Social capital in a social network: Curitiba, a city for cars
Capital social numa rede social: Curitiba, uma cidade para os carros

Fernanda da Rocha Salles[1] , Marcelo Limont[2] , Tatiana Tucunduva Philippi Cortese[3,4] , Valdir Fernandes[1]

ABSTRACT

This article is part of the studies of the Sustainability Assessment Center (NIPAS), to analyze Curitiba's social capital, expressed in the Colab digital social network. Colab is a social network accessible through its own account or Facebook. Its role is to provide citizens with spaces for interaction with public authorities or to publicize problems, proposals, and evaluations on aspects of cities. Thus, the research question arises: What is the social capital expressed in this social network? The methodology involved cataloging all Colab data, categorizing it according to the analytical model, and characterizing social capital. The results show that males aged between 30 and 49 interacted the most. Inspections prevailed among the three categories of Colab, inspection, proposals, and evaluations. This demonstrates that the expression of social capital is limited to occasional acts of dissatisfaction about the municipal public authority's performance. In this case, the predominant themes are related to driving, such as parking, traffic signs, and road problems. About the macro categories of social capital, the interactions can be framed in "set of norms and values," "citizenship," and "sense of belonging". The main conclusion is that although Curitiba is a city famous for its collective transportation, the predominance of social capital expressed in Colab is related to the automobile.

Keywords: digital citizenship; urban sustainability; smart city; cyberspace; Colab.

RESUMO

Este artigo faz parte dos estudos do Núcleo de Avaliação de Sustentabilidade (NIPAS) e tem o objetivo de analisar o capital social de Curitiba, expresso na rede social digital Colab. Esta é uma rede social acessível por conta própria ou do Facebook. Sua função é proporcionar aos cidadãos espaços de interação com o poder público ou divulgar problemas, propostas e avaliações relativos a aspectos das cidades. Ao se observarem as interações no Colab, surge a questão de pesquisa sobre qual capital social é expresso nessa rede social. A metodologia envolveu a catalogação de todos os dados dessa rede, de acordo com o modelo analítico e caracterizando o capital social. Os resultados mostram que o sexo masculino com idade entre 30 e 49 anos é o que mais interage. Entre as três categorias do Colab — fiscalização, propostas e avaliações —, prevaleceu a fiscalização com mais interações. Isso demonstra que a expressão do capital social se limita a atos pontuais de insatisfação com relação à atuação do poder público municipal. Nesse caso, os temas predominantes estão relacionados a aspectos como estacionamento, sinalização e problemas viários. Em relação às macrocategorias de capital social, as interações podem ser enquadradas em "conjunto de normas e valores", "cidadania" e "sentimento de pertencimento". A principal conclusão é que, embora Curitiba seja uma cidade famosa pelo transporte coletivo, o predomínio do capital social expresso no Colab está relacionado ao automóvel.

Palavras-chave: cidadania digital; sustentabilidade urbana; cidades inteligentes; ciberespaço; Colab.

[1]Universidade Tecnológica Federal do Paraná – Curitiba (PR), Brazil.

[2]Universidade Positivo – Curitiba (PR), Brazil.

[3]Instituto de Estudos Avançados, Universidade de São Paulo – São Paulo (SP), Brazil.

[4]Universidade Nove de Julho – São Paulo (SP), Brazil.

Correspondence address: Valdir Fernandes – Universidade Tecnológica Federal do Paraná – Rua Deputado Heitor Alencar Furtado, 5000 – Cidade Industrial – CEP: 81280-340 – Curitiba (PR), Brazil.

E-mail: vfernandes@utfpr.edu.br

Introduction

Over the past 50 years, contemporary society and the way of life on the planet have shifted from rural to urban. Today, 55% of the world's population lives in urban areas, projecting 68% in 2050 (United Nations, 2017). In Brazil, this trend is corroborated, with around 76% of the population concentrated in urban areas (IBGE, 2017).

This process of metropolization generates a concentration of economic activities and essential services (Polèse and Shearmur, 2004), producing new urban morphologies (Moura, 2012), with environmental and social problems, poverty, social and territorial segregation; violence; crime; deterioration of the environment, and quality of life (Fernandes and Vieira, 2021). The metropolises are, therefore, a significant challenge to management and metropolitan governance that involves different social actors, scales, territorial and functional spaces, and shared planning actions that can intrinsically reconcile socio-economic and environmental development demands (Frey, 2012; Carbone at al., 2020).

One of the fundamental elements of management processes, and even more so of metropolitan management, is social capital, in this case, associated with territoriality (Salles et al., 2017). Social capital, in turn, portrays the existence of a particular set of informal values or norms shared among the members of a group that allows for cooperation between them. In general, social capital can be defined as "the existence of a certain set of informal values or norms shared between members of a group or a community that allows cooperation" (Fukuyama 1995, pp. 28).

Both social capital, as well as territoriality, are structured by social, cultural, and economic networks intrinsic to each territory, and, more recently, with the advent of virtual social networks, linked to specific groups of interest that are interconnected, dependent, or independent of the physical territory, thus constituting virtual territoriality.

