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Understanding the city as an analytical lens for career development: A systematic literature review

A cidade como lente analítica para o desenvolvimento de carreira: Uma revisão sistemática da literatura

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Abstract: The local peculiarities that govern labor relations influence individuals' agency in their career trajectories. The study of cities as a context in which careers develop has received little attention from scholars, highlighting a research gap based on understanding the city at a new analytical level. This study analyzes how international literature articulates the constructs of careers and cities from human capital, innovation ecosystems, and sustainability perspectives. Through a systematic literature review using the Web of Science database and the Iramuteq® software, we examine 42 previous studies in four main categories: city livability and attractiveness, labor market and mobility, organizational work and expatriation, and educational system. Using an interdisciplinary approach, we present four assumptions to foster future empirical research. As contributions, this study put together areas with a little academic approach, opening spaces for deeper investigations and fruitful possibilities for scholars, urban planners, and policymakers. We conclude that career management is not just an individual endeavor but part of a wide ecosystem that must be analyzed collectively within the scope of employability, labor market, educational system, talent, human

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capital, attractiveness, and livability, demanding integrated actions and partnerships between the individuals and public and private sectors.
Keywords – Carrer; Cities; Innovation ecosystems; Sustainability; Livability; Work.

Resumo: As peculiaridades locais que regem as relações de trabalho influenciam a agência dos indivíduos em suas trajetórias de carreira. O estudo das cidades como o contexto no qual as carreiras se desenvolvem têm recebido pouca atenção dos estudiosos, evidenciando uma lacuna de pesquisa baseada na compreensão da cidade como um novo nível analítico. Este estudo tem como objetivo analisar como a literatura internacional articula os construtos de carreiras e cidades a partir das perspectivas de capital humano, ecossistemas de inovação e sustentabilidade. Por meio de uma revisão sistemática da literatura usando o banco de dados *Web of Science* e o software Iramuteq®, examinamos 42 estudos anteriores em quatro categorias principais: atratividade e qualidade de vida da cidade, mercado de trabalho e mobilidade, trabalho organizacional e expatriação, e sistema educacional. Utilizando uma abordagem interdisciplinar, apresentamos quatro pressupostos para fomentar futuras pesquisas empíricas. Como contribuições, este estudo reuniu áreas com pouca articulação acadêmica, abrindo espaços para investigações mais profundas e possibilidades frutíferas para acadêmicos, urbanistas e formuladores de políticas públicas. Conclui-se que a gestão de carreira não é apenas um empreendimento individual, mas parte de um amplo ecossistema que deve ser analisado coletivamente, no âmbito da empregabilidade, mercado de trabalho, sistema educacional, gestão de talentos e de capital humano, atratividade e qualidade de vida, demandando ações integradas e parcerias entre os indivíduos e os setores público e privado.
Palavras-chave – Carreiras; Cidades; Ecossistemas de inovação; Sustentabilidade; Habitabilidade; Trabalho.

Introduction

Individuals pursue their careers in a "limited social space" (Gunz and Mayrhofer, 2015, p. 4), where local labor relations peculiarities have a significant influence on individuals' careers (Vaclavik et al., 2021). People's professional trajectories are marked and shaped by individual differences and micro- and macro-contexts (Bauder, 2001; Briscoe et al., 2018; Mayrhofer et al., 2007; Musterd & Andersson, 2006). However, the study of cities as the context in which careers develop has received little attention

from scholars, highlighting a significant research gap that needs to be addressed at a new analytical level (Kozhevnikov, 2021).

As Florida (2010, p. 107) points out, it is essential to realize, at the local level, that "our future economic success is increasingly dependent on our ability to harness the creative talents of each and every member of the workforce". In practical terms, a better understanding of the interrelations between cities and careers could help promote people's employability and the competitiveness of regions and countries. After all, considering that cities provide the space in which knowledge circulates, careers develop, and innovations take place, deepen the understanding "about careers in cities contributes to individuals, organizations and the formulation of urban policies, including economic and social" (Tams et al., 2021, p. 14). Furthermore, favorable city structures can create, maintain and promote networks, impacting job creation, reducing poverty, increasing prosperity, and fostering innovation. For instance, in innovation ecosystems, human capital is considered a decisive factor for innovative processes and development (Edquist, 2001; Stam, 2015) and a vital element for competitiveness (Spigel, 2015).

