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Public transport integrated management and strategic digital city relations: Curitiba and the metropolitan region

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Abstract
Cities are in constant growth and territorial expansion. The objective is to analyze the public transport of Curitiba integrated management and relations with the strategic digital city. The research method emphasized a case study in city Curitiba and the metropolitan region. The research protocol focused on 11 variables. The results highlighted the strategic digital city subprojects in the integrated management current model of the collective public transport system of Curitiba and the metropolitan region. However, there is no official document that specifies the strategies and goals that will serve as a basis for future management. The conclusion reiterates the debate on urban, local and regional mobility, referring to the public service management in and between municipalities. It is noteworthy that when there is a public transportation system strategically planned and properly implemented, it contributes to urban-regional development.
Keywords: Urban-regional development. Public transport. City strategies. Urban management. Strategic digital city.

Gestão integrada do transporte público coletivo e relações com cidade digital estratégica: Curitiba e região metropolitana

Resumo
As cidades estão em constante crescimento e expansão territorial. O objetivo é analisar a gestão integrada do transporte público coletivo de Curitiba e as relações com a cidade digital estratégica. A metodologia da pesquisa enfatizou um estudo de caso sobre transporte público coletivo em Curitiba e região metropolitana. O protocolo de pesquisa se concentrou em 11 variáveis. Os resultados auferidos destacaram a presença dos subprojetos da cidade digital estratégica no modelo vigente de gestão integrada do sistema de transporte público coletivo de Curitiba e região metropolitana. No entanto, não há um

documento oficial que especifique as estratégias e metas que sirvam de base para gestões futuras. A conclusão reitera a importância do debate sobre mobilidade urbana, local e regional, referindo-se à integração da gestão dos serviços públicos nos e entre os municípios. Destaca-se que quando se tem um sistema de transporte público coletivo estrategicamente planejado e implementado adequadamente se contribui com o desenvolvimento urbano-regional.
Palavras–chave: Desenvolvimento urbano-regional. Transporte público coletivo. Estratégias da cidade. Gestão urbana. Cidade digital estratégica.

Gestión integral del transporte público y las relaciones con la ciudad digital estratégica: Curitiba y la región metropolitana

Resumen
Las ciudades están en constante crecimiento y expansión territorial. El objetivo es analizar la gestión integral del transporte público de Curitiba y las relaciones con la ciudad digital estratégica. El método de investigación enfatizó un estudio de caso sobre transporte público en Curitiba y la región metropolitana. El protocolo de investigación se centró en 11 variables. Los resultados obtenidos destacaron la presencia de los subproyectos de la ciudad digital estratégica en el actual modelo de gestión integral del sistema de transporte público colectivo de Curitiba y la región metropolitana. Sin embargo, no existe un documento oficial que especifique las estrategias y metas que servirán de base para la gestión futura. La conclusión reitera la importancia del debate sobre la movilidad urbana, local y regional, refiriéndose a la integración de la gestión de los servicios públicos en y entre municipios. Es de destacar que cuando existe un sistema de transporte público estratégicamente planeado e implementado adecuadamente, se contribuye al desarrollo urbano-regional.
Palabras clave: Desarrollo urbano-regional. Transporte público. Estrategias de ciudad. Gestión urbanística. Ciudad digital estratégica.

1 Introduction

Cities are in constant growth and territorial expansion, and the expansion of the population's needs in local and regional scale is inevitable. One of these needs refers to the integration of public service management between municipalities (metropolitan character). The focus shifts to integrated development to improve the quality of metropolitan areas and reduce the cost of shared services. The strategically planned and implemented public transport system also contributes to urban-regional development, favoring the mobility of people within and between cities. This can provide people who need this type of public service a better quality of life (BAČLIJA, 2011; KIM, 2020). To solve the problems inherent to the growth of cities, such as pollution (visual, noise and environmental) and precarious infrastructure, public managers resort to strategic and integrated thinking. It is a possibility of shared management between municipalities (BAČLIJA, 2011, 2013) with a focus on urban development (SOUZA, 2011). Projects such as the strategic digital city are a way to achieve these goals. The strategic digital city includes citizens in the decision-making process, emphasizing the importance of participation and integrated management between citizens and public managers (BOBBIO, 1984; REZENDE, 2012; 2018).

The research problems emphasize that municipal and state legislation does not adequately address the scale of inter-regional management. The reason for this situation is the provisional nature of *ad hoc* solutions based on direct and punctual negotiations without considering the integration between municipalities (KLINK, 2009; NATERER; ŽIŽEK; LAVRIČ, 2018). They are temporary solutions that remain permanent, revealing flaws in management processes and precariousness in urban infrastructure. These failures can be attributed to the suppression of the effective participation of the population in the decision-making process (REZENDE, 2012, 2018; MIŠIČ; PODNAR, 2019). It is also necessary to consider that there are divergences in perceptions between managers (who offer the service) and citizens (users of the service). Thus, a service considered innovative or of quality is not always seen in the same way by those who use it in their daily lives (SILVA LIMA; COSTA FILHO; VASCONCELOS; 2013). Although public transport brings benefits to cities, the system also brings challenges that extend to other structures and elements of the city. It is a reality that occurs both at the municipal level and in metropolitan regions. There are gaps in articulation and integration in the processes of management and elaboration of public policies. In this sense, the themes of governance and public management are highlighted, and the decisions of public managers interfere in the quality of this type of service (KNEIB, 2020).

The problem-question highlights: are there relationships between the integrated management of public transport in the metropolitan region of Curitiba and the strategic digital city?

The objective is to analyze the integrated management of public transport in the metropolitan region of Curitiba and its relations with the strategic digital city.

The research justifications include: continuous growth of cities, integration of public services common to nearby municipalities; time-space compression; management focused on the needs of the population and the economic relations arranged in the city (HARVEY, 2007). In relation to these demands, article 6 of the Constitution of the Federative Republic of Brazil (BRASIL, 1988) established that the social rights of citizens; such as: education, health, work, housing, leisure and security; they are mandatory and basic, and must be included in specific documents of the municipal government. Partnerships between public authorities and associated companies allow the sharing of costs and risks, making possible the services that would previously be unfeasible to be carried out. Technology, as well as its forms of access, provides a channel for interaction between government, population, companies and other social actors. Its dynamic influences citizens' perceptions of the municipality and the maintenance and participation in decision-making processes (CHAHIN et al., 2004; MIŠIČ; PODNAR, 2019).

