

Original Article

Local knowledge and social value: the case of the strategic planning of Quito

Conhecimento local e valor social: o caso do planejamento estratégico de Quito

Carlos Maria Jardon^I , Klaus Gierhake^{II} , Xavier Martinez Cobas^I 

^I Universidade de Vigo, Vigo, GZ, Espanha

^{II} Universidade of Giessen, Gießen, HE, Alemanha

Abstract

Purpose: This paper analyzes the elements of local knowledge in action in the planning of the Quito metropolitan district in Ecuador from an intellectual capital-based view and indicates how these elements relate to each other and generate social value.

Design/methodology/approach: The methodology combines a bibliographic review, the analysis of the municipality of Quito documentation, the observation of the situation in 2014, and 40 semi-structured interviews.

Findings: The findings indicate that human local knowledge, structural local knowledge, and relational local knowledge in action increase social value.

Research limitations/implications: As it is a case, it can limit its generalization.

Social implications: The paper suggests actions to improve the use of local knowledge in the management of local entities.

Originality/value: The research presents different indicators of local knowledge in the territory according to an intellectual capital-based perspective. It demonstrates a dynamic that requires interrelated human, structural, and relational local knowledge.

Keywords: Local knowledge, Social value, Strategic planning, Quito

Resumo

Objetivo: Este artigo analisa os elementos do conhecimento local em ação no caso do planejamento do distrito metropolitano de Quito, no Equador, a partir de uma visão baseada no capital intelectual e indica como esses elementos se relacionam entre si e geram valor social.

Desenho/metodologia/abordagem: A metodologia combina uma revisão bibliográfica, a análise da documentação do município de Quito, a observação da situação em 2014 e 40 entrevistas semiestruturadas.

Resultados: Os resultados indicam que o conhecimento local humano, o conhecimento local estrutural e o conhecimento local relacional em ação aumentam o valor social.

Limitações/implicações da pesquisa: Por ser um caso, pode limitar sua generalização.

Implicações sociais: O artigo sugere ações para melhorar o uso do conhecimento local na gestão de entidades locais.

Originalidade/valor: A pesquisa apresenta diferentes indicadores de conhecimento local no território de acordo com uma perspectiva baseada no capital intelectual. Demonstra uma dinâmica que requer conhecimento local humano, estrutural e relacional interrelacionado.

Palavras-chave: Conhecimento local, Valor social, Planejamento estratégico, Quito

1 INTRODUCTION

Local knowledge is important to meet the climate change (Nilssen & Hanssen, 2022). It strengthens the local economy (Zandiatashbar & Hamidi, 2018) and is the root of many environmental practices, health improvements, eating habits, and the general social cohesion necessary for a territory's dynamic development (Pedler, 2002; Quartey & Wells, 2017). Local knowledge is a source of social resilience (Champlin et al., 2023).

Previous studies analyze local knowledge from different perspectives. For example, (S. Chen & Choi, 2004) highlight the role of local knowledge in successful knowledge-based cities. (Girard, 2015) analyzes farmers' knowledge from a perspective of knowledge management (KM) within the boundaries between science and society. (Quartey & Wells, 2017) study the contribution of local knowledge to sustainable development from industries. (Pedler, 2002) studies how local knowledge improves organizational direction, performance, and learning in local governments. Recent studies introduce the intellectual capital-based view in the analysis of local knowledge. For example, (Beck, 2016) suggests that the experiential learning of local knowledge enhances intellectual

capital and (Klaus Gierhake & Jardon, 2017) analyze the elements of local knowledge that intervene in the constitution of creative environments, from an intellectual-based view.

Local knowledge is essentially tacit knowledge. Thomas and Gupta (2022) emphasize several topics of interest in their study of tacit knowledge. Previous studies underscore the importance of organizational culture (Suppiah & Sandhu, 2011), leadership (Le & Nguyen, 2022), absorptive capacity (H. Chen et al., 2018), and technology (Panahi et al., 2013) to tacit knowledge-sharing (TKS), showing how the use and management of tacit knowledge improve organizations. Local knowledge is essential to management in local government and particularly to manage strategic sustainability-oriented planning (Deslatte et al., 2022). However, the use of local knowledge to manage a metropolitan strategic plan is not studied. This paper presents a case study of the application of local knowledge to the strategic plan of the metropolitan district of Quito (MDQ) in Ecuador in 2012 (MDMQ, 2012c), analyzing tacit knowledge in action and showing how the management of Quito's local knowledge promoted social values (Grogan-Myers & Hatch, 2019). This paper uses an intellectual capital-based view to analyze the micro-foundations of the management of local knowledge in a local government. This view is aimed at showing how intangible assets generate value in organizations (Martín-de-Castro et al., 2010). This view has evolved beyond the first stage, which was dedicated to using "grand theories", introducing concepts and measures in a fourth stage that analyzes intellectual capital in specific contexts (Dumay & Garanina, 2013). The paper contributes to this stage, highlighting the aspects of intellectual capital present in local knowledge management (Klaus Gierhake & Jardon, 2017) to generate social value in a metropolitan territory.

The paper contributes to the literature on TKS (Thomas & Gupta, 2022), showing a particular case in that line. In addition, it contributes to the studies of the management of local knowledge to generate social value by integrating the intellectual capital-based view (Martín-de-Castro et al., 2010) with an applied geography perspective (Von Rohr, 1994) to highlight the importance of local knowledge as a source of regional

development (Quartey & Wells, 2017), introducing a geographic perspective (Von Rohr, 1994). In addition, the paper shows the importance of managing local knowledge for the success of metropolitan strategic plans in local governments.

Further, the paper presents the concept of local knowledge from an intellectual capital perspective, followed by the methodology used for the case study and the empirical results. Finally, there follows a discussion based on the model presented in the theoretical section, and conclusions are presented with some applications of these findings.