The collaborative interrelation between stakeholders is a strategic element of the smart city concept (Mayangsari & Novani, 2015), which is viewed as a potential solution to address and mitigate urban problems (Camboim et al., 2019). However, specialists have criticized how the promotion of smart cities has been conducted, in particular, due to the excessive focus on technology or excessively top-down approaches that are not always aligned with the interests of citizens (Waal & Lange, 2019). Therefore, it is crucial to look at sustainability (a long-term vision that refers to the efficient use of resources, quality of life, and innovation) from collaborative formulations involving the various instances of society (Camboim et al., 2019).

We argue that cities are spaces that foster various types of capital, including human capital, and can enhance work and careers by directly influencing labor markets' (re)configuration. By understanding cities and their various actors as potential positive agents, work can be placed at the center of development discussions – a vital concept to innovation ecosystems. It is through the translation of knowledge into practical know-how that innovation is directly related to people.

Despite work often being viewed as an organic byproduct of other societal endeavors, its significance as "the core of the social structure" (Castells, 2010, p. 265) cannot be overstated. Apart from macro indicators demonstrating a place's productivity and wealth, work translates into concrete manifestations at the micro-level, such as individual professional trajectories. Then, it is essential to bring the discussion about innovation ecosystems closer to the realm of individuals. In this sense, a relevant question arises: how can we better understand the interrelation between cities and careers? Gehl & Svarre (2013) provoke us to understand cities through the mutuality between city space and city life. By aligning the discussion of the interrelationship between careers in the cities, including their interrelation with innovation ecosystems and sustainable development, we hope to answer their call.

Therefore, this study aims to analyze how international literature articulates the constructs of careers and cities from human capital, innovation ecosystems, and sustainability perspectives. We conducted a systematic literature review using the Web of Science database and the Iramuteq® software to identify relevant themes that may foster future studies. As a result, we have identified four categories that represent different but complementary theoretical approaches by exploring the existing literature. This has allowed us to explore possibilities for future empirical investigations by establishing four fundamental assumptions.

This work provides important contributions. First, it combines areas with a little academic approach, opening spaces for deeper investigations. Second, it organizes the discussion about cities and careers in complementary axes, indicating fruitful possibilities for scholars, urban planners, and policymakers. Third, it brings academic and managerial implications for the interrelated constructs addressed in this study.

This study is structured as follows: chapter two revises the theoretical outline; chapter three describes the methodological procedures of the systematic review; chapter four analyzes the results, mapping four main categories that support the discussion and future research directions promoted in chapter five. Finally, chapter six concludes the study with the final considerations, contributions, and limitations.

Establishing the Relationship between Cities, Careers, Knowledge, and Ecosystems

Careers can be analyzed and understood through different theoretical lenses in many fields of knowledge. Considering careers as "the evolving sequence of a person's work experiences over time" (Arthur, Hall, and Lawrence, 1989, p. 8) is an umbrella concept. Over the last few decades, especially from the second half of the 1970s, significant changes in labor organization affected not only the dynamics of the labor market but also how workers build, transform and maintain their careers (Baruch & Vardi, 2016; Briscoe et al., 2006; Hall, 1976, 1996). Changes at the macro level, characterized by a more unstable, turbulent, and much less predictable environment, were thus accompanied by theoretical currents in career studies. A new perspective has directly opposed the notion of a "traditional career" (linear, stable, and predictable). The individual, not the organization, is responsible for the success of their professional trajectory. This movement has been accompanied by a diversity of theoretical contributions, such as the boundaryless, the protean, the post-corporate, or the multidirectional careers concepts, to cite just a few (Baruch & Vardi, 2016).

However, the space where individuals experience their careers is shaped and formed by multiple issues that manifest at different levels (Mayrhofer et al., 2007), are influenced by different actors (Guimarães, 2008; King et al., 2005), and present themselves in diverse ways to distinct groups of workers (Baruch, 2015; Baruch & Vardi, 2016; De Vos et al., 2020). Considering that this movement occurs in a temporal and locally situated context, the relationship between cities and careers is experienced by individuals in multiple and multidimensional aspects (Tams et al., 2021). The context concept is "a

combination of social, political, economic, and cultural elements within a region that support the development and growth" (Spigel, 2017, p. 50).

Careers can then be understood from ecosystems (Baruch, 2015), in which there is a systemic and dynamic interaction between actors and contexts (De Vos et al., 2020). The ecosystem concept is rooted in Ecology science (Granstrand & Holgersson, 2020) and is commonly used in Management sciences due to the multidimensional, multilevel, and dynamic perspective (Gomes et al., 2021). It refers to the interdependent and not fully controlled interactions of a set of actors (Jacobides et al., 2018, p. 2264) that are entities (such as individuals, organizations, and nations) operating within labor markets, building an interconnected net, influencing each other, and generating value for the ecosystem (Baruch, 2015).