2 Theoretical foundations

2.1 Integrated management strategies for public transport

2.1.1 Urban Management

Urban management stems from research themes or structures related to power relations, the nature of the city and its socioeconomic structure (WILLIAMS,

1978). Over time, a series of relationships and behavior that affect citizens' daily activities are incorporated into the concept (CHURCHILL, 1985). Urban management can be understood as city management. It is related to the set of resources and administrative tools used in the city, qualified to improve the quality of infrastructure and urban services, provide better living conditions and bring citizens closer to municipal government decisions and actions. In relation to municipal planning, urban management emphasizes the master plan and municipal management highlights strategic planning that includes urban and rural areas (REZENDE, 2012).

The terms "urban management" and "urban planning" are often confused. The first manages public resources to solve collective problems. The second is a document that aims to prepare the future, avoiding or minimizing collective problems and exploring the potential of a given space. Although urban management and urban planning are distinct terms, the ideal is that they are conceived and implemented in an integrated way so that urban development is centered on quality of life (SOUZA, 2001).

Public managers face the challenge of responding quickly and effectively to the collective problems of their socio-spatial reality. Urban issues include the formulation of public policies and strategies for the city in order to produce sufficient and satisfactory results. One way to do this is to empower governmental and non-governmental organizations (CHEEMA, 1993). These relationships between social actors lead to partnerships in the public sector (LÜBECK; WITTMANN; LADEIRA, 2009).

2.1.2 Urban strategy

The concept of strategy is related to specific sectors, being multidimensional. In urban planning, whether at the local or inter-municipal level, strategies can be formulated according to the scale of intervention. In this process, although consensus is not always reached, agreement continues to be sought among the relevant actors (HAMBRICK, 1983; YÁÑEZ; GARCÍA, 2020; KIM, 2020).

It was only after World War II that the concept of strategy became related to the administrative and business sector. At that time, the world experienced drastic changes (from a relatively stable external scenario to a changing and more competitive scenario), demanding ever faster and more effective actions and solutions, in addition to intelligent use of resources and cost reduction (BRACKER, 1980). The concept of strategy can be categorized according to the 5 Ps of Mintzberg (1987): plan, ploy, pattern, position and perspective. It is noteworthy that the formulation and implementation of strategies does not come from a standardized and identical process in all places. It is the articulation of results under internal conditions; dimension, available resources, material or human and organizational issues; and the external means, characteristics and conditions that involve them (NICOLAU, 2001).

Although there are numerous views, in general, the strategy formulation and maintenance process are divided into three lines: strategy formation through a negotiation process, strategy formation as a permanent construction process and strategy formation as a process rational and formal (LINDBLOOM, 1959; CYERT;

MARCH, 1963; STEINER; MINER, 1977; HOFFER; SCHENDEL, 1978; MURRAY, 1978; THIETART, 1984; JAUCH; GLUECK, 1988). Although these are views from the 1950s to the 1980s, it is clear that contemporary urban managers still maintain this basic classification. However, they consider the integration between the participants (cities, municipalities and regions) an essential part of the strategic process (KIM, 2020). Historically, context is important in decision making because opportunities, threats, strengths and weaknesses that influence the formulation of strategies are sought at this moment, defining goals and objectives to create a better future (STEINER; MINER, 1977).

2.1.3 Collective public transport service

Improvements in public transport include joint actions that go beyond the local public system, influencing the meeting of citizens' needs (KNEIB, 2020). For the public transport service, it is also necessary to use clear strategies to reach effective decisions. In this sense, it can be said that public transport promotes and limits urban development (KNOWLES; FERBRACHE; NIKITAS, 2020). However, if there are no clear and defined strategies, it is almost impossible for managers to obtain the expected results (THOMPSON, 2000). It is important to highlight that public transport services are one of the important elements for the functioning of cities, which cannot and should not be ignored (BETHLEM, 2004).

The term "transport" refers to the displacement between two different points. In cities, these points can be, for example, places of work and leisure. The displacement of people refers to the means used by public managers to carry out the mobility of people (MUMFORD, 2008; BRASIL, 2012). Effective mobility reflects the quality of life of citizens at a local and regional level. The quality of services provided to the population is affected by the quality of public transport (MUMFORD, 2008). The attributes of these services are: accessibility, connectivity, reliability, travel time, capacity, safety, urban road conditions, technical characteristics of vehicles, infrastructure of stopping places, service frequency, information systems, operator behavior and personal experience (FERRAZ; TORRES, 2001; CARDOSO, 2008; 2015). Transportation system planning affects the economy, growth and development of cities and metropolitan regions. This also interferes with the expansion of the urban fabric, land use and occupation axes, reflecting on urban-regional development. The situation exposed shows that this is a basic public service that is fundamental to the economic and social needs of citizens (BICALHO, 1998; KNOWLES; FERBRACHE; NIKITAS, 2020).

The large amount of information available in the online format brought changes in the planning format of the public transport system, such as the possibility of consulting public opinion directly and informing the population about changes and plans involving the public passenger transport system. In this sense, there was a need for popular participation on a larger scale, present in decision-making processes, which reiterated the importance of clearly defining roles (public authorities, politicians, technicians and population) in urban management. This motivation promoted the co-participation of social actors in all stages of the process and in the construction of a effective transport system (TIMMS, 2011). The public transport system planning process includes the selection and use of

contemporary management models, involving: coordination, coherence, participation, organization and integration (ORTIZ, 2005). The way in which these elements are expressed and integrated into planning can lead to an effective, comfortable and safe public transport infrastructure, with a positive or negative impact on the city's quality of life. This service is essential because people need access to social, work and leisure places (BICALHO, 1998; ITDP, 2016).

To meet the needs of the population, public managers seek to negotiate between city halls, integrate transport services and connect the most remote cities to large urban centers (MCGILL, 1998; SOUZA, 2011). As the centers are expanded, there is a need for new links, establishing economic dynamics and solving conflicts arising from urban areas in closer municipalities. This shows that the occupation of space goes beyond limited urban areas, extending to groups of cities that form regions. Concomitantly, they are relationships that manifest themselves in the urban and regional (Ferreira, [1999] 2002). To ensure that strategic planning has a minimum level of excellence, negotiations can also take place at the national government level, developing and implementing guidelines and criteria in the formulation of local urban mobility plans (ITDP, 2016).