2 THEORETICAL BASIS

The territory's intangible assets include aspects of traditional local knowledge and the territory's contributions to scientific knowledge. Local knowledge includes intangible assets in the territory, both in organizations and individuals. Local knowledge is a set of skills, expertise, and experience learned and generated within a territory. Local knowledge implies an expert understanding and practical reasoning about local conditions derived from lived experience (Yanow, 2004). It encompasses the learning, ideas, and experiences determined by a specific geographical location (Díez-Vial & Montoro-Sánchez, 2014). Local knowledge develops from the "actors lived experiences, practical reasoning, personal introspection, social learning, and continuous experimentation" (Quartey & Wells, 2017, p260). It is, therefore, inherently pragmatic knowledge.

Turnbull (2009) suggests that "human movements, actions, practices, and protocols [develop local knowledge]. It is dynamic, heterogeneous, social and distributed, its knowledge is not unified, coherent or located in the heads of individuals, but are experimental, messy, inconsistent, collective and in the process of continuous adaptation and negotiation" (Turnbull, 2009, p3). This knowledge is usually acquired by learning from others and adapting to changes (Raymond et al., 2010), which leads to constant evolution as it develops through interaction and experimentation between humans and the environment.

Traditional local knowledge is part of the intellectual capital of a territory as it contains intangible assets. The study of intellectual capital has evolved at different stages. Late-stage approaches suggest the importance of local knowledge. For example, Dumay and Garanina (2013) indicate that the fourth stage of intellectual capital research expands the boundaries of intellectual capital to broader ecosystems such as countries, cities, and communities, rather than specific companies. This expansion draws local knowledge under the umbrella of intellectual capital.

Although literature exhibits no consensus on the dimensions of intellectual capital, it is typically classified as human, structural, and relational capital (Carlos M. Jardon & Martos, 2012). Human capital is the set of people's values, attitudes, aptitudes, and capabilities that generate value for an organization (Bontis et al., 2000). Structural capital is value-generating knowledge that the company internalizes and that is "left in the organization when people go home in the evening" (Roos et al., 1997, p415). Structural capital usually includes organizational and technological aspects. These categories are combined because many authors have considered organizational systems to be "soft technologies." Relational capital is the value to a company of the set of relationships it maintains with external stakeholders. It includes relationships with the environment and the economic agents involved in the different stages of the product value chain: suppliers, competitors, and customers.

The intellectual capital framework suggests establishing three types of local knowledge. Human local knowledge includes the intangible assets present in the people working in a territory, such as their values and attitudes, knowledge, and skills (Spencer & Spencer, 1993). People's values and attitudes usually include the traditional values of the culture of the territory they have assumed. All these elements are easily integrated into the concept of human capital because they refer to the intellectual capital individuals possess. Similarly, people's specific knowledge is part of local human knowledge as it is an intangible asset and a potential source of competitive advantage for territories. Human local knowledge also includes people's capabilities that increase the territory's value.

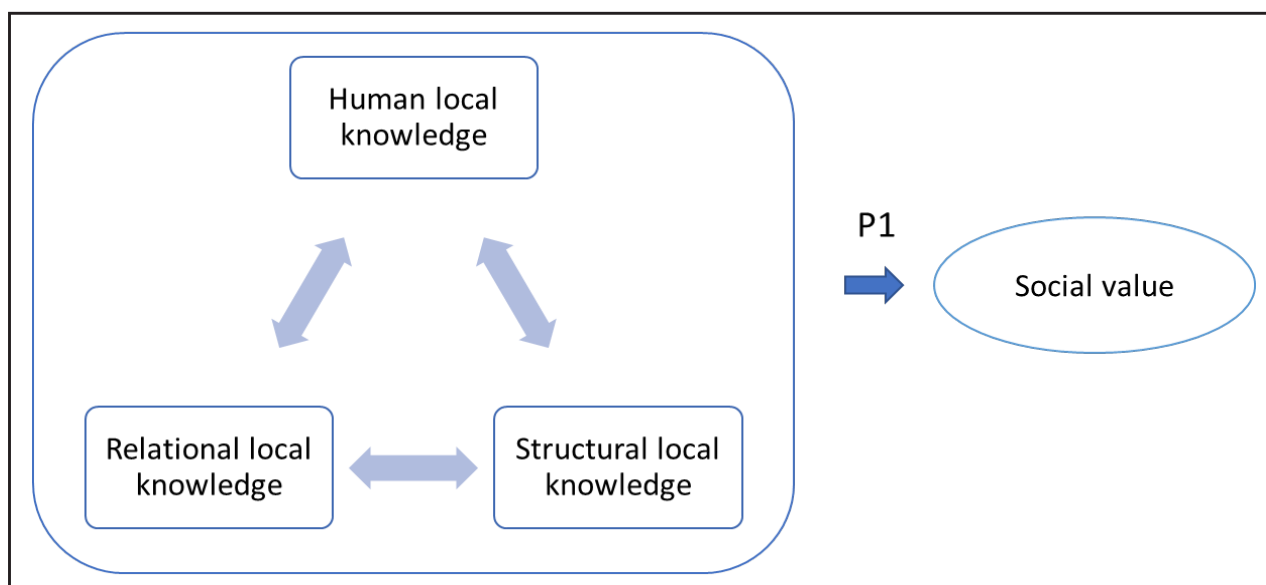
Structural local knowledge encompasses the intangible assets that belong to organizations and the territory and allow them to be efficient in their daily activities; this derives from traditional culture. This dimension includes the cultural, organizational, and technological aspects of institutions and the society in which they are integrated. The cultural aspect refers to organizations and society's history, values, mission, and vision of their projects. Traditions and values distinguish a territory from other territories (Kurczewska, 2007); culture is a development of the creative power human (Makhmudova, 2022), the basis for the generation of creative elements (Suwala, 2014), including social governance (Delgado & Leite, 2011), civic culture (Kalu, 2018), and environmental culture (Jardon & Dasilva, 2017). A common culture favors territorial cohesion (Davoudi, 2005). Organizational aspects such as work distribution, hierarchical structure, coordination, and internal communication are also manifestations of structural local knowledge. The governance structure includes dimensions of coordination and centralization of control (Arikan & Schilling, 2011). The social agents of a territory need coordination so that there is a cooperative environment, and at the same time some control over these processes so that their coordinated development is adjusted to the territory's strategies. Consequently, the governance structure enables competition under better conditions than other less structured territories and leads to the development of higher quality processes that rely on territorial knowledge. A complementary intergenerational support structure facilitates knowledge transmission and reception and is crucial to ensure the integrity of the territorial knowledge stock. The organizational structure manifests in the new support services (Jaakkola & Hallin, 2018) oriented toward improving the organization's specific tasks. Technology includes systems (Cormier, 2020), processes (Reiser & Carr-Chellman, 2024), regular and predictable patterns of activity composed of sequences of actions coordinated by individuals (organizational routines) (Nelson & Winter, 1982), and technological development (Yang et al., 2021). Therefore, it is advisable to consider

the usage and knowledge of technology in the territory that facilitates the absorption of new technologies and their possible integration into everyday life (Caragliu et al., 2011).