The growth of cyberspace is guided by three fundamental principles, as described by Lévy (1999):

- interconnection: referring to the global computer infrastructure and the set of information that it houses (the extension of cyberspace);
- creation of virtual communities in the form of networks: these communities being defined as an open, deterritorialized and transversal field that favors a collective and participative debate. Its development is directly supported by the growth of interconnection;
- collective intelligence: refers to the spiritual perspective of cyberspace, its ultimate purpose, and endowed with a capacity for rapid and creative learning.

For the author, collective intelligence is the mode of realization of humanity favored by cyberspace. These communities are "built on affinities of interests, knowledge, projects, in a mutual process of cooperation and exchange" (Lévy 1999, pp. 127). The author also states that digital social networks enable a mutual space for cooperation and exchange, potentiating these fundamental principles in learning and social construction.

In the same sense, as an essential part of this process of reconfiguration of societies according to the new technologies, Daniels (2002) already pointed out that digital information and communication technologies (ICT) have become, in a short space of time, one of the basic dimensions of building a modern society. Because of that, they became a founding element of social processes (Noor-Ul-Amin, 2013) and part of human condition (Philippi Jr. et al., 2017).

Based on this process, in the analysis undertaken herein, cyberspace is used as a source of information about the social capital of a territory (Silva and Fernandes, 2022), Curitiba city. What is sought is to understand the social priority expressed on the social capital of a metropolis, from the mobilization through a digital social network. From this analysis, we examine the characteristics of this social capital, establishing the relationship between the interactions and the priorities expressed by the users.

Colab is a social network for citizenship, created in 2013 at Porto Digital — Recife Technology Park (State of Pernambuco), whose purpose is to connect citizens and cities to oversee problems, outline project proposals and evaluate public services. Colab is an environment of interaction between users via the web (www.colab.re), smartphone applications, and an administrative environment, where a public entity can manage the demands indicated by the citizens. It is currently available to all cities in Brazil, with more than 90 public entities using its network. In a short period, it has already recorded an average of 12.3 collaborations per hour in a universe of 21,000 impacted users (Colab, 2016b). Colab was awarded the App My City Award and voted the Best Urban Application in the World in 2013, sharing the same scope with other applications, such as Cidade Legal (Brazil), Buzz Journey (Israel), and Public Stuff I Change in My City (India).

The hypothesis guided by this analysis is that, although the city is known in marketing pieces as ecological, the car culture greatly influences citizens' priorities. Based on this hypothesis, the purpose of the study was to analyze the social capital expressed by the citizens of Curitiba through the digital social network Colab.

This analysis converges on the concept of social capital with the debate on digital citizenship in the context of territorial sustainable development challenges. Digital citizenship is a phenomenon emerging from the new configurations of social spaces in the digital world, according to a synthesis made by Fernández-Prados et al. (2021).

Theory

The trajectory of the social capital concept

The concept of social capital is polysemous, with different meanings and theoretical orientations, and in the last decade it was the intense focus of studies and debates by Bourdieu (1980, 1985), Bourdieu and Wacquant (1992), Putnam (1995), Nahapiet and Ghoshal (1998), Portes (1998), and Franco (2001).

The genealogy of the concept of social capital, according to Franco (2001) and Putnam (2000), can be attributed to Alexis de Tocqueville (1998), who was the first to describe the phenomenon by observing and capturing the capacity of individuals to participate in voluntary actions. Later, Lyda Hanifan (1916) coined the term social capital in his work, and Jane Jacobs (2000) inaugurated its use from a sociological perspective. Regarding social capital as a developmental approach, the sociologist Ivan Light (1972) and the economist Glenn Loury (1977, 1987) produced pioneering work. In the 1980s, the concept of social capital was consolidated by the sociologists Pierre Bourdieu (1980, 1985) and James Coleman (1988, 1990).

According to Franco (2001), Tocqueville (1998) coined the term "civil government" to describe the capacity of society to generate order spontaneously through cooperation. For Franco (2001), the "civil government" would be the direct ancestor of the concept of social capital. For Brandão (2011), the "spirit" of social capital originates from the classical nineteenth-century social theory in which Stuart Mill, Emile Durkheim, Georg Simmel, and William Kornhauser emphasized the importance of an organized civil society (voluntary associations) for the consolidation of democracy.

This theoretical approach to social capital still presents the concept in two aspects: in the first, social capital is related to the individual, being subject to accumulation by the issue in question; in the second, social capital is considered a public good, permeated by the relationship between people and groups, an element belonging to a community or society whose synthesis represents the basis of collective action (Furlanetto, 2008).

Bourdieu (1985), for example, shares these approaches by suggesting that social capital focuses on networks of relationships and mutual recognition, specifically on network membership in terms of access to resources and opportunities. For the author, where there is more social capital, there is a better use of economic resources (of economic capital) and human skills (of cultural capital). Coleman (1988) has addressed the concept of social capital more broadly, examining the role of interactions within families on individual outcomes (educational level, role of community relations, norms, and sanctions) and group outcomes. For the author, social capital increases the resources available to individuals who are immersed in relationships, a fact that favors the performance of actions that could not be performed in an individualized way. In a comparative analysis between the theories of Bourdieu (1985) and Coleman (1988), De Aquino (2000) identifies that, for both, the maintenance of social capital depends on the continuous activation of social relations connected to it, and social capital fades if not used.