2.2 Strategic digital city

Different from the concepts of conventional digital city and smart city, the strategic digital city, a concept coined by Rezende (2012), can be defined as the application of information technology resources in decision-making and management of issues related to the municipality and also in the typology of the provision of information and services to citizens or citizens, which must be digital. This is a city project that not only includes citizens' access to the worldwide computer network (internet) through conventional telecommunications resources, but also must include citizens in the municipal decision-making process. It is based on the city's municipal thematic strategies (REZENDE, 2012; 2018).

The strategic digital city is composed of four subprojects: city strategies, city information, city public services and information technology in the city (REZENDE, 2012; 2018).

2.2.1 City strategies

The concept of "strategy" is central when linked to city management, addressing municipal issues that must be present in the preparation of strategic plans. Adequate strategic planning can advocate success in urban management (REZENDE, 2012; 2018).

However, the ideal is that these teams, integrated in a decision-making process based on formalized and articulated procedures, produce effective results (ANSOFF, 1988; NATÁRIO; NARCISO; PAIVA, 2012; KOPACKOVA, 2019). Transporting the dimensions of the city depends on the organization of the urban planning process. However, it is equally necessary to have a proactive planning culture, ideal opportunities to deal with future problems of a collective nature (MALEKPOUR; BROWN; HAAN, 2015; HERSPERGER et al., 2019).

2.2.2 City public services

Public service can be understood as any service provided at the municipal, state or national level, subject to the norms and controls of public management. It refers to the search for priority attention to essential local needs. Examples of public services are: public education, police, public health, public transport and telecommunications (MEIRELLES, 2013).

This type of service can be classified according to its purpose: user, service provider, essentiality and divisibility. Furthermore, they have four objectives: efficiency, effectiveness, equity and responsiveness (CUNHA, 2004; ENGLAND; PELISSERO; MORGAN, 2012). In the context of the strategic digital city, public services necessarily involve the interaction between citizens and managers through public services with information technology. Emphasizing that information technology, although it is a subproject of strategic digital city, has less emphasis because the focus of the strategic digital city is on city strategies (REZENDE, 2012; 2018; 2020). In Brazil, public services are ineffective in terms of management because excessive spending hinders or impedes the effective and quality provision of these services to citizens (ASSAFIM; KNOERR; DONATE, 2020).

2.2.3 City information

Information can be defined as all data worked or processed. It is an assigned or added value that generates information (REZENDE, 2012; 2018). Thus, the information is not neutral, needing to be translated and carrying the perceptions of the actors who did it (MACDONALD, 2000). Another definition is that information is something useful in decision making (REZENDE, 2012; 2018). According to Capurro and Hjorland (2007), anything can be considered information. In addition, Rezende (2012; 2018) argues that in order for them to be considered useful in aiding decision-making, they must have: more than two words; unique content; not be abstract; no generalizations; without verbs; and still, come from different documents, programs, files or related. The information must be of good quality so that it is useful and valid for decision making. In the context of municipal management, information must converge to the point at which the decision is made, and must be aligned with the managers' policies and strategies. The process of collecting, organizing, interpreting, storing, retrieving, disseminating and interpreting data, later converted into information, is based on the final objective to which the information will satisfy (CAPURRO; HJORLAND, 2007; VERRI, 1999).

From the moment information is interpreted by computer resources or people, it potentially becomes a valuable resource for decision making. Examples of information related to the management of cities are: name of the citizen; citizen's date of birth; location of the hospital building; number of equipment; total amount of monthly collection (REZENDE, 2012; 2018). Information is broadly categorized into conventional, timely, and personalized. There is also the possibility of being systematized as operational, managerial and strategic. It is emphasized that data, information and knowledge cannot be confused with actions (physical acts, executions), decisions (mental acts, thoughts) or with processes or procedures (REZENDE, 2012; 2018).

2.2.4 Information technology in the city

Information technology (IT) comprises: hardware, software and telecommunications systems. Its function is to facilitate the collection, management and use of data and information generated in the management of cities (REZENDE; ABREU, 2013). The hardware includes the physical components of computers and their devices and peripherals. The software covers the different types of programs, such as: base or operational, networks, applications, utilities and automation, and its existence is only in the virtual environment. Finally, telecommunications systems are resources that enable communication between hardware and software (REZENDE, 2012; 2018).

The impact of information technology on society must also be considered, as technology plays an important role in the formation and new forms of behavior of the population (HARRISON et al., 2011). With proper adequacy, resources arising from technology can improve urban systems such as transport, health, education and security, saving costs (DIRKS et al., 2010). Thus, the use of these resources in urban management also created a new relationship between citizens and municipal government (SOUR-VARGAS, 2007).

3 Research methodology

The research method emphasized a case study on public transport in Curitiba and the metropolitan region of Curitiba (YIN, 2015; PEREIRA et al., 2018).

The research techniques were qualitative in the descriptions and analysis, and quantitative in the calculations made from the variables of the research protocol (SILVA; MENEZES, 2005; PEREIRA et al., 2018). Content analysis was used (BARDIN, 2000) from four main topics: management, planning, strategy and integration. These topics were defined based on the primary research theme.

The research phases were: preparing research, collecting data, analyzing data and documenting data (YIN, 2015; MARCONI; LAKATOS, 2017).

The scope of the research included the city of Curitiba and the metropolitan region, chosen according to the researchers' convenience criteria (GIL, 2012).

The observation unit highlighted the official websites of public transport system administrators in Curitiba and the metropolitan region (MARCONI; LAKATOS, 2017). Thus, the 16 documents analyzed were: Curitiba 2035 (SENAIPR, 2020), Management Guidelines for the Metropolitan Road System, Urban Mobility and Integrated Transport - Performance Analysis (1970-2009), Integrated Development Plan 2006, Protocol of Intent, Municipal Law No. 11,266, Municipal Law No. 12,597, Municipal Law No. 14,771, COMEC/URBS 1996 Agreement, COMEC/URBS 2007 Agreement, COMEC/URBS 2012 Agreement, COMEC/URBS 2013 Agreement, COMEC/URBS 2014 Agreement, Partial Closure of the COMEC Agreement /URBS 2014, COMEC/URBS 2018 Agreement, COMEC/URBS 2019 Agreement and the websites: Curitiba 2035 (SENAIPR, 2020), COMEC, IPPUC, Municipal laws (LM, 2020) and URBS (2020).

The research protocol was prepared according to the information found in the documents analyzed together with the analysis of the public transport system in

Curitiba, being divided into 2 constructs: (1) collective public transport and (2) strategic digital city, concentrating into 11 research variables (YIN, 2015).