Relational local knowledge includes all the relationships that organizations or territories have with the outside world, which they manage or can manage to develop their activity, i.e., relationships with other organizations, institutions in other territories, the environment, or the population in general. Local relational knowledge is very useful for the territory as it offers an external assessment of the territory's situation compared with other, similar territories; it provides information about the trends or interests of the agents in the environment, which are crucial for detecting the technological and social opportunities that guide the process of developing new knowledge and promote competitiveness (Martín-de-Castro et al., 2010). The image of the institution or the territory overall is another aspect of relational local knowledge. It is essentially based on the perception of the territory that users and other external actors have. A favorable image enhances attractiveness, assists relationships, and helps generate the trust needed for them to bear fruit in cooperative agreements. Image indicators are external knowledge of the territory and its assessment in international forums, location (Felzensztein et al., 2012), and local hospitality as it facilitates the service to visitors, reinforcing a territory's social image. Relational local knowledge contains cooperative networks and alliances as they include specific agreements to improve the territory or the organizations within it.

Studies on intellectual capital indicate an interaction between the different components. Various authors note that human capital generates structural capital and relational capital (Bontis et al., 2000; Jardon & Martos, 2012). Other authors indicate that structural capital generates relational capital or human capital (Fdz-Jardón et al., 2012). Still, other papers suggest that relational capital promotes structural capital or human capital (Manfredi et al., 2011). In the case of local knowledge, we show that all three components interact, producing a virtuous circle of increased local knowledge (see Figure 1).

Figure 1 – Model and propositions



Source: the authors

Local knowledge is essentially tacit because it is usually “unconscious, embodied, action-orientated know-how or routines learned from practical activity or bodily experience” (Bickel et al., 2020:5). Tacit knowledge is difficult to transmit and use (Nonaka & Takeuchi, 1995). Thomas and Gupta (2022) summarize the factors that facilitate tacit knowledge-sharing as: social capital, organizational culture, leadership, absorptive capacity, and oriented technology.

2.1 Social value and local knowledge

Social value is a complex concept that is usually adapted to the conditions of the environment in which it is defined (Acs et al., 2013). Social value includes the improvement of people’s economic, social, and environmental conditions (Roy & Karna, 2015).

Human local knowledge is displayed in people. Managing the values of the people in a territory generates social value, since the existence of values possibly increases trust and enriches relationships (Holste & Fields, 2010). The use of ideas from local knowledge has always provided solutions to social problems and environmental conflicts (Avilés Irahola et al., 2022). Training increases citizens’ level of education,

usually facilitating the creation of knowledge (Roth, 2003). The management of this human capital underpins social innovations (Sánchez et al., 2000) as a source of social value. Leaders must have the experience to build a culture that builds mutual trust (Thomas & Gupta, 2022). Trust makes it easy to share and use tacit knowledge (Holste & Fields, 2010). Leadership skills are essential for social improvement as management behavior is vital to support human capital and promote and implement practices that lead to the transformation of human capital into performance (Jardon & Martos, 2012).

Structural local knowledge channels social improvements as it is based on local culture, and improvement associated with local culture is typically more highly valued by various stakeholders. Organizational culture is a powerful instrument for knowledge-sharing because many aspects of organizational culture may affect the sharing of knowledge positively or negatively (Suppiah & Sandhu, 2011). There is evidence of a strong correlation between organizational culture and social performance. For citizens to feel motivated to improve socially, the culture must support and reward these improvements (Wan et al., 2005). This requires a fertile climate for the gestation and implementation of improvements, which is determined fundamentally by the culture (Hii & Neely, 2000). In practice, the skills and knowledge in the physical and management systems of institutions are shaped by the territory's culture. The existence of mutual trust and understanding of the other, as well as friendship among the people involved in a network, facilitate its creation and permanence (Thuy et al., 2005), promoting organizational learning (Martín-de-Castro et al., 2010) in the territory, increasing the sharing and use of tacit knowledge, and improving social value. Thus, culture is seen as the key to developing the resources and competencies of social improvement (Hii & Neely, 2000). The organizational system placed on society also conditions the results of social improvement. The knowledge associated with technological additions helps share the local tacit knowledge (Thomas & Gupta, 2022), especially in these additions geared toward social aspects that enable increased social welfare (López Ruiz et al., 2008).

The cooperation networks and alliances include specific agreements for the improvement of the territory or organizations. Innovation-oriented cooperation management (Felzensztein, 2008) increases the territory's competitiveness. Relationships with citizens and external public institutions are also manifestations of this knowledge, increasing social value. Relational local knowledge is very useful for the territory as it provides an external assessment of the territory's situation compared with other, similar territories. This comparison provides information about the trends or interests of the agents in the environment, which are crucial for detecting technological and social opportunities that guide the development of new knowledge and facilitate social improvement (Martín-de-Castro et al., 2010). The social capital that is generated in networks of companies and institutions facilitates social innovation and, therefore, is expected to foster societal improvement. Territories with strong social capital can promote the flow of tacit knowledge among the inhabitants (Thomas & Paul, 2019). Consequently:

Proposition 1: Local knowledge management in metropolitan strategic planning increases social value.

3 METHODOLOGY

This paper analyzes a case study to test the above proposition, relying on the perspective of applied geography with an intellectual capital-based view (Martín-de-Castro et al., 2010). The applied geography perspective suggests that impact analysis, evaluation of objectives and concepts, planning, and implementation are the steps to integrate existing knowledge into new issues (Von Rohr, 1994), since intellectual capital had not been analyzed with a geographical perspective. The approach, based on intellectual capital, allows each of the elements of local knowledge to be analyzed as a source of territorial competitiveness, creating the basis of the territory's social value.