Complementarily, Putnam (1995) approaches social capital as something that operates at the macro and medium levels of society, emphasizing that social capital is a public good, and defines it in terms of networks of civic engagement, trust, and norms of reciprocity. In this historical context of collective involvement of societies, Fukuyama (2002a) believes that social capital emerges as a cooperative arrangement, where the actors are positioned in the defense of their interests and in the construction of collective actions.

Advancing the theoretical discussion of social capital, Nahapiet and Ghoshal (1998) propose a classification of the concept from three dimensions that, in practice, arise interconnected:

- structural, which deals with the patterns of connections between different actors;
- relational, which refers to the potential ties built between different actors;
- cognitive, related to the resources that provide representations, interpretations, and a system of shared meanings.

Approximately, Woolcock (2001) delimits dimensions of social capital as bonding, which represents a close relationship with strong ties between people who act in similar situations; bridging, which represents weaker ties between people, such as "loose" friendships, co-workers, business partners and acquaintances; and finally linking, which represents connection and linkage, being hierarchical relations established by people in different situations, who are outside the community, in which there are different levels of power. Halpern (2008) also appropriates this delimitation to refer to the main functions of social capital.

Also, in the context of the delimitation of social capital, Grootaert et al. (2003) currently uses the following dimensions to classify the concept with a view to the process of its operationalization:

- social groups and networks;
- trust and solidarity;
- collective action and cooperation;
- inclusion and social cohesion;
- information and communication.

The tools used to measure social capital include the Integrated Questionnaire to Measure Social Capital (IQ-MCS) prepared by the World Bank (2003); Social Capital Questionnaire, New South Wales Study (1998); World Values Surveys (WVS), developed in 2005-2006; and the Social Capital Questionnaire, from the Nucleus of Population Studies (Nepo) of the State University of Campinas (Unicamp) (WVS, 2010; NEPO, 2015). When it comes to measuring social capital from instruments of greater complexity, 17 systems and models of social capital indicators were mapped within the Sustainable Territorial Development Indicators Model (Kauling et al., 2018; Silva et al., 2020). The historical context in which these instruments begin to emerge dates back from the end of 1970, coinciding with the worldwide discussions involving the concept of sustainable development (Fernandes et al., 2021). Since then, the derivation of these measurement instruments has been influenced by interdisciplinary approaches involving the natural and social sciences (Fernandes and Rauen, 2016; Fernandes and Philippi Jr., 2017).

Amid this miscellany of conceptual derivations, classifications, and instruments for measuring social capital, the constitutive definition of the concept that approximates the theoretical discussion supported by this analysis is that proposed by Fukuyama (1995, pp. 28), in which

social capital can be defined "simply as the existence of a certain set of informal values or norms shared among the members of a group that allows co-operation between them." Empirically, the network arrangement materializes this concept's operationalization and explicitly the role of social capital as an instrument of governance.

Digital social networks as an expression of social capital

The importance of social capital is maximized by the intense and increasing use of new communication technologies, mainly digital social networks. In this context, digital social networks are specifically essential and relevant for the promotion of new citizenships of the digital age as a democratic channel of participation and collaboration of society aiming to contribute to the strengthening of a just and solidary society (Fernandes, 2021; Fernández-Prados et al., 2021).

The development, expansion, and growth of digital technologies, the Internet, and mobile telephony have favored profound changes in political forms at the global level (Vercelli, 2012). In the context of participation levels and digital social networks, Li (2010) proposes the "Pyramid of the engagement of social media", in which at the base of the pyramid are the users who observe, then those who share, those who comment, those who produce content, and finally at the top of the pyramid, the curators/ambassadors.

According to Giaretta and Di Giulio (2015), regarding applications for citizenship and participation, the following applications stand out: Colab, Cidadera, Legal City in Brazil, Mobile Seva and I Change My City (India), Dubai Police App (Dubai), Smart Santander (Santander) and City Sourced — Honolulu 311 (Hawaii), Buzz Journey (Israel), Citizens Connect (Boston) and Public Stuff (United States). The author observes the innovative potential of the applications, which facilitate political-social engagement, revealing the users' perceptions about the issues in the cities, enabling engagement and inspection. According to the author, these perceptions arise from publications posted by users of the applications, which can identify and report problems in a city with the necessary details, such as the indicative of location, description, and signaling of potential actions that could solve each issue. Such movement of users mobilizes the municipal authorities to solve these city problems.

As Silva and Policarpo (2014, pp. 30) stated, "Colab has established itself as a platform capable of integrating citizens into their immediate surroundings and based on the support of bodies responsible for promoting improvements in the city."

Fernández-Prados et al. (2021) highlight the needed for more studies to analyze digital citizenship assessment. According to the authors, there is not yet a consensus about the tools and concepts. That is why they highlight that it is necessary to:
- clarify the citizenship theory model under consideration;
- explain what can be found with instruments that claim to assess the same construct;
- expand the study sample as far as possible in the general population;

- observe the necessary methodological rigor. In the same sense, they point out that constructing a consensus around the digital citizenship concept is also urgent.

We are facing virtual territories that have economic, cultural, and political characteristics, and all the other territoriality reflexes exposed by Albagli (2004). Therefore, it is possible to affirm that the virtual society is a cybernetic territory that has constantly grown, transforming values, customs, cognition, and the human condition itself, as evidenced by Fernandes (2021), and that all these aspects are expressed and constitute a digital social capital.