The research was conducted from March/2019 to November/2020.

The characterization of the research site was directed to the city of Curitiba, capital of the state of Paraná, with a population of 1,751,907 inhabitants in an area of 434,892 km². The metropolitan region of Curitiba (RMC) covers an area of 15,418,543 km² with a population of 3,572,326 inhabitants (IBGE, 2017). The "Rede Integrada de Transportes" (RIT) serves the city of Curitiba/PR and the metropolitan region of Curitiba (MRC). It is noteworthy that, although the mentioned region has 29 municipalities, the ITN serves only 13 of these municipalities.

4 Analysis of the integrated management of public transport and relations with the strategic digital city

4.1 Analysis of the integrated management of public transport

Of the 16 documents analyzed, seven are agreements between URBS, COMEC, the City of Curitiba and the Government of the State of Paraná. Only one of the documents formalized the partial closure of the 2014 agreement. The agreements symbolized points of change directly related to the history of the implementation and integration of the public transport system in Curitiba and its metropolitan region. The development of integrated infrastructure, which began in 1974, arises from the implementation of the north-south axis and the structuring of the network of express bus lines and feeders.

The integration of public transport in the metropolitan region of Curitiba, essentially, consists of collaboration between URBS, the body responsible for technical issues, such as implementation and maintenance of physical-tariff infrastructure and system operation; with COMEC, responsible for planning growth and mediating issues common to municipalities in the metropolitan region of Curitiba (in this case, the theme of transport); Curitiba City Hall, which through political interaction between the capital and municipalities in the metropolitan region, develops partnerships and encourages the movement of the population between the cities, seeking their mutual development and plans together with COMEC the directions for the growth of the public transport network, in addition to negotiating and requesting from the Government of the State of Paraná the funds necessary for the development of the region as a whole through the growth of physical integration between the cities farthest from the capital, such as the city of Doutor Ulysses, about 133 km to the north or the municipality of Rio Negro, which is about 109km to the south. The integration then takes place through a collaborative arrangement between the responsible bodies, covering issues of planning, infrastructure, operation, tariff, data management and plans, decision-making processes, financial incentives and negotiation between municipalities.

Later, in 1980, with the consolidation of the system and establishment of the East-West Road axis, the network of bus lines in Curitiba and the metropolitan region, known as "Rede Integrada de Transportes" (RIT), were made official. In that same year, the fair value between the lines of Curitiba and the metropolitan region was unified. The evolution of the system led to the implementation of tube stations,

"ligeirinho" lines and bi-articulated buses. However, it was only in 1996 that the first formal agreement was signed between the City of Curitiba, Urbanização de Curitiba S/A (URBS), the Coordination of the Metropolitan Region of Curitiba (COMEC) and the Government of the State of Paraná, defining URBS as the sole manager and official controller of the public transport network. This strategic decision made it possible to integrate the system on a metropolitan and regional scale (URBS, 2020).

The analysis of the dates of officialization of the agreements indicated that, from 1996 to 2011, the system remained without significant changes. In 2007, there were small changes arising from the agreement. These changes reinforced the clauses of the 1996 agreement and stipulated that URBS and COMEC work together in the formulation of another administrative arrangement between the Government of the State of Paraná and the municipalities that are part of the metropolitan region of Curitiba (privileging a format that integrates planning decisions on Curitiba's public transport system between URBS, COMEC, Curitiba City Hall and Paraná State Government). The purpose, at that time, was to establish a permanent management model that could mediate decision-making between the institutions responsible for maintaining the public transport service.

In the period between 2012 and 2019, the number of agreements increased significantly. The situation at the time required constant and significant changes to the agreements signed in previous agreements. These were changes that directly influenced the value of the fares (decrease in the subsidy sent by the government of the State of Paraná due to political misalignment between the city of Curitiba and the State Government) and, in the management and integration of public transport lines between Curitiba and the metropolitan region (with municipalities such as Araucária, effectively breaking the physical-fare integration with the integrated transport network of Curitiba). This scenario of changes, both political and in the integration between the agencies responsible for planning the public transport system in Curitiba, revealed a mismatch between municipal and metropolitan planning, as well as in the financial support of the Government of the State of Paraná. Unlike other agreements signed in the same period, only the 2014 agreement was partially closed in an official document. This closure led to the disintegration of the transport system between Curitiba and the metropolitan region (mostly, only the fare issue, but also physical in some terminals and lines, as in the case of the municipality of Araucária). Another official integration took place through renegotiation between those involved (reestablishing the previous physical-fare integration), only in 2018, due to the change in political positions in the state government and the City of Curitiba, returning to political realignment in RIT planning.

In the documents "Curitiba 2035", "Guidelines for the metropolitan road system", and in the "Protocol of intentions", the purpose of guiding and identifying means of integration with the system appeared. The agreements sought to define who would be responsible for the actions, planning and maintenance of the transport system. The laws formalized the decisions, specifically describing the actions that would be taken. The "Integrated Development Plan" described the proposals that could be used to fulfill the intentions of integrating the public transport system.

The frequency of the word "integration" (and the like) was largely present in the nomenclature of the name of the system that appeared in the investigated documents. In addition, the intention to use the public transport system to effectively integrate the metropolitan region with the capital through the infrastructure of transport corridors, the network of bus lines and lower fares was evident. The established integration planning proposal included a more adequate basis for the development of the metropolitan region.

Of the 16 documents, four cases were found in which the word "strategy" does not appear even once. It was noted that the documents used the term "actions" instead of "strategy". From the set of investigated documents, only "Curitiba 2035" clearly defined its 132 strategies (called "actions"), addressed to the theme "Mobility and Transport". These strategies corresponded to the vision of the future built on the theme and identified through the words: multi and intermodal integrated metropolitan system, transparent and intelligent, dynamic, safe and sustainable, oriented towards citizenship and active mobility. It was observed that in the name of the strategies there were exposed intentions: integration of infrastructure and management between Curitiba and the metropolitan region; use and update of technology; integrated decision-making in the RMC; creation of an integrated database; transparency; intermodality; elaboration of policies, plans and programs to encourage the use of public transport; and innovation. It should be noted that the intentions indicated in the strategies do not come from official documents. Even if some action was taken in practice, in line with the strategies of "Curitiba 2035", there was not necessarily a direct correlation between the reason used for decision making and the action taken, since the plans and official documents do not explicitly mention the use of the document "Curitiba 2035" as the basis for their decisions at the time.