This research uses different sources of information. Firstly, we revised the documentation of the municipality of Quito (in Spanish), including the design of the

strategic plan and subsequent development in each of the organizational subunits (Bowen, 2009). Secondly, we observed the explicit functioning of the municipality and its specific repercussions on the day-to-day life of the community of Quito and its surroundings in 2014, as Dana and Dumez (2015) describe. Thirdly, we conducted 40 semi-structured interviews with the main social actors of the process and outside observers, experts who were able to evaluate the causes of process implementation and point out the defects in its operation or application (Adams, 2015). In total, 13 people from the MDQ were interviewed, covering the main hierarchical levels and the most important sectors for territorial policy. Some people were interviewed more than once to assess and contrast different opinions and adapt the information base to a specific territory. The content of the interviews was designed in advance. Semi-structured interviews are a valid instrument to combine theoretical and practical aspects as they collect ideas firsthand and are presented according to the underlying theory. The interviewees' credibility, transferability of the concepts, and dependence on local actors were checked from different sources by triangulating the results (Lincoln and Guba, 1985).

The information was triangulated with different issues. The research consulted key actors in the territory (advisors from the mayor's office and external observers from NGOs) with whom MDQ entities could work on the topic of "territorial development." The researchers then conducted interviews and made observations in the municipality's units. The head of the entity, an advisor from each of the units identified, and an external observer from the institutions associated with the territory were interviewed. These interviews were conducted in Ecuador from early February to late May 2014. Afterwards, international experts were consulted. During June, a series of three interviews were conducted in Germany with experts with knowledge and interest in the topic, complemented by seven interviews in Argentina, Peru, and Mexico, by invitation, from late August to early October, aimed at assessing the dissemination of the process developed in Quito. Finally, from July to November, complementary interviews were conducted in Ecuador with the same people who had been contacted previously to present the first results and hypotheses,

and contrast them with their opinions. The summary of these interviews was collected in a report Gierhake (2014) (see annex). The information was processed with qualitative analysis, by looking for those elements of documentation and interviews that were associated with the theoretical concepts of intellectual capital and social value.

The research uses a specific model based on the theoretical concepts defined in the previous section to search for indicators to evaluate the local knowledge present in the area. Based on these aspects, variables have been established that present a greater relationship with each aspect of local knowledge, evaluated with indicators from the interviews and municipal documentation. The relationships were highlighted by the interviews and confirmed by the observed facts.

4 THE METROPOLITAN DISTRICT OF QUITO

The MDQ had a population of approximately 2 million inhabitants in 2014. Suburbanization processes were present, especially in the valleys, and forest and agricultural areas were being lost. As in all large cities, social services were concentrated in the centers of the urban areas. These services had recently improved their coverage (MDMQ, 2012b). The social and economic situation of the MDQ was very similar to those of other Latin American cities. The Municipality of the Metropolitan District of Quito (MMDQ) is the institution that governs and manages the MDQ, so many activities and characteristics used in this paper are identified in both entities.

Latin America is the region most affected by urbanization (Coy & Töpfer, 2012). This research focuses on the impact of intellectual capital on so-called “mega-cities” (territories with more than 5 million inhabitants, not always with precise administrative boundaries), such as informality and insecurity (Wehrhan & Haubrich, 2010) and the privatization of public space (Borsdorf & Coy, 2009). Almost no geographic research has been performed on intermediate cities, like Quito (Wehrhahn, 2007). UNESCO’s Creative Cities Network program offers a database on the experiences of innovations created in such cities but focuses on cultural and

creative aspects, covering fields such as literature, movies, music, crafts, design, media, and gastronomy, omitting other aspects of social value (UNESCO, 2004).

4.1 Local knowledge of the Metropolitan District of Quito

Local knowledge can be found in the MDQ, especially in the Metropolitan Development Plan of Quito 2012–2022, which has a frame of reference for ancestral knowledge included in the concept of “good living,” implemented through the National Development Plan (SENPLADES, 2009). “Good living” in the modern constitutions of Ecuador (2008) and Bolivia (2009) refers to *sumak kawsay*, a Quechua phrase derived from the ancestral Kichwa world view on life, which refers to the ideal and beautiful realization of the planet (*sumak*) with a dignified life of plenitude (*kawsay*); that is, seeking balance with nature to satisfy needs (“taking only what is necessary” with the intent to endure), and not only for economic growth (Dávalos, 2011).

The strategic plan was developed including technological, economic and social aspects (MDMQ, 2012b). The principles are oriented toward sustainable development, including the three aspects: social, economic and environmental (Placet et al., 2005). In the socioeconomic aspect, cultural identity is promoted, respecting differences (diverse Quito and with identity) and encouraging participation (participatory Quito). Equity (Quito equitable) and solidarity (Quito solidary) are also proposed. The environmental aspect has a specific principle (sustainable Quito) (MDMQ, 2012c). The results are a sign of social value, manifested in the high level of integration between the sectoral components and the different partial projects (MDMQ, 2012c).

The local knowledge of the territory was manifested in the factors deployed because of the evolution and development of the national plan (Anjos et al., 2013). This has contributed to environmental improvement and the integration of Indigenous peoples.