Case study profile: Curitiba and the Colab interface

Curitiba has about 1.9 million inhabitants in a territorial area of 435,495 km^2, strictly urban (with a Degree of Urbanization of almost 100%), an aspect that attributes to its position as a city with a greater demographic density than the State of Paraná, being the 22nd in comparison to the national context, with 4,402.31 inhabitants per km^2. It presents a Population Growth Rate of 0.99%, above the state average of 0.89% (IBGE, 2018; IPARDES, 2018). Its Municipal Human Development Index (IDHM) is 0.823, whose classification is the final statement, being considered very high, between 0.800 and 1. In the ranking of Brazilian municipalities, it occupies 10th place (United Nations, 2017). 47.7% of the population is male, and 52.3% is female.

This profile of urbanization in Curitiba assigns differentiated challenges to public management, especially about urban mobility, since the totality of its fleet of vehicles, for example, is 1,401,153, where cars correspond to 68.44% of this total (958,868 vehicles). Adding to motor vehicles and other types of individual motor vehicles, such as motorcycles, pickup trucks, and trucks, this percentage increases to 89.72% (1,257,176 vehicles) (IPARDES, 2018). Establishing a direct relationship between this number and the City's Estimated Population data in 2018, which is 1,917,185 (IBGE, 2018), Curitiba presents an approximate proportion of 0.7 individual motor vehicles for each inhabitant.

In addition, even though Brazil has a national urban mobility policy (NUMP), Federal Law no. 12,587/2012 (Brasil, 2012), the country's public transportation infrastructure is deficient. It lacks tools for evaluating this policy (Cavalcanti et al., 2017). The principle of NUMP is to guarantee universal accessibility for citizens, considering the sustainable development of cities and the search for efficiency, efficacy, and effectiveness in the provision of urban transport services. Therefore, NUMP has a guideline to seek integration with other public urban planning policies and among the urban mobility services offered. Among itsgoals, the following stand out: to improve urban conditions related to accessibility and mobility; and to consolidate democratic management as an instrument and guarantee for the continuous construction of the improvement of urban mobility (Brasil, 2012).

In the case of Curitiba, the public transportation infrastructure is in the vanguard compared to other Brazilian cities precisely because of its characteristic of solid integration between the services offered. However, it cannot satisfactorily meet the population to the point of becoming preferential concerning the use of individual motor vehicles. This represents a contradiction probably due to the lack of integration between urban planning policies and education for sustainability.

Regarding the Colab digital interface, which can be accessed through your mobile application (AppColab) or directly through the website, we highlight some screenshots that show its main tools. Figure 1 shows three screens of AppColab, being:

- the first with the user's profile and the related city;
- the second presents the three interaction categories (inspection, proposals, and evaluation), this being the main interaction screen

with the user, as it is from there that the data and information are inserted in the corresponding category;
- the third screen shows the location of all posts in each category already made by users, including their spatial location on a city map.

The interaction dynamics start with the user choosing one of the three categories, providing details, identifying the location, inserting a related photo, and finalizing its publication. Other Colab users can support, comment, and share the publication. Municipal governments respond to these publications to indicate measures taken to resolve the problems addressed or even respond to publications indicating new interactions. The infographic (Figure 2) represents the flow of the relationship between the citizen and the public agency in the Colab network.
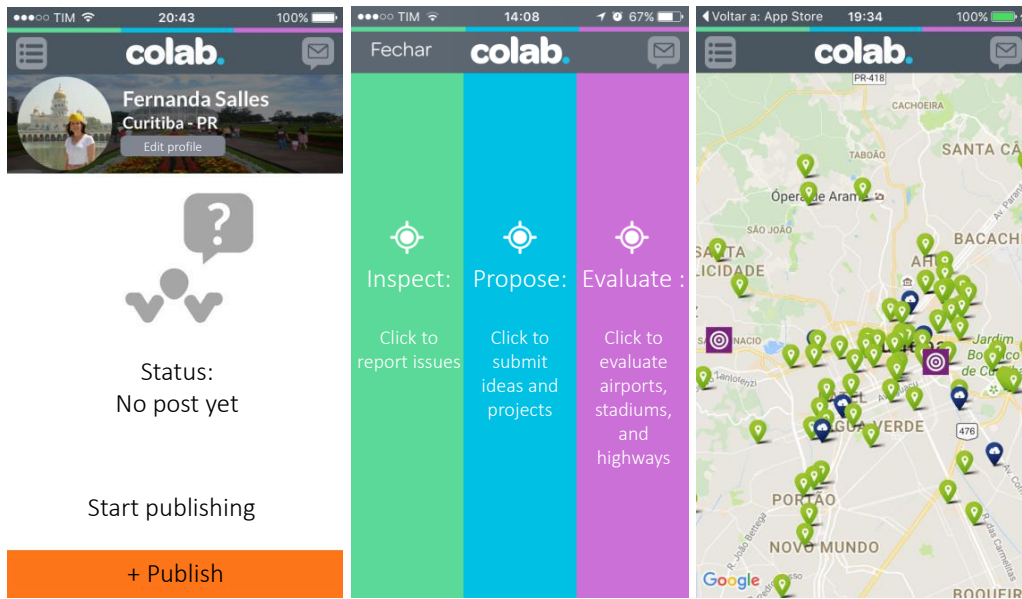

