY AND LIFELONG LEARNING	V2. PERMEABILITY	R2. ACCEPTING DIFFERENCE
CREATION	C3. ENTREPRENEURIAL SPIRIT AND CREATIVE TENSION	V3. PERSEVERANCE AND RESPONSIBLE ASSUMPTION OF RISK	R3. COLLABORATION
SOCIALIZATION	C4. FLEXIBILITY	V4. COMMITMENT	R4. NETWORKING
	ORGANIZATION (O)		
ORIENTATION	C5. LEADERSHIP	V5. PROACTIVENESS AND AMBITION	R5. CONNECTIVITY
EXPLORATION	C6. ENVIRONMENT WATCHING AND ABSORPTIVE CAPACITY	V6.- OPENNESS	R6. CAPILLARITY AND DIVERSITY
CREATION	C7. CREATIVITY AND EFFECTIVENESS	V7. REASONED ACCEPTANCE OF RISKS	R7. COLLABORATION AND DIVERSITY
SOCIALIZATION	C8. RECOGNIZING THE MOMENT	V8. DIFFERENTIATION AND AUTHENTICITY	R8. CREDIBILITY AND TRUST
	TERRITORY (T)		
ORIENTATION	C9. TRAINING AND ENTREPRENEURSHIP	V9. RIGHT ATTITUDE TO CHANGE	R9. INTEGRATION
EXPLORATION	C10. KNOWLEDGE OF TERRITORY	V10. OPENNESS AND OPPORTUNITY	R10. NETWORK CREATION AND INTERACTION
CREATION	C11. CREATIVE CLASSES AND MULTIDISCIPLINARY KNOWLEDGE	V11. REASONABLE TOLERANCE TO UNCERTAINTY AND FAILURE	R11. ATTRACTION, MOBILITY AND HOLDING ON TO TALENT
SOCIALIZATION	C12. LEARNING AND SHARING	V12. SOCIAL CAPITAL AND CITIZENRY	R12. ACCESSIBILITY AND COHESION

Therefore, the proposed theoretical Model of Innovative Social Culture (MISC) can be defined as:

$$MISC = f\{P(C1, C2, C3, C4, V1, V2, V3, V4, R1, R2, R3, R4) O(C5, C6, C7, C8, V5, V6, V7, V8, R5, R6, R7, R8) T(C9, C10, C11, C12, V9, V10, V11, V12, R9, R10, R11, R12)\}$$

Below it is briefly explained each factor of the theoretical model for each agent (people, organizations and territory) and dimension (capabilities, values and relationships) analyzed in each phase of the innovation process (orientation, exploration, creation and socialization):

Capabilities: People

- **C1. Capability for critical thinking:** the ability systematically to question everything that is usually taken for granted. Far removed from complacency or laziness, people should consider themselves responsible for and the protagonists of change, whether in their firms or in their role as citizens in society.
- **C2. Curiosity and lifelong learning:** permanent or lifelong learning is defined by the European Commission as “all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competence, within a personal, civic, social and/or employment-related perspective” [33]. It is a broad concept that refers to curiosity, vocation and enthusiasm for learning as something innate to personal and professional development. Therefore, this concept includes formal, non-formal and informal learning activities. Although learning is crucial for innovation, it is equally important to be able to unlearn because things learned can become outdated. Thus, unlearning also becomes a key driver of innovation [34].
- **C3. Entrepreneurial spirit and creative tension:** “entrepreneurial spirit” should be understood as “the ability of a person to transform ideas into acts. It is associated with creativity, innovation and the acceptance of risks, as well as with the ability to plan and manage projects to achieve objectives” [35]. Ensuring that this spirit takes root entails promoting attitudes of self-confidence, personal initiative and the ability to take decisions and accept responsibilities. Creativity alludes to the capacity and ability of individuals to develop novel and useful ideas in any domain [19], [36]. Intrinsic motivation is a key driver of creativity and, in turn, of innovation [37].
- **C4. Flexibility:** associated with the capability to adapt to change, and the possibility of making systematic (and trauma-free) modifications to an original idea.