Human local knowledge manifested in different facts. For example, In the human capital that comes from universities, since they are a source of knowledge (Capó-Vicedo et al., 2013). The Metropolitan District boasted in 2014 the best universities

in the country, the only two offering doctoral degrees (FLACSO and Universidad Andina Simón Bolívar), and the oldest public university in Ecuador (Universidad Central). It also had several recognized private universities (Catholic and San Francisco, for example). These institutions were the basis for professional and cultural training. Traditionally, Quito's academic institutions have been considered less rigorous than those of other nearby territories, such as Lima or Bogotá. This academic weakness has favored the emergence of a very innovative NGO movement that has permeated the country's culture (Fdez-Jardón et al., 2016). The interrelationships between NGOs and universities have generated a new class of leaders and people in the MDQ. This issue in the MDQ and its implications for society are demonstrated in table 1. The MMDQ showed some capacity for leadership by being able to identify the need for a highly multidisciplinary team, systematize experiences in the context of administrative needs, coordinate and lead the institution, and create internal cohesion by supporting the perception of a shared identity among all in the institution. Interviewees manifest that *"the mayor's leadership has been crucial to the success of the plan"*. The learning capacity was shown in the strengthening of the City Institute as a thinktank for municipal policies, and in endowing this institution with staff and a flexible work structure with a training plan to constantly refresh its knowledge. This facilitates the acquisition of tacit knowledge and its conversion into explicit knowledge (MDMQ, 2010).

Structural local knowledge is shown in several issues. For example, in the transmission of knowledge through institutional memory maintained by the long tradition of existing municipal planning. *"Each work team prepared its successors"*. This can be seen in the recruitment of advisors from the previous government to ensure continued human local knowledge (Fdez-Jardón et al., 2016). The capacity of governance and its assumption by citizens are also part of Quito's sociopolitical culture. There is a shared perception between the municipal government and citizens that is reflected in participatory municipal development plans, the interaction of local administrations with citizens, and the promotion of public-private actions. *"We must pass on our work*

to the citizens." There is an environmental culture, as Quito was one of the first cities to introduce municipal environmental policies (during Jamil Mahuad's mayoralty), which have been maintained (Barrera, 2014). This culture encourages citizen participation, creating an atmosphere conducive to a culture of participation and decentralization, for example, with networks of citizen participation (Morales Gutiérrez, 2009). *"We set up communication networks to listen to people."* In addition, an effort was made to integrate technology into civil society, which is particularly evident in the digital agenda (MDMQ, 2012a). These cultural, organizational, and technological aspects are seen in the MDQ, as shown in Table 1.

Table 1 – Local knowledge indicators in municipal territories (MDMQ)

(Continued)

Aspects	Elements	Indicators
	Human	
Values and attitudes	Ethical behavior.	Personal trust relationships are highly valued (K. Gierhake 2014).
Training	The educational level of the population.	Professional training of the management team. Encourage training at all professional levels (K. Gierhake 2014).
	Professional experience.	Professional experience in multi-sectoral fields (MDMQ 2014a).
	Specialization in technical and management expertise.	There is no specific knowledge associated with the management of local products. It concentrates on the best universities in the country. Creation of the City Institute as a "thinktank" for municipal policies (MDMQ 2010).
	Entrepreneurship (risks, planning, leadership).	Leadership ability manifests itself in knowing how to identify the need for a highly multidisciplinary team (K. Gierhake 2014).
Capabilities	Professionalism (creativity, seriousness, sociability).	Ability to adapt experiences obtained abroad to the needs of projects in Quito (K. Gierhake 2014).

Table 1 – Local knowledge indicators in municipal territories (MDMQ)

(Conclusion)

Aspects	Elements	Indicators
Structural		
Cultural aspects	Cultural identity.	Good Living Plan (Dávalos 2011).
		Governance capacity and the expectation of having good living.
	Civic culture.	Culture of participation and decentralization (MDMQ 2011b). Encourage public-private collaboration.
		Shared perception between municipal government and citizens (K. Gierhake 2014).
	Concern for the environment.	Culture of concern for the environment as a consequence of Good Living Plan (Dávalos 2011).
Structural aspects	The intergenerational support structure.	Institutional memory (MDMQ 2014a).
	Organizational structure.	Structure to promote participation.
		DMQ organizational structure with the idea of achieving greater inclusion facilitates coordination (K. Gierhake 2014).
	Quality of products/ services (know-how).	Orientation toward commodities (Brenes, Haar, and Requena 2009).
Technological aspects	Levels of technology use.	Quito Tech (MDMQ 2014b).
	Social technology endowments.	Digital agenda.
		Technology integration as a support to civil society (MDMQ 2012a).
	Level of technology centers.	It does not manifest itself (K. Gierhake 2014).
Relational		
Image of the region	Location, as an attraction factor.	It does not manifest itself (K. Gierhake 2014).
	Knowledge of the territory outside of it.	Tourism promotion (Quito-Turismo 2014).
	Hospitality.	It does not stand out (K. Gierhake 2014).
Cooperation with external actors	Cooperation agreements entered.	Cooperation agreements with cities in other countries (MDMQ 2011a).
	Cooperation projects carried out and the number of partners.	International commitments with active participation (MDMQ 2011a).
Relations with other external agents	Associations of cities to which it belongs.	Participation in other international associations (MDMQ 2011a).
	Citizen relations.	Public space policies (Klaus Gierhake and Jardon 2016).
	Relations with public institutions.	Political support from the current government in the city (K. Gierhake 2014).

Source: the authors

Relational local knowledge includes relationships and an attitude of cooperation (see table 1). The MMDQ created cooperation agreements with cities in other countries, actively participated in international commitments or international associations (Barrera, 2014), and established collaboration relationships with neighboring territories. Relationships with the citizenry were evidenced in the policies of public space (Klaus Gierhake & Jardon, 2016), cultural development, and the promotion of the use of technologies, through the Digital Agenda and the use of the internet (MDMQ, 2012a) *"we listen to what the people tell us to improve the Project."* Relations with other national government institutions were shown by the current national government's political support for works in the city. The image of the territory was improved with the idea of promoting Quito's cultural development (objective 1.2-politics S1), boosting sustainable tourism and preserving the natural heritage of the area, improving accessibility to the people or institutions elsewhere, supporting productive municipal development with community agency, and specifying and ensuring the competencies of other entities of the territorial administration. For example, a Historic Center Rehabilitation Program was created to restore colonial houses, with attractions for the people and businesses (Quito Informa, 2012).