From this perspective, careers can also be seen through the lens of sustainability – a specific form of human sustainability in the labor sphere linked to the time dimension (Lawrence et al., 2015; McDonald & Hite, 2018). This view considers the interconnectivity, interrelationships, influence, and interaction between actors in the short and long term. It is characterized "by the development, conservation, and renewal of resources related to the career of the individual who works, including human and social capital (...) as well as personal characteristics " (De Vos & Van der Heijden, 2015, p. 11).

Understanding career trajectories is essential to better comprehending innovation processes due to how knowledge circulates (Vinodrai, 2006). The city's human capital influences innovative movements, generating and attracting economic and social resources (Carayannis et al., 2012; Florida, 2002; Stam, 2015), alongside other aspects such as infrastructure, finance, government, or business activity (Mulas et al., 2015). Regarding the space in which human capital develops, the city is a complex ecosystem beyond mere geographic proximity and cannot improve interaction and innovation alone (Boschma, 2005). Through the co-presence of many people, mostly strangers, the circulation of knowledge then enhances identity formation and opens up new ideas (Florida, 2002; Tams et al., 2021). These promising sources of innovation and new paradigms of life in society (Florida, 2002; Pratt, 2008) are created through the interaction of individuals from different backgrounds and perspectives.

Recognizing that innovation occurs through the generation and circulation of knowledge (Carayannis et al., 2012), there is a need to combine geographical closeness and cognitive, institutional, organizational, and social proximity (Boschma, 2005; Tams et al., 2021). When combined, these dimensions allow knowledge to flow between actors. Cities considered pleasant to live in and offer opportunities for cultural consumption attract people with different skills and talents, amplifying the potential to contribute to the labor market, innovation, and local prosperity in economic and social spheres (Florida, 2002; Montanari et al., 2021; Tams et al., 2021).

Methodological Procedures

Several authors have already discussed the importance of systematic review studies that use the existing research base to deepen the understanding of a particular topic, thus contributing to the advancement of knowledge (Adams et al., 2017; Petticrew & Roberts, 2006b; Tranfield et al., 2003). Therefore, to achieve the objective of this study, we conducted a systematic review of the literature using the Web of Science (WoS) database. This choice is justified since WoS is recognized as one of the most important scientific bases in the world (Petticrew & Roberts, 2006a). The process was divided into three phases.

Phase 1. Throughout December 2020, searches were performed based on the methodological assumption of the PRISMA statement (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) suggested by Urrútia & Bonfill (2010). We used the abstract as the key search field and realized eight independent searches.

We established five broad axes: career, cities, human capital, innovation ecosystems, and sustainability. The search was then executed with the related terms to these axes, using the key [career AND city OR cities] and their intersections with the related terms. For cities, we set the terms “livab*” (for livability and related), “attractiveness,” and “smart” (for smart cities and related), which is also related

to the innovation ecosystem axis, represented by "innovat*" (for innovation and related). For "human capital", we used the term itself and "talent*" (for talent and related) and "employability". For sustainability, we set "sustainab*" (for sustainability and related). The asterisk symbol (*) was used to search for related terms from the same root. We defined the scope of the systematic review based on the contemporary discussions of the mentioned topics. Significant literature about these topics can be seen in papers of a special issue of the prestigious journal Human Relations: Alacovska, Fieseler & Wong (2021), Curşeu, Semeijn & Nikolova (2021), Guo & Baruch (2021), Montanari et al. (2021), Tams et al. (2021). No temporal limitation was determined. We then define the following criteria: i) to only include published articles, disregarding other types of documents; ii) availability: to exclude articles in a language other than English and articles unavailable; iii) eligibility: to exclude articles that did not address or problematize, in a central way, the discussion of careers in cities; iv) eligibility: to exclude articles that used the term "city" only about the research location, which is not related to the object of this investigation. Initially, we found 274 articles. We then excluded two articles for availability criteria, 11 repeated articles, and 215 for eligibility criteria. The refined search resulted in a corpus of 46 scientific articles processed using the Iramuteq® software. After considering the results of the Iramuteq® analysis in phase two, we identified four articles that did not fit into any category and were then excluded. The final selection was composed of 42 articles. Figure 1 illustrates the process steps.