Values: People

- **V1. Proactiveness and continuous improvement:** proactiveness refers to a prior attitude predisposing a person to the analysis and questioning of reality and the acceptance of new challenges, anticipating change and conceiving it as an opportunity to be taken advantage of. Continuous improvement should be understood as a philosophy or attitude of responsibility (never by imposition or obligation) that entails things being done as soon as an opportunity for improvement is spotted.
- **V2. Permeability:** this implies keeping a flexible, open attitude to suggestions and connections made in any situation. During the exploration phase, this permeability must endow the individual with the ability to “let go of what has been learnt” when necessary, not to focus on the specific, on what he/she already knows, but rather to try to see relationships and connections between apparently separate issues; this is a preliminary step towards inventing something new from the combination of elements that nobody had thought before of pairing [38].
- **V3. Perseverance and the responsible assumption of risk:** perseverance is important keeping in mind that the development of the innovation circuit is usually long, difficult and costly. It is, however, in this phase of creation that several attempts will very likely be required before you come across the key to success. It is intimately connected with “the acceptance and tolerance of failure” as part of the personal and/or group learning process. Finally, it should be emphasized that making the leap to the process of creation (sustained innovation) requires innovative, hardworking people who accept risks “in a reasoned and intelligent way”.
- **V4. Commitment:** to the extent that people are more committed as users, workers or citizens, when they abandon the passive roles that they have traditionally been assumed to have, the two-way bottom-up-top-down process of innovation will be enhanced.

Relationships: People

- **R1. Exchange:** there is no doubt that a person's proclivity towards innovation has a lot to do with his or her ability to strike up exchange relationships with the surrounding environment. For [39] "innovation is born out of effort, constancy, method, dedication, a certain amount of patience and, above all, exchange".
- **R2. Accepting difference and diversity:** exchanging and searching in the exploration phase should not be limited to "relationships between peers". Homogeneity produces homogeneous responses, which are insufficient when it comes to tackling variations in the system's environment. Homogeneity needs to be replaced by a personal drive in favour of diversity (experiential, cultural, training, etc.) as a source of innovating [40].
- **R3. Collaboration and trust:** the idea that any achievements are maximized individually must be eliminated [41]. Exchanging experiences develops attitudes and patterns of behaviour that help people to understand and approve the need to cooperate and to learn from others. However, cooperation will only be effective if it is backed by confidence and trust between the parties seeking to set up cooperation to share ideas, resources or to reduce risks.
- **R4. Networking:** For the purpose of this study a network is defined as an individual or firm's set of relationships with other individuals and/or organizations. People's participation in networks of all kinds helps individuals to disseminate their individual creations and promote group learning through areas of cooperation and joint participation. The more involvement individuals have in social forums and cross-industry networks the more likely is that they will have access to critical knowledge and that the firms in which they are employed will adopt new innovations [18]. Currently, working in networks is not only critical for accessing knowledge but also for promoting social interaction, generating trust and reciprocity that is conducive to knowledge transfer [18].

Capabilities: Organizations

- **C5. Leadership:** clear leadership provides major capacity for coaxing and bringing out systematic innovation processes within organizations [42], [43].
- **C6. Environment watching and absorptive capacity:** environmental watching means using organized systems designed to pick up on external knowledge: technological monitoring, advanced information systems (ERP and CRM systems), open communication mechanisms and channels (websites, corporate blogs, wikis, etc.) and other early warning systems. Absorptive capacity refers to the ability to evaluate, utilize and exploit external knowledge, considering that this ability is largely a function of the level of prior related knowledge [44]. That prior knowledge includes basic skills but may also include knowledge of the most recent technological or scientific developments in a specific area. Reference [44] stresses that firms' own commitment to learning activities is crucial in recognizing and appreciating the value of new information, assimilating it and exploiting its economic potential through commercialization. They also argue that the development of absorptive capacity and, consequently, innovative performance are path-dependent [44]. Thus, the lack of investment in an area of expertise early on might foreclose the future development of a technical skill in that field.
- **C7. Creativity and effectiveness:** the creation phase requires organizations that, besides keeping a vigilant eye on the environment, think, act and generate new, creative ideas. Organizational creativity is defined as "the creation of a valuable, useful new product, service, idea, procedure, or process by individuals working together in a complex social system" [19]. Even so, most businesses that launch innovative initiatives tend to spend most of their energy on the actual generation of creative ideas, forgetting that execution is equally important [45]. Effectiveness appeals to the need to bring together the best of individual or group inspiration and talent with an organization's ability to build something valuable with it [46], [47].
- **C8. Recognizing the moment:** a company's ability to spot the right time to place or socialize the innovation on the market, be it a product/service or an organizational innovation where the market is the company in itself.

Values: Organizations

- **V5. Proactiveness and ambition:** proactiveness and ambition are preliminary values which imply that the organization and the people in it maintain an attitude and orientation towards action and intra-entrepreneurship, turning new ideas into tangible, value-providing results.
- **V6. Openness:** this is defined as a receptive attitude to knowledge and practices developed outside the organization, including ones arriving from organizations and people linked or associated in some way with the organization's activity, and from other players in more remote business areas.