The interaction among the previous indicators proves the existence of a virtuous circle in local knowledge. Human local knowledge generates more structural local knowledge. For example, the interviews indicated that the key to the MMDQ's organizational reform was in the professional and human training of its leaders and officials. *"The figure of the mayor was essential to organize the change."* The basis of the environmental culture, citizen participation, and decentralization is found in the leadership capacity of the management team that helped create a shared culture. The transmission of experiences was achieved, largely, by the professional training and experience of the municipality's workers (MDMQ, 2014). *"Each work team prepared its successors"*. Human local knowledge generates more relational local knowledge. For example, the leaders' foreign-acquired professional training and language skills facilitated international relations; leadership and cohesion skills promoted relationships with

citizens; and workers' and leaders' experience in national politics facilitated relationships with the central and other regional governments that had been scarce (Barrera, 2014).

Structural local knowledge generates more relational local knowledge. For example, the interviews suggested that the existence of long-term planning enabled relationships with citizens, giving them security through established legislation; the participatory and decentralized culture also fosters relationships with citizens by involving them more in the management of the municipality. *"We set up communication networks to listen to people."* The environmental culture promoted international relations as a globally trending topic. The culture of internal cohesion facilitated informal agreements with the central government and other regional governments by finding consistent interlocutors who fostered trust (Todorovic & McNaughton, 2007). *"At all times we felt comfortable with the work we were doing."* Technology, in particular the digital agenda, promotes relationships with citizens by connecting them with the outside world (through the internet), or/and allowing remote work to complete projects (MDMQ, 2012a). Finally, the organizational structure facilitates a connection with citizens, the outside world, and governments by creating specific departments and offices for these functions (MDMQ, 2014). Structural local knowledge affects human local knowledge. The culture of the territory, which forms part of the structural local knowledge, conditions citizens' values and attitudes and, consequently, those of the team of people who work in the MMDQ. That is, it shapes the human local knowledge. Organizational learning facilitates people's learning. Organizational structures and technology foster worker training, and the use of organizational systems generates routines that make workers more efficient (Barrera, 2014).

The importance of relationships to generate knowledge and skills in human resources shows the effect of relational local knowledge on human local knowledge. For example, as the interviews showed, *"our relationships with the outside world helped enhance the training of the municipal leaders' team;"* relationships with citizens gave them more precise knowledge of specific needs, *"we listen to what the people tell us to improve ...,"* improving their perception of reality and leading to a more professional approach to their work.

Established relational local knowledge affects structural local knowledge. International relations improve the organizational structure through the experience and knowledge acquired in these relations. Citizen relations also help improve the organizational structure through citizens' input. Organizational learning is highly influenced by the knowledge and information acquired through relationships. Finally, although indirectly, technology investments are possible through relationships with the government that facilitate the financing of many of these activities (MDMQ, 2014).

4.2 Social value in the Metropolitan District of Quito

This process of interrelation between the dimensions of local knowledge has supported the municipality's income and investment capacity, which probably facilitates the implementation of the reform plans established, showing the economic aspect of sustainable development. For example, the inauguration of a new airport, the construction and expansion of regional interconnection roads, projects to improve internal mobility and the Metropolitan Plan for Territorial Planning provide the basis for interrelating these aspects (MDMQ, 2014b). The environmental and social aspects are present in the different indicators by their association with environmental, cultural and social innovation results. Thus, the three aspects of sustainable development appear in the implementation process of the development plan in the MDQ (MDMQ, 2012c).

The management of the dimensions of local knowledge affects social value. Both the interviews and the observation showed that the success of the organizational reform process in the constitution relied on the integration and leadership capacity of Mayor Barrera and the training of officials: *"The figure of the mayor was essential to organize the change."* There was a charismatic and authoritarian leader, and authoritarian leadership increases tacit local knowledge-sharing (Chen et al., 2018). Charismatic leadership has a strong impact on the climate of psychological safety (Shao et al., 2017), which facilitates tacit knowledge-sharing and use. The mayor's leadership facilitated the efficient coordination of a team of experts.

Table 2 – Local knowledge and social value effects

Information	Source
Urban agriculture with 211 new agricultural and livestock production units implemented, integrating 1,215 people into the urban agriculture training process.	(Conquito 2014)
703 environmental and productive integration fairs were held.	(Conquito 2014)
49 agricultural production units obtained international certification BCS in organic production.	(Conquito 2014)
Participatory management was promoted with 50 workshops, forums, and conferences with a large attendance (around 5,000 people).	(MDMQ, 2014 b)
The Zoning Administrations interacted with around 2,000 community organizations and in connection with companies, promoting an environmental culture (Green and Clean Quito Event, recognition to companies for their actions in favor of the environment; etc...).	(MDMQ, 2014 b)
Popular and Solidarity Economy (EPS) fairs where small businesses are directly benefited. (data indicated that 30 to 40 per fair)	(MDMQ 2014b)
The QuitoTech project supports 160 technology-based projects.	(MDMQ 2014b)
Financial support was provided for 500 cultural projects.	(MDMQ 2014a)
4,628 cultural events were held in public spaces with more than 10 million attendees.	(Quito-Cultura 2015)
The Secretariat of Productive Development carried out four projects on industrial parks and production areas.	(MDMQ 2014a)
The Secretary of Productive Development promoted industrial areas, such as the Itulcachi Public-Private Park.	(MDMQ 2014a)
The Secretariat of Productive Development provided advisory services to 412 industries	(MDMQ 2014a)
The municipal development agency CONQUITO strengthened training in job skills and entrepreneurship for 8,000 jobs.	(Conquito 2014)
High citizen participation in environmental activities (421,050 citizens in different actions in support of environmental management; 157,050 Participation Events; 170,000 Good Environmental Practices, 171,400 in reforestation, and 10,000 in aspects associated with Climate Change).	(Quito-Cultura 2015)
The Secretariat of Productive Development designed a management model for the Popular and Solidarity Economy.	(MDMQ 2014a)
8 international recognitions with awards; 33 twinned cities; belongs to 17 city networks and participates in 5 international commitments.	(MDMQ 2014a)
The growth rate of international arrivals has averaged 9% since 2007.	(Quito-Turismo 2014)
18.1% of households have at least one laptop computer, up 9.1% from 2010. While 27.5% of households have a desktop computer, up 3.5% from 2010.	(INEC 201c5)
28.3% of households nationwide have access to the internet, up 16.5% from 2010. In urban areas, the increase is 20.3 points, while in rural areas it is 7.8 points.	(INEC 2015)