Figure 1 – Screenshot of AppColab home screens.
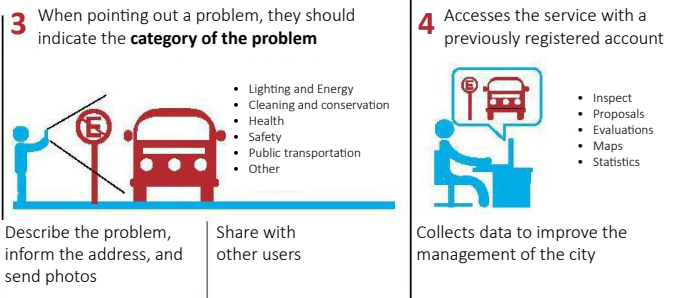Source: Colab (2016b).

Figure 2 – Infographic of AppColab.
Source: Mans (2015).

Methodology

This research has an interdisciplinary approach, characterized as analytical and descriptive, with a specific case study. This involved documentary analysis of primary and secondary data (Lakatos and Marconi, 2010). The primary data used in the study consists of the information declared by Colab users on their website or cell phone application. Secondary data, derived from the documents of research institutes, were used to complement the Colab information.

We used the content analysis technique proposed by Bardin (2011) to select and classify documents. The reference documents selected included:

- Colab data in the inspection, proposal, and evaluation categories, published in January 2017 on the virtual platform;
- technical and diagnostic reports of the Curitiba Metropolitan Region (CMR), published by the Coordination of the Metropolitan Region of Curitiba (COMEC) and by bodies linked to the state government (the Secretariat of State for Urban Development-SEDU, Paraná Department of Traffic-DETRAN);
- technical reports published by institutes and research centers active in the city (the Institute of Research and Urban Planning of Curitiba-IPPUC), state (the Institute of Paraná for Economic and Social Development-IPARDES), federal (the Institute of Applied Economic Research-IPEA and the Brazilian Institute of Geography and Statistics-IBGE) and international (the Economic Commission for Latin America and the Caribbean-ECLAC and the Department of Economic and Social Affairs, Population Division of the United Nations). The information in these technical reports was used as a reference to characterize the city of Curitiba and its social capital.

The research of this study followed the model of research in social sciences proposed by Quivy and Campenhoudt (2005), which consists of a process of rupture from exploration of the subject and rupture with preconceived ideas and false evidence; construction of an organized conceptual system, development of problematization and analysis model, verification, data collection and analysis, and the consequent emergence of results. The description of how the data was analyzed is presented ahead.

Data collection

As in Quivy and Campenhoudt (2005) and complementarily in Marczyk et al. (2005), Lakatos and Marconi (2010), Bardin (2011), and Minayo (2015), the following collection and analysis procedures were performed:

- Procedure 1: Identification of Colab usage data, available at the Colab base, by the municipality of Curitiba, in the categories: inspection, proposal, and evaluation. Result: Tables with data from Colab of Curitiba separated by inspection, proposal, and evaluation;
- Procedure 2: From the tables of procedure 1, the Curitiba data, in the categories evaluation, proposal, and inspection, were added and categorized according to the macro categories of social capital. Result: Tables with data from Colab, Curitiba municipality, grouped by macro-categories of social capital;
- Procedure 3: Characterize the social capital based on the results obtained in procedures 1 and 2. Result: Characterization of the social capital.

Data analysis

The construction of the analysis model was based on the analytical model of Sustainable Territorial Development (STD) elaborated in the Research Project: the Model of Sustainable Territorial Development Indicators (Fernandes, 2013), in the context of the Sustainability Assessment Research Center (NIPAS). The synthesis of the STD analytical model is shown in Table 1.

From this base, the analysis model presented in Figure 3 was constructed, composed of the following elements: the research universe; Colab sample; Colab sample profile; the number of inspections; the number of proposals; the number of evaluations; the macro categories of the social capital; and the characterization of the social capital. For these analyses, we used content analysis by Bardin (2011), whose main function is to critically unveil the subjective aspects of the data used. Bardin (2011) presents the criteria of categorization (classification and aggregation) as a way of thinking that reflects reality (briefly, at certain moments). The categories group together certain elements with common characteristics. In the process of choosing categories the semantic criteria (themes) were adopted. The results were validated through constructivist workshops carried out with the NIPAS research group.

Table 1 – Synthesis of the Analytical Model.

Sustainable Territorial Development	
Dimension	**Macro categories**
Built capital	Water supply systems; power supply systems; transport systems; education systems; health systems; communication systems; production and trade systems, industrial capital, domestic capital, service capital, consumer goods capital, public infrastructure capital, pollution reducing capital, capital for obtaining resources, military capital among others.
Social Capital	Trust and cooperation; sense of belonging; shared identity; solidarity; set of norms and values; associativism; self-organizing capacity; participation and citizenship; democracy, networks, etc.
Natural Capital	Non-renewable resources; renewable resources; natural resources, environmental services, intangible resources from nature, etc.