- **V7. Reasoned acceptance of risks:** innovation culture requires organizations to acknowledge the need to accept certain reasoned risks [19]. It is really important for an organization to be aware that failure is not intrinsically negative, because if one knows how to structure and manage it properly (learning protocols in adversity, assumption of responsibilities, avoiding social or economic penalizations, etc.) failure can be the key to future success. Failure is, in fact, a prerequisite for innovation. Reference [41] discusses how companies can reduce their fear of miscues. They argue for the presence of failure-tolerant leaders who, through their words and actions, help employees overcome their anxieties about making mistakes and, in the process, create a culture of intelligent risk-taking that leads to sustained innovation. Therefore, firms need to encourage norms that support creative and exploratory efforts including support for risk taking and tolerance of mistakes [48].
- **V8. Differentiation and authenticity:** clients are becoming increasingly demanding, and they want products and services that convey unusual, personalized experiences. Authenticity and honesty are especially valued here.

Relations: Organizations

- **R5. Connectivity or networking:** currently work on competitiveness emphasizes the importance of business networking for innovation [18]. The most systematic integration possible with clients and suppliers ensures a network of relationships and ensures that the firm is connected up to key knowledge [49], [18], [50]. Networks are thus seen as institutional structures appropriate for encouraging organization members to learn and, correspondingly, develop innovative practices. Yet, despite this observation, relatively little research has focused explicitly on the dynamic links between networks and the development and utilization of knowledge during innovation [18]. The principal benefits of networking include risk sharing; obtaining access to new markets and technologies; speeding products to market; pooling complementary skills; safeguarding property rights when complete or contingent contracts are not possible, and acting as a key vehicle for obtaining access to external knowledge [18]. Those firms which do not co-operate and which do not formally or informally exchange knowledge possess much lower levels of competence in innovation [51], [18]. In fact, network relationships with suppliers, customers and intermediaries such as professional and trade associations are important factors affecting innovation performance and productivity.
- **R6. Capillarity and cooperation:** capillarity is defined in this environment as the ability of organizations to ensure information flows between their members, on all levels and in all directions, with the purpose of innovating [52]. Formalized cooperation relationships with R&D players, public authorities, providers, clients and even competitors are just a few representative examples of a new business culture which some have already baptized as coop-petition [53]. The evidence from the literature review illustrates that those organizations which do not cooperate and which do not formally or informally exchange knowledge limit their knowledge base on a long-term basis [18] and ultimately their ability to enter into exchange relationships and innovate.
- **R7. Collaboration and Diversity:** collaboration implies a further qualitative leap in a firm's cooperation relationships, as it entails setting common objectives *and* creating a group identity and responsibility that facilitates joint efforts towards shared goals in innovation. In a climate of collaboration, diversity and heterogeneity (experiential, cultural, training, etc.) are key values in the effective development of the innovation process [40], [54].
- **R8. Credibility and trust:** trust between the parties is probably one of the most important factors when it comes to tackling cooperation and collaboration processes in innovation effectively and successfully. However, trust will only be possible to the extent that the organization is first capable of making an impression of credibility on the internal and external players with whom it interacts [55].

Territory: Innovation support policies, supra-local governance capability and cohesiveness could impel the innovative social culture of a territory [24] but they are not the only important factors to be taken into account. In the following paragraphs some capabilities, values and relationships for a territory that might be crucial in driving an innovative social culture are presented.

Capacities: Territory

- **C9. Training and entrepreneurship:** an integral approach is needed to enlarging and continually improving human capital, impacting decisively on the need to improve ongoing training levels, developing a genuine "learning culture" [10]. Adaptation to new technologies depends on the training system's capacity, but also on the motivation of people to face change [24], [56]. Recovering and visualizing "the entrepreneur" is vital as he or she is a source of innovation, creating both wealth and jobs [57].

- **C10. Knowledge of territory:** knowing one's own territory and environment is another key factor for exploration. Such knowledge ensures that institutions get the information that they need to structure and encourage a solid regional innovation system suited to the specific feasibility conditions of each territory.
- **C11. Creative classes and multidisciplinary knowledge:** developing talents and creative capital is a major feature of the economic, social, and cultural sustainability of advanced societies. It means creating groups of people who take a creative approach to complex problems. In such situations, they come up with solutions thanks to the innovative application of prior, often multidisciplinary knowledge [58].
- **C12. Learning and sharing:** according to [56] formal research is not a characteristic distinguishing progressive from non-progressive firms or territories, but the willingness to learn and share information is. Learning is a strategic element in any innovative process, but learning often has important specific, local characteristics that can be improved through certain institutional changes and properly oriented policies [24]. Learning requires means (i.e. public investment in education, financial and legal means), incentives and the capability for people and organizations to acquire the new knowledge, which often implies territorial state intervention to keep knowledge and technological options open [24]. Therefore, if governments wish to exert influence to improve innovation capacity, they must develop policies which support the learning process. Moreover, it must be taken into account that learning is sometimes accompanied by cultural and institutional changes and changes in rules and habits, which usually require a long time to mature. The territory should be able to create a framework favourable to innovation by structuring areas and channels of encounter in which science, private firms, R&D players and citizens can get together at business and territorial levels [24], [49], [50].