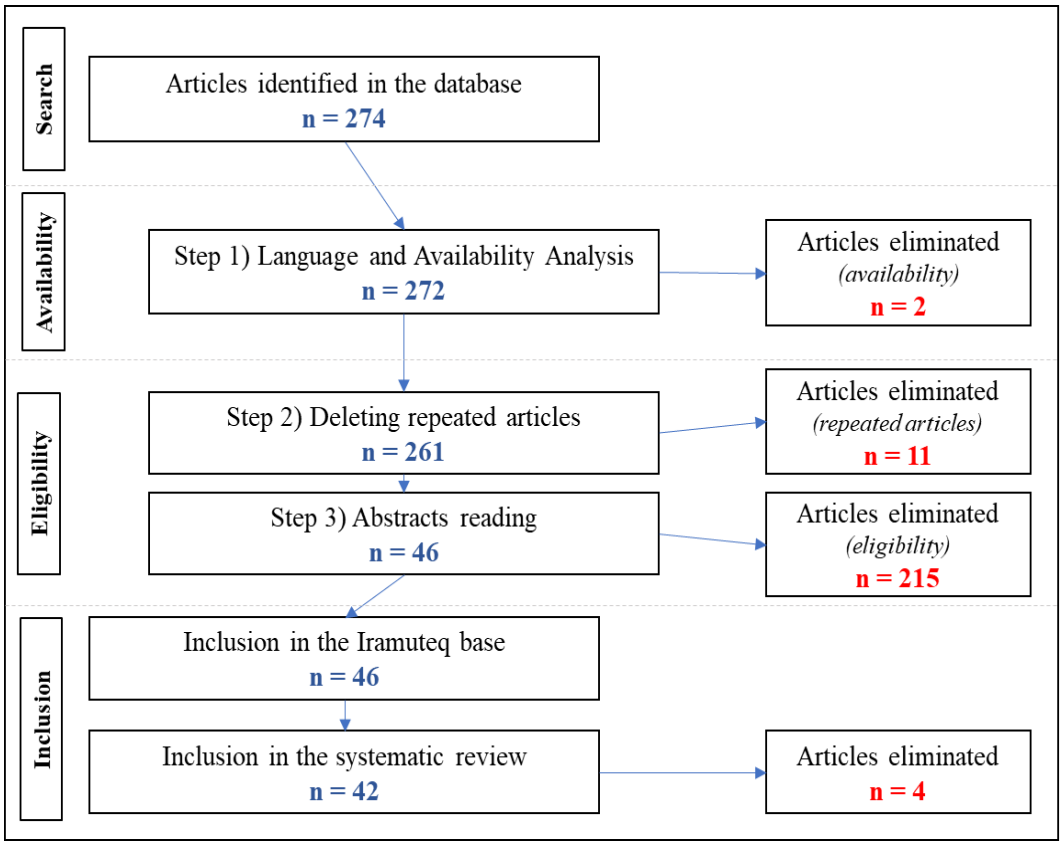


Figure 1. Search and selection process diagram

Phase 2. The 46 selected study abstracts were organized in a specific file to enable the use of the Iramuteq® software (*R Interface pour les Multidimensional Analyzes of Textes et de Questionnaires*, version 0.7 alpha 2). Iramuteq® is a content analysis tool and rigorous statistical processor of textual data. This software is used for semantic contextual analysis, extracting and quantifying the most significant structures (called elementary context units – ECUs) (Illia et al., 2014). Iramuteq® performs different types of data analysis, from simpler processes (such as lexicography) to multivariate analysis (such as descending hierarchical classification and similarity analysis) (Camargo & Justo, 2013). In this process, the corpus is divided into blocks, and the software uses chi-square tests to verify the association of context units into classes (Vallbé et al., 2005). These techniques facilitate and control interpretive biases, guiding

researchers' analytical processes (Macke et al., 2018). The software generates four main classes encompassing the different approaches to the topic under study.

Phase 3. Guided by the four categories generated by Iramuteq®, we conducted an interdisciplinary qualitative analysis of the 42 selected articles. All the articles were then fully read. The qualitative analysis of previous literature allowed us to identify the central elements, trends, and research gaps related to discussing careers in cities. Based on these studies, we present four assumptions to foster future empirical research.

The next session presents our main findings.

Systematic Review Results and Analysis

The 42 scientific articles selected for this study were published between 2000 and 2020, with a noticeable increase in publications observed from 2018 (see Figure 2). Among the selected articles, empirical research predominated (37 studies, or 88%), of which 20 (54.1%) used quantitative methodologies and 17 (45.9%) had a qualitative focus.