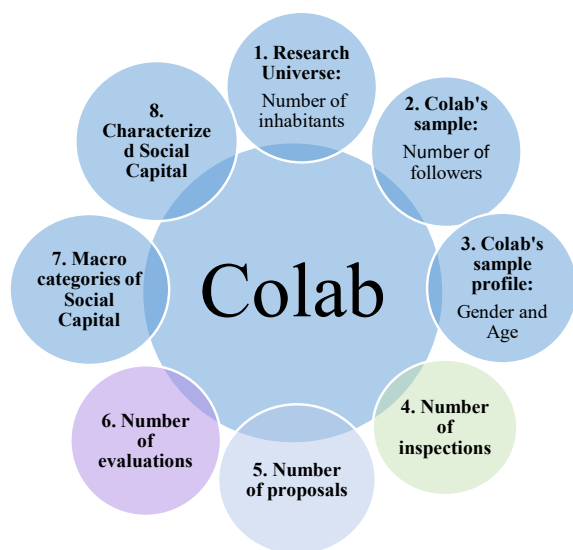Source: adapted from Fernandes (2013).

Figure 3 – Analysis model.
Source: authors.

Colab social network

Curitiba was the first city in Paraná to formalize Colab as a channel for relationship with the population (Colab, 2016a). To use Colab, the user must register through their Facebook account or by email.

Through Colab, the citizen can:

• Supervise: publish problems;
• Propose: publish ideas and projects;
• Evaluate: public goods and services.

Users can also interact with publications, with the following options: support, comment, and disseminate publications. The user chooses a category (inspect, propose or evaluate), selects a subcategory, provides details, identifies the location, inserts a photo, and publishes it. Other users review, share, and publishe articles. Once published, the municipal governments seek answers to solve the indicated problem or even provide guidance to the actors and public agents who have autonomy regarding any solution thereof.

The categories offered by the Colab social network are presented in Table 2.

Discussion and Results

Table 3 shows the proportion of followers in relation to the number of inhabitants in the city of Curitiba.

8,570 interactions were analyzed through Colab, referring to the city of Curitiba, which corresponds to 93% of all evaluations made considering its metropolitan region, which is composed by 13 municipalities. Among the categories of Colab, 93.42% were inspections, 6.19% proposals and 0.39% evaluations. The Colab data regarding inspections, proposals and evaluations are shown in Table 4.

Table 2 – Categories made available by COLAB.

Inspection	Proposal	Evaluation
Water and sewage Irregular establishment Lighting and Energy Cleaning and conservation Environment Pedestrians and Cyclists Health Safety Public transportation Urbanism Roads and Traffic	Public bathroom Bicycle parking Cycling / cycle-track Bicycle rental station Crosswalk Exclusive Bus Routes Traffic Supervisor Housing Street lighting Trash can Bus stop Playground Track paving Planting a tree / afforestation Square Accessibility ramp Recovery of public equipment Cultural heritage	Road Stadium Airport
Other subcategories are available.		

Source: Authors, based on COLAB data.

Table 3 – Summary of COLAB data.

Inhabitants	COLAB Number of followers	Relation between inhabitants and followers
1,880,000	11,750	0.62%

Source: authors, based on COLAB data.

Table 4 – Summary of COLAB data.

Inspections	Proposals	Evaluations
8.570	564	31

Source: Authors, based on COLAB data.

The profile of Colab users is primarily composed of male users (Table 5). The predominant age group, both among male and female users, is between 30 and 49 years (Table 6). These data coincide with the records of DETRAN PR, on the profile of drivers in the State of Paraná, which is 65% male (DETRAN PR, 2016).

• Inspection Category: The predominant interactions in the Inspection Category are: Irregular Parking, 30.3% of interactions, and holes in the streets with 7.9% of interactions, given according to the number of traffic infractions in Curitiba. In 2016 there were 1,347,090 infractions, for a fleet of 1,405,123, thus 0.95 infractions per registered vehicle (DETRAN PR, 2016), which ratifies the concern of the *netizens* in the Colab network. The location map of the publications available by Colab indicates that inspections are distributed in all neighborhoods of the city;

• Proposals Category: The predominant interactions in the Proposals Category are: traffic tax with 24.4% of interactions, and traffic signal-

Men, about 77.5%, aged between 30 and 49 years, represent the social capital of Curitiba. Concerns are mostly about individual transport, such as: irregular parking; traffic supervision; road conditions and highways.

The first two concerns directly express the relationship with the various macro categories, and can be interpreted as a sign of citizens' concern about compliance with the laws and norms of the city, the preservation of the public good, care and diligence for the city. They are related, therefore, to the macro category, "set of norms and values", "sense of belonging" and "participation and citizenship". In a second analysis, this concern may denote the citizen's priorities, not necessarily virtuous, in the sense that the focus of their gaze is mainly on what directly affects them. That is, the citizen, as a user of individual car transport, cares about parking and traffic mobility, but not for collective values, and rather for their individual interests. The sharing of this social capital, the interest in mobility, individual transportation and the automobile, is shared in social networks, as an individual interest that adds up, but is not necessarily collective. It is only the result of the sum of individual interests. The third concern, quality of roads and highways, seems to confirm this hypothesis.