Values: Territory

- **V9. Right attitude to change:** it is not enough to have a suitable institutional framework and rules that work in favour of an innovative social culture if the territory is not open to new currents and tendencies that favour the emergence of innovation processes at territorial level. The traditional culture of a territory can be transformed by orienting the education and training system towards innovation and technology [24]. Therefore, institutional managers must promote the right attitude to change among people through the education system.
- **V10. Openness and opportunity:** openness is a specific attitude that a territory can use to envisage its activities relating to organizations and the people in them at least as far as innovation is concerned. Opportunity refers to the idea of recognizing and taking advantage of occasions as they arise from a proactive perspective.
- **V11. Reasonable tolerance to uncertainty and failure:** in a creative, innovative territory, institutions and society as a whole must try to protect and support organizations and people subjected to high levels of uncertainty when deciding to undertake processes of creating new ideas or business. In the second place, there is no innovation without the danger of failure. Social tolerance of "failure" in a territory is, therefore, essential. Since mistakes are commonly a major source of learning, the benefits of getting things wrong and reacting must be accepted [52].
- **V12. Social capital and citizenry:** social capital may be defined as a set of social assets such as networks, standards and trust, which can facilitate coordination and cooperation for the mutual benefit of individuals, organizations, communities and societies [59]. Social capital can favour the dissemination and transfer of knowledge between players in the innovation system, with trust being the ingredient that needs to be promoted here [60], [2], together with the strength and rootedness of the links created, helping to socialize the results of innovation. Institutions should encourage processes of citizen empowerment, generating a culture of participation, cooperation [24] and consensus, where people abandon their passive roles to act as active, committed citizens [61]. According to a study by [62] countries with strong R&D and human resources and high innovation output exhibit higher innovation adoption rates. The same authors highlight a specific geographical pattern of EU countries regarding performance in adoption, innovation and cooperation. Their work supports the idea that innovation adoption requires absorption capability and social capital.

Relations: Territory

- **R9. Integration:** the cohesion of a territory with its local environment and its integration with its regional, national and global environment so as to profile its orientation towards innovation is now an unquestionable given, particularly in view of the growing openness of markets, goods, services, information and people. Territories need to identify and integrate the key players in the innovation process, and develop facilitating mechanisms for pooling knowledge, group learning and its effective coordination. Integrating the key factors for driving innovation process networks is now becoming crucial. A territory must deploy activities in a holistically integrated fashion (facilitating

cultural change to openness, infrastructures, process, government, strategy, etc.), and must integrate and link implicated agents (organizations and people, customers, workers, suppliers, competitors, professional and trade associations, etc.) in the innovation process.

- **R10. Network creation and interaction:** innovation networks promote creativity, stimulate the capability for invention and act as a catalyst for innovation [63], [11], [13]. In this sense, regional or territorial systems of innovation can play an important role in the dissemination of innovations in terms of the way in which they shape networking activity [18]. Therefore, networks, their characteristics and scope are essential to developing an innovative society [9]. Networks are a vital component for building new bridges in and through the increasingly globalized economy, favouring the development of long-lasting interactions between players (organizations, individuals) and territories [18], [63]. Interaction is clearly a social process since it involves feedback at different points in the innovation process (knowledge development, dissemination and deployment) [24]. To facilitate interaction and relationships to encourage an innovative social culture, public institutions in a territory must include key organisational elements and linkages between them. These linkages can be specified in terms of flows of knowledge and information, flows of funds, networks, etc.
- **R11. Attraction/mobility and holding on to talent:** a territory has to be capable of generating dynamics of interaction between businesses and people, bodies and institutions, to promote the creation of networks of cooperation that enable them to work together in search of solutions to common problems. The ability to attract and hold on to talented people with an innovative, entrepreneurial profile depends to a great extent on the atmosphere in which they live and work [58].
- **R12. Accessibility and cohesion:** cohesion can be defined as the result of the forces in the territory acting on its members to keep them grouped [3]. Making networking a socialized value for the whole territory requires a high level of cohesion and integration: high enough to permit access to all assets, services, information and people (talents) available on home ground and in other territories.