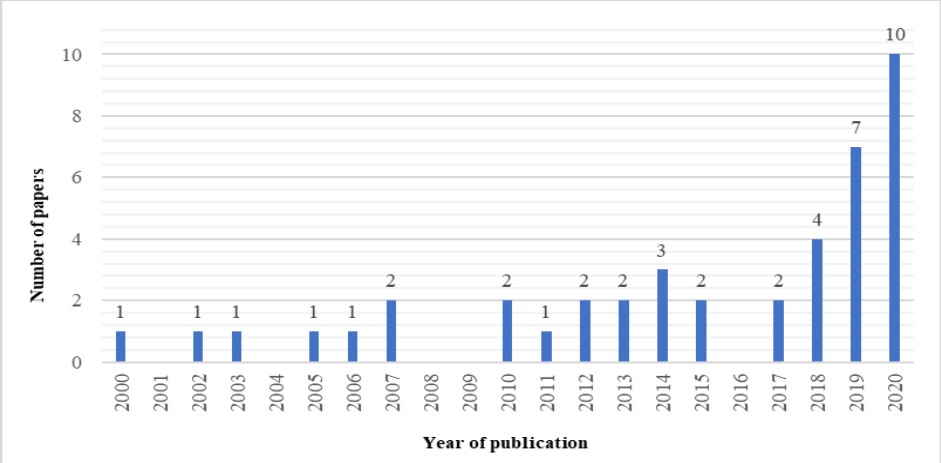


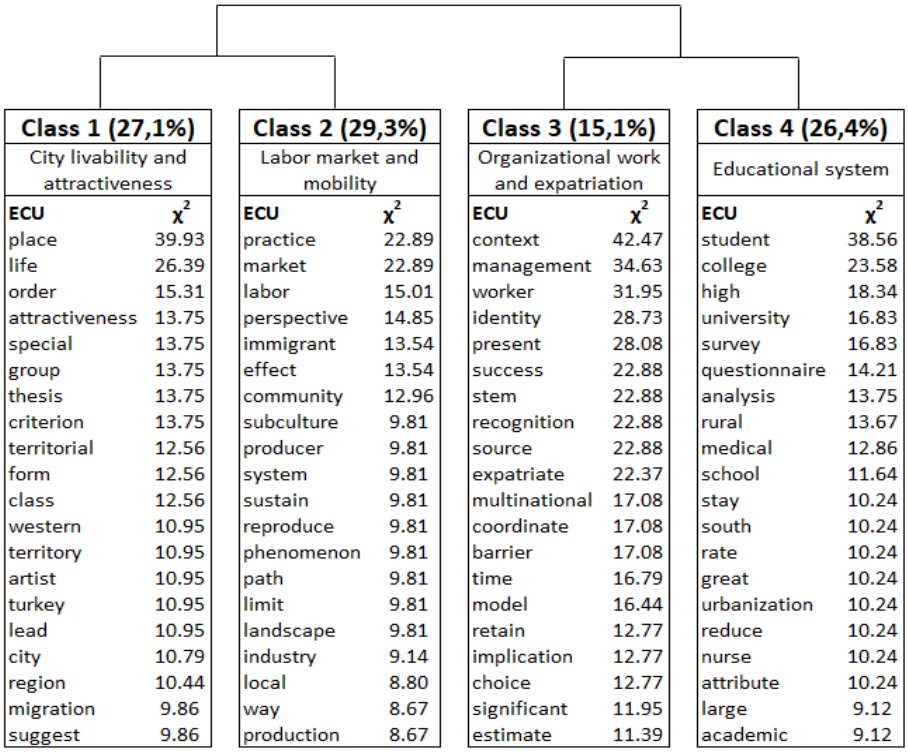
Figure 2. Number of articles per year of publication

Concerning the journals of publication, the papers are very dispersed within different Science areas, mainly concentrated in the "Human Relations" journal (Table 1).