The metropolitan region of Curitiba (MRC) comprises 29 municipalities, however, the "Rede integrada de transporte" (RIT) serves only 13 of these municipalities (URBS, 2020). The metropolitan region extends from the border with the state of São Paulo (Cities of Doutor Ulysses, Adrianópolis and Cerro Azul, about 130km to the north) to the state of Santa Catarina (Cities of Lapa, Rio Negro, Piên, Agudos do Sul and Tijucas do Sul, about 100km to the south). Thus, relations with the capital of Paraná became scarcer due to the large distance (in some cases more than 100km) to be covered by public transport, making it difficult not only to plan public transport, but also other interests shared by the municipalities, such as: garbage collection, health and the environment.

4.2 Strategic digital city analysis

In the strategic digital city, municipal themes are defined as macro-activities that are broken down into subsystems or modules called municipal affairs (REZENDE, 2012; 2018). Thus, the municipal theme addressed refers to "transport", broken down into: public transport, transport management strategies and integrated management. The sources, with the exception of the URBS website, did not classify the documents under the name of the municipal theme "transport". However, those who referred maintained a direct relationship with this

nomenclature only by adding other elements. This addition can be classified as a "municipal issue" according to the strategic digital city model.

As for the existence of information about plans and projects available online, it was found that those responsible for the integrated management of public transport in the city of Curitiba and its metropolitan region have a total of five websites, which provided a collection of documents selected for analysis. In addition to the websites used, the city of Curitiba has a website that gathers various data and information on municipal issues called "Portal Dados Abertos" (PC, 2020). The portal works as an intermediary between the citizen and the person responsible for providing the requested data. It was possible to verify that there was availability of information and plans by digital means, present on the websites of those responsible for the operation and maintenance of the public transport system.

Regarding the integration strategies between Curitiba and the metropolitan region in the "transport" theme, it was noted that there was concern with the stage of elaboration of plans so that they use existing data in planning. However, the strategies are not objectively defined or described in official documents. As pointed out, the only document that expresses the strategies is "Curitiba 2035", prepared by eight institutions together with the Municipality of Curitiba. However, this document cannot be considered as a guide for city management as it is not compulsory. Therefore, decisions ultimately depend on the interests of government officials and those who manage the collective public transport system. In a strategic digital city project, not objectively describing the strategies that will be used prevents the proper implementation of this model due to the lack of transparency in the process.

The system's nomenclature includes the word "integrated" and the related words that permeated all analyzed documents. As for the number of integration strategies, as they are not explicitly presented in official documents, it was not possible to list them accurately. With the exception of the document "Curitiba 2035", prepared in 2017, which indicated a total of 132 strategies for the area of "mobility and transport", being divided into short, medium and long term.

Official plans and documents mentioned the use of strategies as a basis for their formulation, but did not describe them, which does not allow expressing their quantity or content. This is a matter of concern in relation to the transparency of the planning processes and integrated management of the public transport system, which may prevent the population from effectively inspecting and following up on decision-making processes.

In the vision of the strategic digital city concept, the population must be included throughout the entire planning process, helping and directly contributing to decision-making. When taking into account what is described in the official documents and, although strategies have been found in the planning process, these strategies are not objective. Therefore, they may not even exist in practice. In this way, it is noticed the absence of an integrated digital means of data management and plans that have clarity in the presentation of the strategies used and active collection of data from the city and the population.

It is noteworthy that, when there is a change of management in cities, the planning process tends to start over. There is no continuity in the decisions of the previous management because only new decisions are taken that may or may not

be aligned with a strategic line in the medium or long term. Furthermore, this practice impedes a more equitable urban-regional development that results in a better quality of life for citizens at the local and regional levels.

5 Results

In content analysis, the word that stands out the most is "plan". It was noted that there was concern about the result (such as mobility and work plans) and not necessarily about the processes themselves. This means that those responsible for developing these plans can choose and define how to proceed internally in relation to the methodologies they adopt, as long as they find ways to reach the stipulated results. The absence of a set of specific procedures by institutions in each area of municipal planning for the preparation of plans; at least in the context of maintaining a public transport service; it results in an evaluation and inspection process that is limited to the result. Loopholes are created for failures in the plan development process that can affect the final plan and reduce its practical effectiveness in the public application environment. Planning influences the process of collecting and integrating data and information, as well as the development of strategies and maintenance of the public Alberto's transport service.

The word "integrated" is most frequently highlighted as it is part of the system name nomenclature (Rede Integrada de Transporte – RIT). It is emphasized that the integration of the collective public transport system is an important component in the coverage and development of that system. Therefore, it cannot be present only in its name, it must be directly involved in the planning. Another point is related to the identification of bodies responsible for management in each part of the system, making it possible to assess performance in meeting previously established objectives, targets, strategies and planning. In the documents found, this identification is diffuse and confusing, appearing only in two of the documents analyzed (Agreements between URBS and COMEC - 1996 and 2007). It is noteworthy that the term "management" appears, mainly, with the objective of defining the roles that actors (URBS, COMEC, City Hall of Curitiba and Government of Paraná) must fulfill in the management of the public transport system. However, urban management is more complex than just defining roles among social actors.

As for the word "strategy", it is assumed that words defined in this context are present in the documents analyzed with some frequency, as they refer to the operation, planning, regulation and maintenance of the system in the short, medium and long term. Therefore, its presence in the documents demonstrates, even if minimally, a certain use and importance.

All documents mentioned one or more words within the scope of "management" in an attempt to identify which actors are or would be responsible for each part of the public transport system. Thus, at least superficially, it is possible for the population to assess whether the objectives, strategies and plans elaborated for the transport system were fulfilled by those responsible for the period foreseen. The exposed situation does not change its meaning because it is used in a context compatible with what would be strategies, but it points out that it is a word with a broad meaning, not specifying what should be done in urban planning. In the way it

was used, even on occasions when it expressed something to be executed, it was not necessarily a previously stipulated strategy.

The inappropriate use of the word "strategy" or its variants in official documents related to the public transport system can cause confusion and misrepresentation of meaning when the intention is to form an integrated group of social actors who share the same technical vocabulary for facilitate and unify communication. The scenario exposes gaps about the formation and maintenance of the CMR; extension and distance of the municipalities added to the system; importance of choosing the hub city in the management of the public transport system; proper integration of data and services; costs involved in the physical integration between these municipalities; complexity of costs (operational and administrative) and formation of the region that will be served. This is a complex process, especially for more distant and small municipalities. The need for a review of the management structure and integration of the municipalities participating in the CMR, as well as of COMEC itself, is evident, to enable the integration, both physical-tariff and data, planning, management and projects of public transport, which can and should be extended to other issues of common interest.