Source: the authors

The training of officials led to decisive contributions from the “City Institute” as an entity of applied science supporting municipal policies to provide such training (MDMQ, 2010). The professional preparation of the coordination cabinets was essential to provide information for all of the secretariats, facilitate sectoral coordination, and monitor the decisions taken (Barrera, 2014) (see table 2). The management of local structural knowledge, in its triple aspect of culture, organization, and technology, was essential to carry out the MDQ’s social improvements. For organizational reform to function, mechanisms were introduced to follow up on the decisions taken through the Planning Secretariat and coordinate among the different secretariats. To make better use of institutional memory, personnel from the previous municipal government were integrated as advisors to the Mayor’s Office (Barrera, 2014). Adaptable teamwork facilitates the exchange and use of knowledge (Thomas & Gupta, 2022). The *“coordination and integration capacities of the team of advisors were also essential for the success”* of the innovation associated with social improvements as they established the administrative structure and coordinated many of the functions of the secretariats.

The interviews showed that the cultural aspect was essential for land-use planning reform, manifesting *“we have to re-establish the centrality of the human being by incorporating its true territorial dimension.”* For example, the reform includes the triple objective of sustainable development (Solidarity City, City of Opportunities, Smart City) supported by cultural aspects, such as the intention to preserve, maintain and protect the natural heritage; improve environmental quality (objective 3.1-politics S1); and mitigate the effects of climate change. The right to the city as a space for living and coexistence is also an indicator of a culture of social concern (objective 1.1-politics S1). This culture is also shown in the effort to strengthen citizen rights with characteristics of universality, accessibility, and synergy (objective 1.1-Politics M1). The organizational culture of the municipality affects tacit local knowledge-sharing (Suppiah & Sandhu, 2011), increasing the use of local knowledge. In particular, the culture of decentralization (adhocracy) facilitates the use of local knowledge (Suppiah & Sandhu, 2011). This culture manifests

in different parts of the project. Firstly, it promotes democratic access to the benefits of science, technology, and popular and ancestral knowledge (objective 3.2-politics S3). Secondly, it supports the dialogue of knowledge to close territorial, social, cultural, and economic gaps in accessing and using health services (objective 3.3-politics S3). Thirdly, it articulates the educational offer for territorial development and the promotion of pedagogical innovations in MDQ establishments, emphasizing the development of capacities to produce knowledge and creativity (objective 5.4-politics A5). Fourthly, it promotes decentralized cultural management and the consequent equity of territorial interventions that generate easily accessible cultural centers and reactivate social, cultural, and productive capital that encourage identity building at the neighborhood and district levels (objective 1.2-politics S1). Finally, it supports equitably recovering the value of the sociocultural use of public space (objective 2.2-politics S2). As empirically observed and highlighted by the interviews, the culture of collaboration was essential to achieving the digital agenda (MDMQ, 2012a).

The technology adapted to knowledge-sharing was developed with Digital Agenda. The model for the development of this agenda was the collaboration between people, groups, institutions, and companies in the territory. This facilitated the exchange of ideas and experiences, making the social improvement process more efficient, fluid, and open. Its development required the use of technology, and technological knowledge was somewhat responsible for the success of this development as the agenda incorporates information and communication technologies in everyday life to improve both citizens' quality of life and their development capacity (objective 2.1-politics S2).

Management of local relational knowledge appears in multiple facets of the social value of the MMDQ, but it is best manifested in the process of dissemination and connection with other territories. The interviews clarified that different *"international partners were the potential basis for a multitude of external communication channels"* (such as the South American Cities Network, Pact of Mexico, Pact of Quito, and Sister Cities, among others) (Gierhake & Jardón, 2016). The empirical observation affirmed

that relations with citizens were essential to the collaborative model of the Digital Agenda and helped the policies of public space, cultural development, and the use of technologies to succeed. The interpretation of public spaces by the Barrera Administration has gone beyond the purely economic level to become an instrument of territorial cohesion at the neighborhood level, promoting dialogue, communication, and neighborhood responsibility (Gierhake & Jardon, 2016). This management of relational local knowledge increased social value (see table 2).

5 DISCUSSION AND CONCLUSIONS

The research seeks to verify that the development of the Quito strategic plan carried out in 2012 and put into practice by Mayor Barrera was a success, generating social value, thanks to the knowledge of how to use and integrate the existing local knowledge in the territory. In the development of the strategic plan, aspects of knowledge management are shown that facilitate the sharing and use of tacit and explicit local knowledge existing in the territory. The paper focuses especially on the tacit knowledge part since the local knowledge in this municipality combines indigenous knowledge with the knowledge acquired through traditions imported mainly by Spanish immigrants.

This paper analyzes the management of the different elements of local knowledge present in the territory of the metropolitan district of Quito from an intellectual capital-based perspective (Martín-de-Castro et al., 2010) to increase the social value of the territory.

The classical division of intellectual capital into human, structural and relational dimensions makes it possible to define different dimensions of local knowledge. There are multiple indicators of local knowledge in the territory. For example, the human dimension includes the existing training centers in the territory, the MMDQ leaders' education level, the mayor's leadership capacity, and the creativity and know-how of the team participating in the project. The structural dimension includes the organizational structure and organizational change implemented by the municipality, the environmental culture, the participatory system, and the professionalization of

management or the use of technology. The relations with other cities, cooperation with other municipalities and the central government, and integration of the “good living” plan indicate the relational dimension and had a major social impact.

These intellectual capital results are in line with the previous literature on national (Seleim & Bontis, 2013) and regional intellectual capital dimensions (Lapygin & Makarov, 2019).

This paper analyses the micro foundations of the local knowledge management, showing that the internal dynamics of local knowledge require interrelated human, structural, and relational local knowledge. The interaction among the different dimensions of local knowledge was tested according to previous literature on intellectual capital (Kong, 2017; Redkina et al., 2023). This process generates a virtuous circle of local knowledge that is a possible source of development, especially in urbanized areas with territorial characteristics that could be strengthened through cultural identity and building the pillars of development around it (Anjos et al., 2013).