Table 1.
Publications by journal

Source Title	Papers	Source Title	Papers
Human Relations	5	Journal of Cleaner Production	1
Environment and Planning A: Economy and Space	2	Journal of Coastal Research	1
Geoforum	2	Journal of Ethnic and Migration Studies	1
Urban Studies	2	Journal of Financial and Quantitative Analysis	1
Advanced Education	1	Journal of Science Education and Technology	1
American Journal of Tropical Medicine and Hygiene	1	Journal of The American Planning Association	1
Australian Geographer	1	Obrazovanie I Nauka-Education and Science	1
Bmc Health Services Research	1	Policy Studies Journal	1
Cities	1	Population Space and Place	1
Economic Geography	1	Public Administration Review	1
Ethnography	1	Quarterly Journal of Economics	1
Gifted Child Quarterly	1	Review of Economic Studies	1
Heliyon	1	Sage Open	1
H-Ermes-Journal of Communication	1	South African Journal of Economic and Management Science	1
Human Organization	1	Sustainability	1
International Journal of Human Resource Management	1	Wmcaus Symposium	1
Italian Journal of Planning Practice	1	Women's Studies International Forum	1
Journal of China Tourism Research	1	**Total**	**42**

Iramuteq® grouped the results into four main classes, making up 82.12% of the corpus ECUs. This approach allowed different perspectives to be considered when interpreting the phenomenon. First, the software calculated each word's chi-square values ($\chi 2$). Iramuteq® then created a dendrogram (distance tree) representing the classes' semantic relevance, which helped us analyze the distribution of the different concepts (see Figure 3). The class order in the figure reflects the Iramuteq® process of grouping the classes by similarity.



Class 1 (27,1%) City livability and attractiveness		Class 2 (29,3%) Labor market and mobility		Class 3 (15,1%) Organizational work and expatriation		Class 4 (26,4%) Educational system	
ECU	χ^2	ECU	χ^2	ECU	χ^2	ECU	χ^2
place	39.93	practice	22.89	context	42.47	student	38.56
life	26.39	market	22.89	management	34.63	college	23.58
order	15.31	labor	15.01	worker	31.95	high	18.34
attractiveness	13.75	perspective	14.85	identity	28.73	university	16.83
special	13.75	immigrant	13.54	present	28.08	survey	16.83
group	13.75	effect	13.54	success	22.88	questionnaire	14.21
thesis	13.75	community	12.96	stem	22.88	analysis	13.75
criterion	13.75	subculture	9.81	recognition	22.88	rural	13.67
territorial	12.56	producer	9.81	source	22.88	medical	12.86
form	12.56	system	9.81	expatriate	22.37	school	11.64
class	12.56	sustain	9.81	multinational	17.08	stay	10.24
western	10.95	reproduce	9.81	coordinate	17.08	south	10.24
territory	10.95	phenomenon	9.81	barrier	17.08	rate	10.24
artist	10.95	path	9.81	time	16.79	great	10.24
turkey	10.95	limit	9.81	model	16.44	urbanization	10.24
lead	10.95	landscape	9.81	retain	12.77	reduce	10.24
city	10.79	industry	9.14	implication	12.77	nurse	10.24
region	10.44	local	8.80	choice	12.77	attribute	10.24
migration	9.86	way	8.67	significant	11.95	large	9.12
suggest	9.86	production	8.67	estimate	11.39	academic	9.12

Figure 3. Systematic review dendrogram

Based on Iramuteq®'s statistical analysis and the content of each class, we defined and named four categories that represent different approaches to discussing careers and cities (see Figure 4): City Livability and Attractiveness, Labor Market and Mobility, Organizational Work and Expatriation, and Educational System.