In the strategic digital city model, some of the most relevant characteristics at its core are clarity, quality and integration of data and information. In this type of city project, the planning of municipal themes influences, to a greater or lesser degree, other themes or issues of common interest to the municipalities.

The definition of scopes (strategy, management, planning and integration) as a basis for analysis of official documents are not just exclusion criteria, but reveal characteristics inherent to strategic digital city projects. Clarity, accuracy and consistency of data are essential for long-term planning of cities and their public services. This situation is perceived in the availability of information; in communication between the agencies or sectors responsible for planning and maintaining the collective public transport system, as well as in popular participation throughout the process. The study also showed that the documents mentioned can be accessed on official websites related to those responsible for planning and maintaining the public transport system through the terms: “transport” and “public transport”.

There is a lack of clarity in the description of the strategies used as a basis for decision-making in the documents that formalize the management and maintenance instruments of the collective public transport system. Thus, the population does not have all the necessary information to accurately monitor the direction followed in the development of the municipal theme “transport”. Citizens only have the result of planning after it is carried out. The effective application of a project, such as the strategic digital city, occurs when the population has the means and incentives to actively participate and influence decision-making processes, leading to an integrated co-management between citizens and managers. The means adopted allow for a certain degree of participation (greater or lesser) of the population. However, they do not guarantee the continuity of plans based on long-term strategies, but contribute to the construction of a database that will assist in decision-making, influencing transparency and inspection of the public budget.

It can be said that the four subprojects that make up the strategic digital city project are present in the management of the transport system. Information is

available on official websites; strategies are mentioned in official documents, even if they are not objectively described; the public passenger transport service offered has a website that allows the population to consult information through information technology that makes it easier for the population to access data and information on plans and projects on municipal themes on the website "Portal Dados Abertos" (PC, 2020).

All these implications that constitute contemporary cities lead to discussions equally present in the context of urban-regional development. The debate on urban mobility is complex at the local and regional level, and the approach to mobility of people within and between cities is relevant because the actions arising from these reflections can generate a more adequate quality of life.

6 Conclusion

Contemporary cities grow exponentially, expanding their local and regional needs. One of these needs is in relation to urban mobility, referring to the integration of the management of public services within and between municipalities. It is important to highlight that by strategically planning and correctly implementing the collective public transport system, one contributes to urban-regional development.

The objective was met as it analyzed the integrated strategic management of public transport and its relationship with the strategic digital city. The theme extended to regional development because the urban context is one of its discussions, as well as metropolitan regions. The analysis of the set of official documents investigated made it possible to deepen the practice of integrated management to public transport and the theoretical framework on strategic digital city, entering urban-regional development.

The obtained results highlighted the presence of strategic digital city subprojects in the current integrated management model of the public transport system in Curitiba and its metropolitan region. Although there are signs of these presences, in practice, there is no official document that specifies (in the short, medium and/or long term) the strategies and goals that will serve as a basis for future management. The situations in the investigated scenario referred to precarious and unsustainable long-term planning, anchored in the individual interests of social actors. The intentions found showed that planning, integration, management and strategies are just superficial terms that mask specific actions of managers.

The research contributions extend to the priority that should be given to public services, considering the growth and complexity of cities and the means to make urban management more effective in Curitiba and its metropolitan region. The importance of making available documents that refer to the strategic planning of the city and regions is included, privileging transparency and inclusion of citizens in decision-making processes. The proposed discussion supports similar academic research and assessments of the current model of integrated management in municipalities. It also contributes to deepening the theme of strategic digital city projects, exploring alternatives addressed to the implementation of these projects. These are alternatives whose basic guideline is popular participation and the use of

information technology in decision-making processes and future management. The study helps citizens and urban managers in collecting data that generate more accurate information from the moment it is organized in a digital database, integrating different municipal themes.

The limitation of the research reports that the study cannot be generalized to all public transport systems in Brazilian cities. However, it is suggested that for future research the transport systems of other cities be investigated and, subsequently, a comparative study is carried out.

The relevance of the research lies in the discussion of public transport and its relationship with strategic digital city projects, entering contemporary urban mobility. The proposed investigation expands the importance of effectiveness in urban management and the inclusion of urban and regional development in this collective process. Citizen participation leads to shared management that, as far as it is concerned, increases the quality of life of citizens through the use of public transport. The debate on the integrated management model exposes that, with an adequate and articulated model in the long term, better planned cities can be built for future generations, influencing improvements in the quality of life of citizens. The conclusion reiterates the importance of the debate on urban, local and regional mobility, referring to the integration of the management of public services within and between municipalities.

REFERENCES

ANSOFF, H. I. **The new corporate strategy**. New York: John Wiley & Sons, 1988.

ASSAFIM, J. M. D. L.; KNOERR, V. C. D. S.; DONATE, G. M. H. de B. (2020). Do fornecimento dos serviços públicos pelo estado. **Relações Internacionais no Mundo Atual**, v.1, n.22, 2020. https://doi.org/10.21902/revrima.v1i22.3961

BAČLIJA, I. Urban management in a European context. **Urbani izziv**, v.22, n.2. p. 137-146, 2011.

BAČLIJA, I. Reconceptualisation of urban management: Evidence from UE cities. **Theoretical and Empirical Researches in Urban Management**, v.8, n.1. p.30-50, 2013.

BARDIN, L. **Análise de conteúdo**. Lisboa. Editora Edições 70, 2000.

BETHLEM, A. S. **Estratégica empresarial**: conceitos, processo e administração estratégica. 5 Ed., São Paulo: Atlas, 2004.

BOBBIO, N. **Curso de introdução à ciência política**: o significado de política. 2. Ed. Brasília: Editora Universidade de Brasília, 1984.

BICALHO, M. A dívida social do transporte coletivo. **Revista dos Transportes Públicos (ANTP)**, São Paulo, ano 20, p. 33-41, 1998.

BRACKER, J. The histórical development of strategic management concept. **Academy of Management Review**, v. 5, n. 2, p. 219-224, 1980.

BRASIL. **Constituição da República Federativa do Brazil**. Brasília, DF: Senado Federal, 1988.

BRASIL. **Política Nacional de Mobilidade Urbana**. Lei N° 12.587, de 3 de janeiro de 2012. Brasília, DF. 2012.