That is, there is a prevalence of the social capital of the citizens of Curitiba in relation to norms and values, and this occurs in relation to the automobile element and to individual interests, contradicting in this last aspect the definitions of social capital proposed by Putnam (1995, 2006); Fukuyama (2002a, 2002b); Ostrom (2000); Franco (2001); Grootaert et al. (2003); D'Araújo (2010); and OECD (2013), when they associate social capital with the movement of sharing values and norms associated to stable groups, organizations and organized communities in order to balance and manage them. The social capital expressed in virtual social networks, such as Colab, seems to distance itself from sociability based on reciprocity and on social norms and

institutions that generate trust and collective identity. Although there is common participation and concern, there is no sharing and communication between citizens.

In relation to the prevalence of "monitoring" in relation to "proposals" and "evaluations", the most acceptable explanation is that it is more telegraphic than making proposals or evaluations. That is, a simple title, accompanied by a photograph, results in an understandable report of a problem, with which, unlike the proposal and the evaluation, the citizen is not obliged to commit to. Thus, in light of the cognitive dimension of social capital (Coleman, 1988), which refers to the transmission and acquisition of knowledge, it means a simplification of what Nahapiet and Ghoshal (1998) described, as well as Maslow's (1943) theories, "Pyramid of Maslow"; Li's "Pyramid of the Engagement of Social Media" (2010); and Max-Neef (2012) "Matrix of Needs and Satisfiers". The predominance of the "control" act can also be explained by Arnstein's (2002) "Stair of Citizen Participation", as acts of representations, interpretations, and participation in the system of shared meanings.

Despite the simplification aspect of participation, citizenship and social network engagement, these need to be analyzed and evaluated. In the analysis undertaken herein, it can be stated that, within the above-mentioned limits, Colab is a relevant tool and source of information for territorial management. Although one cannot fully support Lévy's (1999) assertions that social networks allow a mutual space of cooperation and exchange, because it does not permit direct cooperation, it can be said that it is a mutual space of information pertinent both to the municipal management and for the citizens themselves.

That is, the sample of social capital, expressed through Colab, does not demonstrate the strengthening of social ties, but it means a convergent space of participation. This participation forms part of one level of involvement and engagement, the simplest, i.e., it is easier to monitor than to propose and evaluate. It is said that the citizen plays the role of "prosecutor" of the city hall, acting as a "tattletale". But the collaboration of the citizen with the municipal public authority, through Colab, can generate a virtuous circle. The citizens collaborate, the city council directs or resolves the demand, and the citizens benefit. The greater the participation through Colab, the greater the performance of the municipality and the greater the benefits, that is, the greater the expression of social capital, the greater the possibility of improving public management for the municipality, citizens and the environment and sustainable territorial development. Participation via Colab, therefore, can foster the improvement of city management and the indicators generated by the network are relevant to the "(re) formulation" of public policies.

According to Giaretta and Di Giulio (2015), these networks also have an innovative potential, still unexplored, which is to facilitate political-social engagement, revealing users' perceptions of

Table 5 – Profile Interactions COLAB by gender.

Gender	Inspections (%)	Proposals (%)	Evaluations (%)
Male	77.5	83.9	87.1
Female	22.5	16.1	12.9

Source: authors, based on COLAB data.

Table 6 – Age range versus % Interactions.

Age range (years)	% Interactions
< 19	7.7
20–29	15.4
30–39	38.5
40–49	23.1
50 ≥	15.4

Source: authors, based on COLAB data.

the issues in the cities, helping to achieve sustainability, increasing engagement and supervision. Although Colab reinforces the collaborative potential of citizens through participation, adherence and engagement in the social network, Silva and Policarpo (2014) affirm that Colab reinforces the collaborative potential of this type of network. In the same sense, Vercelli (2012) emphasizes the importance of encouraging "collaborative technological design", aiming at more equitable solutions for the exercise of citizenship.

It is important to point out that, in the network, the citizens are not a number, they are a "person" because they are identified with their Facebook profile, or email, they have an "identity", a name and surname, a face. When the citizen publishes any demand on the social network, other users can interact (comment, support, share) with the same demand. It forms, in a certain way, a "community" with common interest.

As for the form of interaction, it is worth emphasizing the importance of the image, once that the citizen publishes demands of inspections by means of photos, and , considering that "an image is worth a thousand words", the interaction is instantaneous, in real time. Colab itself offers a small "tutorial" on how to take effective photos. This interaction through photos (universal language) is replete with symbols and meanings (semiotics), which denote social capital. The photos allow content analysis and critical unraveling (Bardin, 2011) and emphasize the importance of signs within a given territory (Saquet, 2015).

This analysis corroborates Albagli (2004, pp. 53) in order to "strengthen territorialities, although it cannot be affirmed that there is a stimulus to ties of identity and cooperation based on the common interest of protecting, valuing and capitalizing on certain territory." Regarding territoriality, the relevance of Colab as a universe of research analysis is verified, and its social capital expresses a territoriality, virtual connections between the interests of a human community and its space. Therefore, a network, from which one can infer values of an identity, and a community (Champollion, 2007). It can also be inferred that there are networks of civic engagement (Putnam, 1995). This discussion meets the criteria of sustainability proposed by Sachs (2008), especially the territorial dimension. For Oikawa and Dely (2017), Curitiba's priority is its continuity, which goes beyond physical limits, and in the near future will have to meet the neighboring municipalities.

The results and reflections presented herein can serve as an "alert", a "thermometer", a "symptom" of citizens' priorities, or distortions generated that need to be reversed in public policies. According to D'Araujo (2010), social capital can be an essential criterion in formulating public policies.