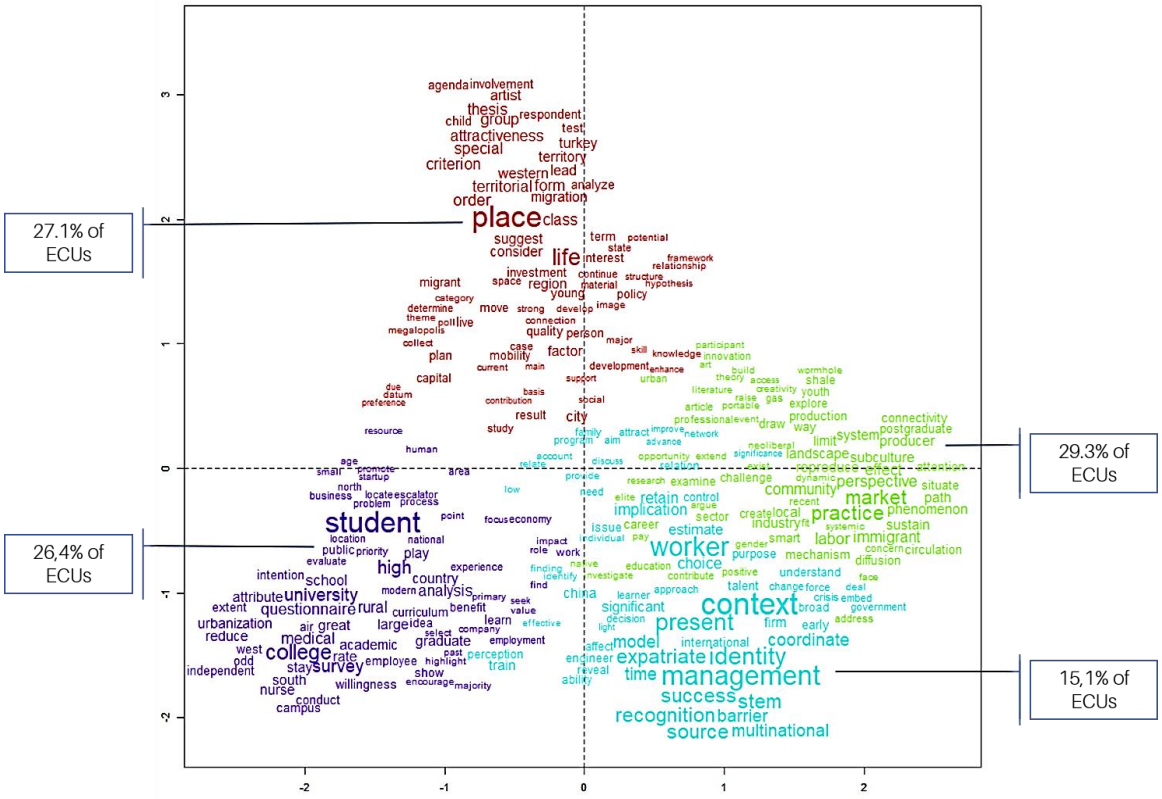


Figure 4. Main categories found in the systematic review

The first category, City Livability and Attractiveness, accounts for 27.1% of ECUs and highlights the significance of city standards in investment and career planning (Erdin & Ozkaya, 2020). This category groups territorial aspects, including livability, quality of life, the cities' attractiveness (Abramova et al., 2019), and career opportunities (Darchen & Tremblay, 2010). Notably, the discussions around the creative class stand out in this category, as it is viewed as fundamental in the current competitive and unstable scenario characterizing the knowledge-based society (Abramova et al., 2019; Antonova et al., 2019; Bennett, 2010; Champion et al., 2014; Darchen & Tremblay, 2010). This perspective emphasizes the importance of research that can support the actors of such ecosystems in directing policies aimed at planning urban life in a broad sense. The understanding of this category encompasses all facets of life (Erdin & Ozkaya, 2020), including subjective perspectives such as the concept of a "comfortable" city to

live in, as well as objective and instrumental aspects related to professional life development, career construction, and material well-being (Abramova et al., 2019; Antonova et al., 2019; Darchen & Tremblay, 2010).

The second category, Labor Market and Mobility, represents 29.3% of the ECUs and focuses on local attractiveness closer to the labor market. This category includes the need to understand migratory movements and the territorial mobility of workers between centers and their impacts on communities and cities (Vinodrai, 2006), particularly the social, political, and economic challenges that involve young people (Antonova et al., 2019; Schafft & Biddle, 2015; Snyder, 2012). The discussion that arises from this idea is interesting, at least in two different ways. First, global cities with a high density of capital and international networks work as magnets for professionals seeking to develop their careers. Second, less developed cities can suffer from the so-called brain drain. Social interactions play a vital role in the development of cities and foster a virtuous cycle that generates employment, income, innovation, and growth (Currid, 2007).

The third category, Organizational Work and Expatriation, encompasses 15.1% of ECUs and pertains to the organization and workspace, including the need to comprehend the discrepancies between the structure of the labor market and the ability to accommodate human resources (Gould, 2007; Ma et al., 2020). Studies highlight the potential of viewing careers as a chance for collaborative development beyond the individual perspective (Gould, 2007; Montanari et al., 2021). Some studies examine expatriation and the challenges of building the career and identity of workers (Bamberger, 2014) in unfamiliar territories (Kim & Cocks, 2017). The studies in this category also emphasize the importance of these discussions from the standpoint of smart cities and careers that involve highly intellectualized work - although they stress the relevance of secondary cities (Champion et al., 2014) and blue-collar jobs (Gould, 2007).