5 CONCLUSIONS AND REMARKS

Research on innovation definition cuts across multiple levels of analysis. Theorists have tended to avoid multilevel research because of the conceptual problems inherent in aggregating data across different levels of analysis. Each of the various disciplines that have contributed to innovative behaviour has its own dominant theoretical approach. Basic disciplines contributing to the macro and micro approaches to innovation behaviour are at source concerned either for the societal level of analysis (sociology), or the individual level of analysis (psychology) [19]. Therefore, the further establishment of a system of innovation in an organizational or management context necessitates the development of theories and analytical methods that cut across these basic disciplines, including ways of dealing with the problems of aggregation inherent in multilevel research.

For knowledge-based organizations and societies to be constructed there is a need for a social change, in which the values of innovation and entrepreneurship are benchmarks, generating a culture open to changes and capable of producing change itself. A key task is to explore the role of social culture in its bid to encourage innovative attitudes and skills held and wielded by people, organizations and territories, and to investigate potential systems and mechanisms that would facilitate the development of cultural changes of this kind.

In this paper the capabilities, values and relationships that people, organizations and territories need to work on and develop to achieve innovation-oriented behaviour are identified. Next, the accelerators and restraints that encourage or hinder the deployment and development of the key factors selected should be identified and further explored, and qualitative research methodologies for diagnosing the current situation and setting about improving it by proposing specific measures to that end should be developed.

Innovation and, in turn, innovative social culture, must necessarily concern themselves with people, organizations and territory. If they are to fit appropriately into the theoretical model developed here, the measures used in innovation research cannot afford to ignore any of these domains. Dealing with these research problems in depth is beyond the scope of this article. Although this challenge is recognized, it would be unfortunate if scholars and researchers failed to consider the key agents of the innovation process in complex social systems. In the above sections innovation is examined from a variety of perspectives (individual, organizational and territorial scopes).

One thing becomes very clear: after decades of theory development and empirical research into innovation, researchers still know surprisingly little about how the innovation process works. From the standpoint of basic research, for example,

definitive statements can be made regarding the key factors for successful innovation in organizations, people or territories, the processes by which it manifests itself or how it is enhanced or inhibited. On the applied side, little is known about how public institutions or organizations can successfully promote and manage innovation in individuals and in organizations themselves. Much of this is due to failure to consider problems when crossing levels of analysis.

A major factor in these shortcomings is the fragmented approach that many scholars have taken regarding the study of innovation. In particular, the dominant approach has been to study innovation from a single perspective and without regard for many of the subtle nuances likely to be associated with such a complex process. The failure to look at the big picture, for example, leads almost inevitably to an incomplete perspective on innovation.

Various research streams have tended to focus narrowly on only one of these components (people, organizations or territory). The theoretical model of innovative social culture has the potential to integrate diverse research streams while at the same time indicating future research lines, for instance, determining the impact of the different factors in the innovative culture. What is more, scholars should not ignore the fact that although they may focus on one only agent, their research may eventually have important implications for other agents in the innovation process. For example, current research supports the view that networking significantly boosts innovation output and the competitiveness of firms in a wide range of industries. Moreover, close-knit networks have a positive impact on long-term innovation. Likewise firms that do not cooperate have access to a limited knowledge base over the longer term [18].

Some broad policy implications can be derived from this. Governments should focus considerable attention on developing strategies for assisting the development of networking infrastructures. Policies promoting management networking, such as seed funding for business associations, venture networks and industry conventions should, in principal, promote dissemination. Such networks vary widely in focus but dissemination of practices may occur most effectively where networks are cross-functional, engaging actors from a wide range of contexts. Where close collaboration already exists, incentive policies can promote the continuance of long-term relationships. For example, R&D tax incentives for collaborative projects may promote the emergence of longer-term network relationships.

Finally, this study provides with a more dynamic, more complete view of the innovation process. However, this is only the first step in the identification of key factors for driving an innovative social culture and, therefore, encouraging innovation. In spite of its limitation, the model provides for the first time a systematic framework for investigating how and to what extent each factor influences the promotion of an innovative social culture, and therefore the process of innovation.

We believe that this study opens up several strands of scientific research in the field of the economics and management of innovation. For instance, the development of indicators to measure the level of innovative social culture of a territory; testing the degree of correlation between the level of innovative social culture and the degree of innovation; determining the innovative profile of a territory, providing evidence of its impact on the different modalities of innovation, or on productivity, social welfare, employment, etc., might all be fields of further research worth pursuing.

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