The results show the concern of citizens with the theme urban mobility and indicate a concern for public authority, namely: the fetish for the automobile. Of the 32 options offered by Colab,

15 are related to urban mobility: Pedestrians and Cyclists; Public transportation; Urbanism; Roads and Traffic; Bicycles; Cycle / cycle path; Bicycle rental station; Crosswalk; Exclusive bus lanes; Traffic tax; Bus stop; Road paving; Accessibility ramp; Bus Station and Airport. However, the central point of demands is the automobile, the self-interest, and not the collective interest. For Sen (2010, pp. 332), "self-interest is obviously an extremely important motivation, and many works on economic and social organization have been hampered by not giving proper attention to this basic motivation". However, from the understanding of self-interest, the public authority must guarantee the collective interest, the common interest.

It should be noted that Curitiba has a collective transportation system of reference in Latin America, and is considered one of the best in Brazil. On the other hand, it is the Brazilian capital with the highest rate of motorization in Brazil. The Curitiba fleet grew 91.7% between 2001 and 2011 (from 28.2 automobiles / 100 inhabitants in 2001 to 74.7 automobiles / 100 inhabitants in 2016) (DETRAN PR, 2016), doubled the average rate of the country, in 2014, about 28 cars / 100 inhabitants (Observatório das Metrópoles, 2015). The growth in the number of automobiles is closely linked to a set of incentives policies for the manufacture, marketing and financing of passenger cars, associated with the increase in income in the country in those years, especially after 2003 and with the tax exemptions in the period between 2001 and 2014 (Observatório das Metrópoles, 2015). The Curitiba fleet is 1,406,049 vehicles, of which 878,854 are automobiles (DETRAN PR, 2014).

This prioritization was criticized by Jacobs (2000), but it is still current as one of the portraits of contemporary society. According to the author, the road arteries are powerful instruments of urban destruction, because streets are destroyed and transformed into inaccurate spaces, meaningless and empty for pedestrians. Ironically, the author asked "What is the meaning of life? For us, the answer is clear, definite and for all intents and purposes: The meaning of life is to produce and consume automobiles" (Jacobs, 2000, pp. 412). For whoever is born in Curitiba, the meaning of life is to consume and to drive.

For Morin (2015), the "intoxications of civilization" are "consumer intoxication" and "automobile intoxication", which contribute to energy waste, ecological degradation and consequently degradation of the way of life (traffic jams, parking spaces, waste of time, pollution, aggression, etc.). Morin (2015) points out possible routes to urban mobility, such as: regulating the use of cars coercively, adapting city centers for the exclusive use of pedestrians, installing parking belts around agglomerations (near transport); investment in non-polluting public transport: subway, trains, shared ride; car rental, property reduction etc.

The results do not corroborate the image of Curitiba, known as "ecological capital", "model city", which is the focus of academic
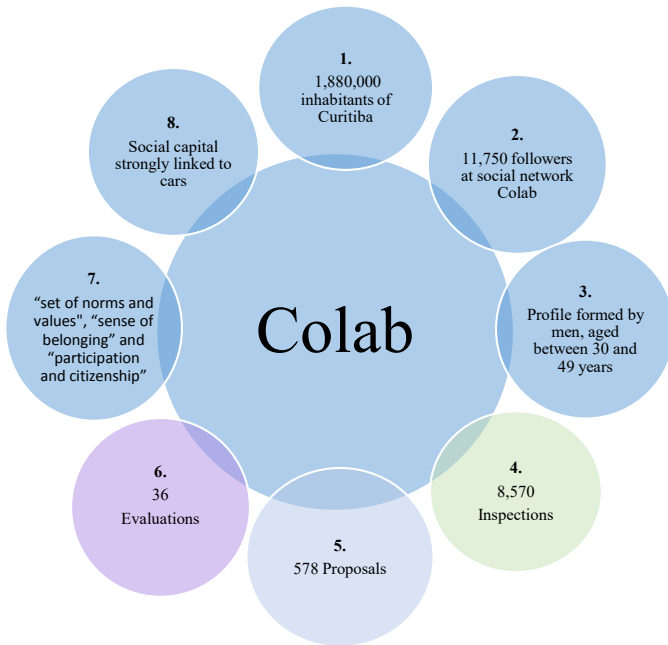
Figure 4 – Synthesis of the results of the analysis.
Source: Authors.

research that addresses such topics as "city marketing"; an example of urban planning. The synthesis presented in Figure 4 shows that there is a strong relationship between the social capital of the city and the themes involving cars.

Conclusions

Most of the virtual interactions identified in the use of the Colab tool fall under the supervision category, referring mainly to the content of the macro-categories "set of rules and values", "participation and citizenship" and "sense of belonging". These interactions highlight the priorities of the citizens of Curitiba, with an individualistic focus. This focus is confirmed by inspections, mainly on parking and traffic, motivated by the preference of individual transportation with cars. The individual interest shared in social networks adds up, but cannot be considered a collective movement that represents the entire population of the city, being limited to Colab users.

This individualized perspective of participation points to a social capital that prioritize the automobile culture. That is, the city for the cars.

Finally, Colab presented itself as a timely and interesting tool to capture the social capital expressed about a city.

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