CAPURRO, R.; HJORLAND, B. The concept of information as we use in every day. **Perspectivas em Ciência da Informação**, v.12, p. 148–207, 2007. Disponível em: http://dx.doi.org/10.1590/S1413-99362007000100012. Acesso em: 08 out 2019.

CARDOSO, C. E. P. **Análise do transporte coletivo urbano sob a ótica dos riscos e carências sociais**. 2008. Tese (Doutorado) – Programa de Pós-graduação em Serviço Social, Pontifícia Universidade Católica de São Paulo, São Paulo, 2008.

CARDOSO, J. L. G.; TERRA, D. C. T.; MATTA, L. G. da. Comunicação pública e acesso à informação na gestão municipal: um estudo em Campos dos Goytacazes - RJ. **Desenvolvimento Regional em Debate**, v.5, p. 38-69, 2015. Disponível em: https://doi.org/10.24302/drd.v5i1.654. Acesso em: 6 Mai 2020.

COMEC. Site institucional da Coordenação da região metropolitana de Curitiba. Disponível em: http://www.comec.pr.gov.br/. Acesso em: 25 mai 2020.

CHAHIN, A. et al. **E-gov.br a próxima revolução brasileira**: eficiência, qualidade e democracia - o governo eletrônico no Brazil e no mundo. São Paulo: Prentice Hall, 2004.

CHEEMA, S. G. The challenge of urban management: Some issues. In: Cheema, S. G. & Ward, S. E. (Eds.) **Urban management policies and innovations in developing countries**. London, Praeger Westport, p. 1-17, 1993.

CHURCHILL, A. A. Forward. In: LEA, J; COURTNEY, J. **Cities in Conflict**: Planning and Management of Asian Cities. World Bank: Washington DC, 1985.

CUNHA, R. A. B. **Serviços públicos essenciais**: o princípio da continuidade e o inadimplemento do consumidor. Porto Alegre: Sergio Antônio Fabris, 2004.

CYERT, R.M.; MARCH J.G. **The behavioral theory of the firm**. Prentice-Hall: Nova Jersey, 1963.

DIRKS, S. et al. **Smarter cities for smarter growth**. IBM Global Business Services, 2010.

ENGLAND, R. E.; PELISSERO, J. P.; MORGAN, D. R. **Managing urban America**. 7 ed. Washington: CQ Press, 2012.

FERRAZ, A. C. P.; TORRES, I. G. E. **Transporte público urbano**. Rima: São Carlos, 2001.

FERREIRA, J. S. W. **Apostila didática**: alguns elementos de reflexão sobre conceitos básicos de planejamento urbano e urbano-regional. Texto originalmente escrito em 06/1999, no quadro da disciplina "Planejamento Urbano-Regional", ministrada no Depto. de Arquitetura da Universidade de Taubaté. Revisto em julho de 2002. Disponível em: https://www.fau.usp.br/docentes/depprojeto/j_whitaker/aposplan.html

GIL, A. C. **Métodos e técnicas de pesquisa social.** 6 ed. Editora Atlas, 2012.

HAMBRICK, D. C. Some tests of the effectiveness and functional attributes of Miles and Snow's strategic types. **Academy of Management Journal**, v.26, n.1, p. 5-26, 1983.

HARRISON, C. et al. Foundations for Smarter Cities, **IBM Journal of Research and Development**, 2011.

HARVEY, D. **Condição pós-moderna**. São Paulo: Edições Loyola, 2007.

HERSPERGER, A. M. et al. Understanding strategic spatial planning to effectively guide development of urban regions. **CITIES**, v.94, p. 96-105, 2019. DOI: https://doi.org/10.1016/j.cities.2019.05.032.

ITDP. Site institucional do Instituto de Políticas de Transporte e Desenvolvimento. **Desafios e oportunidades para a expansão do transporte de média e alta capacidade no Brazil**, 2016.

IPPUC. Site institucional do Instituto de pesquisa e planejamento urbano de Curitiba, 2020. Disponível em: https://ippuc.org.br/. Acesso em: 5 Ago 2020.

JAUCH, L.R.; GLUECK, W.F. **Business Policy and Strategic Management**. 5 Ed. McGraw-Hill, 1988.

KIM, S. Inter-municipal relations in city-region governance. **CITIES**, v.104, p. 1-10, 2020. DOI: https://doi.org/10.1016/j.cities.2020.102771.

KLINK, J. J. Novas Governanças para as áreas metropolitanas: o panorama internacional e as perspectivas para o caso brasileiro. **Cadernos Metrópoles**, São Paulo, v.11 n.22, p. 415-433, 2009.

KNEIB, E. C. Transporte público coletivo e mobilidade: a relevância da governança interfederativa. **Redes** (St. Cruz Sul, Online), Santa Cruz do Sul, v. 25, n. 3, p. 1123-1143, 2020. DOI: https://doi.org/10.17058/redes.v25i3.14923.

KNOWLES, R. D.; FERBRACHE, F.; NIKITAS, A. Transport's historical, contemporary and future role in shaping urban development: Re-evaluating transit-oriented development. **CITIES**, v.99, p. 1-11, 2020. DOI: https://doi.org/10.1016/j.cities.2020.102607.

KOPACKOVA, H. Reflexion of citizens' needs in city strategies: The case study of selected cities of Visegrad group countries. **CITIES**, v. 84, p. 159-171, 2019. DOI: https://doi.org/10.1016/j.cities.2018.08.004.

LM. Legislação de Curitiba, 2020. Disponível em: https://leismunicipais.com.br/legislacao-municipal/5520/leis-de-curitiba. Acesso em: 5 Ago. 2020.

LINDBLOOM, C. E. The Science of Muddling Through. **Public Administration Review**, v.19, n.2, p. 79-88, 1959.

LÜBECK, R. M; WITTMANN, M. L.; LADEIRA, W. J. Rede Interorganizacional: inovação em serviços a partir da implantação da bilhetagem eletrônica em empresas de transporte público da região metropolitana de Porto Alegre. **Redes** (St. Cruz Sul, Online), Santa Cruz do Sul, v. 14, n. 3, p. 186-210, dez. 2009. DOI: https://doi.org/10.17058/redes.v14i3.1068.

MACDONALD, K. I. Use and Valuation: Information in the City. **Urban studies**, v. 37, n 10, p. 1881-1892, 2000. DOI: https://doi.org/10.1080/00420980020080481.