The results confirm previous studies on tacit knowledge-sharing applied to local knowledge. Firstly, they confirm that charismatic and authoritarian leadership facilitates the sharing and use of tacit knowledge (Shao et al., 2017), thus ensuring that the results of the strategic plan increase the social value of the territory. Secondly, they confirm that the existing organizational culture in the municipality is key to sharing tacit local knowledge according to (Suppiah & Sandhu, 2011). Thirdly, the results show that the municipality knew how to use social networks to share existing knowledge in the territory, thus generating greater social value according to (Panahi et al., 2013).

The findings contribute to the fourth stage of research on intellectual capital by suggesting that local knowledge is a source of social value, confirming previous studies (Pedler, 2002; Quartey & Wells, 2017). Gravili et al. (2021) analyze the effect of intellectual capital to create social value in the healthcare industry. This paper confirms these findings by analyzing the effect of local knowledge (local intellectual capital) on the creation of social value in a municipal district. In addition, this paper shows the importance of each

dimension of local knowledge for increasing social value. For example, this paper shows the effect of human local knowledge manifested in MMDQ leaders' education level, the mayor's leadership capacity, and the creativity and know-how of the team participating in the project on social value, according to Altinay et al. (2016). The organizational change imposed on the municipality, the environmental culture, the participatory system, and the professionalization of management increases social value, according to previous papers (Nezam et al., 2016). Relations with other cities, cooperation with other municipalities and the central government, and integration of the "good living" plan also have social effects. These findings on relational capital align with previous literature about cooperation (Felzensztein & Gimmon, 2009).

This paper shows the causes of this process of increasing social value in Quito. Unlike (S. Chen & Choi, 2004), the research shows that since there are no universities or other centers that specialize in territorial processes and administrative modernization, nor are there international technical cooperation activities, the concept of local knowledge has been used to draft and apply the strategic planning of Quito. On this basis, by adding studies on similar cases, a proposal that facilitates sustainable territorial growth by adjusting public interventions to the territory can be developed (Belletti et al., 2017). These results contribute to the discourse on new forms of local governance and allow some methodological conclusions that help to put scientific concepts for sustainable development into practice in developing countries (Deslatte et al., 2022).

Local knowledge is adapted to the holistic management of municipalities and small territorial entities, which changes the territorial reference and facilitates decentralization (Gierhake & Jardon, 2017). In combination with the concept of local knowledge at the level of a municipal institution and its territory, this research adds value to the Geography-of-innovation approach because it leaves open the question of the other conditioning factors of a creative environment (Delgado & Leite, 2011; Gierhake & Jardon, 2017), exogenous and endogenous (Kiese, 2004), and their relationship with local knowledge. The MMDQ demonstrates new, positive characteristics: the territorial-environmental development of a large metropolis can be influenced.

The results suggest practical implications for management in local governments and other territorial institutions. Firstly, they point out the importance of authoritarian and charismatic leadership to facilitate the integration of existing local knowledge and use it to improve the territory according to Shao et al. (2017). Consequently, institutions need charismatic leadership to apply a successful strategic plan. Secondly, they suggest the need to create an organizational culture that facilitates the sharing of existing local knowledge, transmitting it to future generations, and leveraging it to increase social value. Therefore, institutions should support their actions on a common culture, possibly a clan culture, or adhocracy culture according to Suppiah and Sandhu (2011). Finally, they suggest the importance of making use of technological aspects, for example, through information technology (Grandage, 2022), and engaging the management with stakeholders and beneficiaries (Bhardwaj et al., 2023), which leads to greater citizen participation and greater integration thereof in municipal management in a way that encourages knowledge-sharing by the people who live in the territory.

The local knowledge of strategic planning in DMQ shows a series of aspects to improve social resilience according to (Champlin et al., 2023): There is a sound economy that strengthens and diversifies an environmentally sustainable economy and trade; a “safe territory” is structured, a strategic orientation to avoid new risks is analyzed; all development plans for the DMQ, in particular the spatial development plan, should incorporate resilience, because they ensure continuity, promote planning according to the objectives of resilience and develop mechanisms for citizen participation (Jones & Russo, 2024).

This study has some limitations. Firstly, it focuses specifically on the most representative institution of the MDQ, its municipality, although some social interactions with the territory are analyzed and some specific aspects of the territory are suggested. Future work should include other institutions. Secondly, this study focuses on a single case, so its conclusions should be generalized with caution. Finally, quantitative information on the aspects studied in this work is absent or very limited, so most of

the statements are based on the results of interviews, the researchers' observations, or local actors' reports. This may limit the validity of the results. However, the work suggests fascinating aspects for future research. Metropolitan areas could soon be key actors in solving the mentioned problems (Intendencia de Montevideo et al., 2015), as they represent an interesting potential for social, territorial, ecological, and economic changes. These territories could serve as liaisons between development trends at the global level and processes at the local level; in other words, a territory could create innovations to improve social value by being situated between local and international knowledge (Wehrhan & Haubrich, 2010).

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Authors

1 – Carlos Maria Jardon

Institution: University of Vigo – Vigo, Galiza, Espanha

Professor of Econometrics at Department of Applied Economics at the University of Vigo

Orcid: <https://orcid.org/0000-0003-0888-2055>

E-mail: cjardon@uvigo.es

2 – Klaus Gierhake

Institution: University of Giessen – Gießen, Hesse, Alemanha

PhD in Geography Marburg University (Germany)

Orcid: <https://orcid.org/0000-0002-8682-673X>

E-mail: gierhake@gmail.com

3 – Xavier Martinez Cobas

Institution: University of Vigo – Vigo, Galiza, Espanha

PhD in Management in University of Vigo

Orcid: <https://orcid.org/0000-0001-5598-8392>

E-mail: xmcobas@uvigo.es

Contribution of authors

Contribution	[Author 1]	[Author 2]	[Author 3]
1. Definition of research problem		✓	✓
2. Development of hypotheses or research questions (empirical studies)	✓	✓	
3. Development of theoretical propositions (theoretical work)	✓		
4. Theoretical foundation / Literature review	✓	✓	✓
5. Definition of methodological procedures	✓		✓
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