MALEKPOUR, S.; BROWN, R. R.; HAAN, F. J. Strategic planning of urban infrastructure for environmental sustainability: Understanding the past to intervene for the future. **CITIES**, v. 46, pg. 67-75, 2015. DOI: https://doi.org/10.1016/j.cities.2015.05.003.

MARCONI, M. A.; LAKATOS, E. M. **Fundamentos de metodologia científica**. 8 ed. Atlas, 2017.

MCGILL, R. Urban management in developing countries. **CITIES**, v. 15, n. 6, p. 463-471, 1998. DOI: https://doi.org/10.1016/S0264-2751(98)00041-9.

MEIRELLES, H. L. **Direito administrativo brasileiro**. 39 ed. São Paulo: Malheiros, 2013.

MINTZBERG, H. The Strategy Concept I - Five Ps for strategy. **California Management Review**, p. 11-24, 1987.

MIŠIČ, K. U.; PODNAR, K. Perception of city management, fellow residents, and Perceived External Prestige (PEP) as antecedents of city affective commitment - The city marketing perspective. **CITIES**, v. 84, p. 66-74, 2019. DOI: https://doi.org/10.1016/j.cities.2018.04.016.

MUMFORD, L. **A cidade na história**: suas origens, transformações e perspectivas. Tradução Neil R. da Silva. São Paulo: Martins Fontes, 2008.

MURRAY, E. A. Strategic choice as a negociated outcome. **Management Science**, v.24, n.9, p. 961-972, 1978.

NATÁRIO, M.; NARCISO, F.; PAIVA, T. Sistema de governance territorial local: caso de estudo da cidade da guarda (Portugal). **Desenvolvimento Regional em Debate**, Ano 2, n. 1, p. 82-103, 2012. DOI: https://doi.org/10.24302/drd.v2i1.214.

NATERER, A.; ŽIŽEK, A.; LAVRIČ, M. The quality of integrated urban strategies in light of the Europe 2020 strategy: The case of Slovenia. **CITIES**, v. 72 B, p. 369-378, 2018. DOI: https://doi.org/10.1016/j.cities.2019.04.001.

NICOLAU, I. **O conceito de estratégia**. Nota do autor, 01-01, p. 1-17, INDEG/ISCTE, 2001.

ORTIZ, R. V. O. Coordinatíon entre los gobiernos municipales e el gobierno metropolitano em matéria de transporte urbano. **Provincia**, n. 13, p. 141-151, jan./jun. 2005. Disponível em: https://www.redalyc.org/articulo.oa?id=55501307. Acesso em: 10 de Jan. 2020.

PEREIRA, A. S. et al. **Metodologia da pesquisa científica**. Universidade Federal de Santa Maria: Rio Grande do Sul, 2018.

PDA. Site institucional da Prefeitura de Curitiba. Portal Dados Abertos. Disponível em: https://www.curitiba.pr.gov.br/dadosabertos/. Acesso em: 5 Ago2020.

REZENDE, D. A. **Planejamento de estratégias e informações municipais para cidade digital**: guia para projetos em prefeituras e organizações públicas. São Paulo: Atlas, 2012.

REZENDE, D. A. Cidade digital estratégica: conceito e modelo - strategic digital city: concept and model. In: CONTECSI - International Conference on Information Systems and Technology Management, 15, 2018, São Paulo. **Anais ...** São Paulo: CONTECSI USP Editora, v. 1., p. 1-18, 2018.

REZENDE, D. A. **Planejamento estratégico público ou privado com inteligência organizacional**: guia para projetos em organizações de governo ou de negócios. Curitiba: Intersaberes, 2018.

REZENDE, D. A.; ABREU, A. F. **Tecnologia da informação aplicada a sistemas de informação empresariais**: o papel estratégico da informação e dos sistemas de informação nas empresas. 9 ed. São Paulo: Atlas, 2013.

SENAI-PR. **Serviço Nacional de Aprendizagem Industrial - Curitiba 2035**. Curitiba, 2017, 216 p. Disponível em: http://www.curitiba2035.org.br/publicacoes. Acesso em: 5 Ago. 2020.

SILVA, E. L. da; MENEZES, E. M. **Metodologia da pesquisa e elaboração de dissertação**. 4. ed. Florianópolis: UFSC, 2005.

SILVA LIMA, M. R.; COSTA FILHO, B. A.; VASCONCELOS, C. R. M. Qualidade e inovação em serviços de transporte coletivo público em Goiânia – GO – Brazil. **Redes** (St. Cruz Sul, Online), Santa Cruz do Sul, v. 18, n. 3, p. 138-156, nov. 2013. DOI: https://doi.org/10.17058/redes.v18i3.3000.

SOUR-VARGAS, L. Evaluando al gobierno electrónico: avances en la transparencia de las finanzas públicas estatales. **Economia, Sociedade e Território**, 1 ene., 2007. https://doi.org/10.22136/est002007252

SOUZA, M. L. **ABC do Desenvolvimento Urbano**. Rio de Janeiro: Bertrand Brazil, 2011.

SOUZA, M. L. Problemas da gestão urbana no Brazil contemporâneo: uma panorâmica. **Curso de gestão urbana e de cidades**. EG/FJP WBI LILP ESAF IPEA. 2001. Disponível em: http://www.eg.fjp.gov.br/gestaourbana/arquivos/modulo01/mod1arq8.html.

STEINER, G. A.; MINER, J. B. **Management policy and strategy** - Text, Readings and Cases. McMillan Publishers Inc.:New York, 1977.

TIMMS, P. Urban transport policy transfer: "bottom-up" and "top-down" perspectives. **Transport Policy**, v.18, n 3, p. 513-521, 2011. DOI: https://doi.org/10.1016/j.tranpol.2010.10.009.

THIETART, R. A. **La Stratégied'entreprise**. McGraw-Hill, Paris, 1984.

THOMPSON, A. A. **Planejamento estratégico**: elaboração, implementação e execução. São Paulo: Pioneira, 2000.

URBS. **Urbanização de Curitiba S.A**: História do Transporte, 2020. Disponível em: https://www.urbs.curitiba.pr.gov.br/transporte/historia-transporte. Acesso em: 24 Jan. 2020.

VERRI, L. B. **A informática na administração da qualidade**. São Paulo, Nobel, 1999.658 p.

WILLIAMS, P. Urban Managerialism: A Concept of Relevance? **Area**, v.10, n.3, p. 236–240, 1978, YIN, R. K. **Estudo de caso**: planejamento e métodos. Porto Alegre: Bookman, 2015.

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