The fourth category, Educational System, represents 26.4% of ECUs and encompasses the relationship between careers, cities, schools, and universities, particularly the role of different social actors in constructing local, regional, and national development from an educational perspective (Dyason et al.,

2019). Studies emphasize the significance of the educational system (Voronina, 2015) in developing human capital through accelerated technological advances (Reyes-Ruiz et al., 2018). This assumption is based on the understanding that potential talent development in some strategic regions also interests public policies (Hao et al., 2020). They also highlight the role of students, seen as vital actors of territorial advancement, the attentive look to the younger generations, and the dynamic movements of attraction and retention of people in the flow of mobility between cities (Costa & Kahn, 2000; Hao et al., 2020; Silvestri et al., 2017).

The following section discusses these four categories based on what has been debated and articulated in international literature.

Discussion and Future Research Directions

The four categories presented represent important pillars for academic discussion of cities' circumscription concerning human, economic, and social development. This view is aligned with contemporary career theory discussions, which acknowledge that professional paths are constructed within a context (Mayrhofer et al., 2007) and that managing careers is not solely an individual endeavor. Although these categories are commonly used and applied to various knowledge fields, considering their interrelation could significantly contribute to discussions of careers. Our argument aligns with the idea of viewing careers and their management as part of a wider ecosystem (Baruch, 2015, p. 364) by recognizing the interconnectedness and interdependence of each actor, including individuals, organizations, and nations/societies, within a dynamic system

Therefore, by reaffirming: 1) the relevance of human capital, work, and careers for the socio-economic development and general well-being of society; 2) the importance and strength of the general environment in individual trajectories; and 3) the potential of innovation ecosystems for progress in social, political, economic and cultural aspects; we reinforce that these instances cannot be understood separately and distinctly. Furthermore, concerning public policies, the sustainable development of cities requires

solutions to their economic and social problems (Erdin & Ozkaya, 2020). It is crucial to understand that the discussion about human capital must be viewed at the individual and organizational levels while considering its connection with broader spaces, involving local, national, and global aspects (Guo & Baruch, 2021; Mayrhofer et al., 2007).

This interdisciplinary approach allows us to analyze themes at the frontier of knowledge in different research areas and explore future research directions. The interconnectedness and interdependence between the studies reveal the potential of the analysis. We propose possibilities for further exploration by establishing assumptions that may guide future empirical research.

Assumption 1: Good places to live and work positively influence the perspectives of a career future. Sustainable growth reinforces that individual career advancement is not separate from a collective endeavor (Curşeu et al., 2021). This involves not only examining the attractiveness of investments and the labor market's development in cities, including the availability of good jobs and professional growth opportunities (Bennett, 2010), but also everyday life experiences that encompass cultural, community, educational, political, and religious aspects (Tams et al., 2021). Consequently, career sustainability concepts (De Vos & Van der Heijden, 2015) and city sustainability are interconnected.

Viewing cities' appeal in conjunction with labor and development processes, Abramova et al. (2019) point out that they shape a future vision. This is linked to the strategic and sustainable development of spaces capable of meeting human needs in the long run (Antonova et al., 2019; Curşeu et al., 2021; Erdin & Ozkaya, 2020). Therefore, cities can be viewed as spaces that possess "territorial capital" (Antonova et al., 2019, p. 2), promoting a high quality of life and acting as a benchmark for desirable places to live and pursue a career (Alacovska et al., 2021; Tams et al., 2021). On the citizens' end, this perception includes the general notion of well-being, involving a trade-off between objective and subjective factors such as the cost of living, material and technological infrastructure, and career advancement opportunities (Alacovska et al., 2021; Kozhevnikov, 2021).

Moreover, high levels of livability positively impact labor markets by attracting and retaining talent. Bennett (2010) examines the concept of creative migration, which refers to the attractive power of

large urban centers. Smaller cities often lose significant economic and social players due to their limited potential for attracting and retaining talented workers. The forces of attraction of cities impact regional economic progress, expansion, and ingenuity. In this sense, the focus on the creative class workers becomes more relevant (Currid, 2007, Florida, 2003), as they can foster knowledge circulation, positively affecting various economic sectors (Antonova et al., 2019; Vinodrai, 2006). Notably, this group of workers goes beyond the artistic and cultural class limits. It involves the intensive use of knowledge, as in the case of workers focused on innovation and technological advancement, the so-called knowledge workers (Sánchez-Moral et al., 2018), who act as agents of innovation (Vinodrai, 2006). Attracting people from the creative class is crucial for post-industrial society, and the government should address this issue in urban planning as cities compete for these human resources (Antonova et al., 2019). Understanding and addressing labor market dynamics and professional trajectories require considering the perspective of knowledge circulation (Vinodrai, 2006).

Assumption 2: General labor market conditions of a city affects the attraction and retention of talents and career decisions. Regarding the attraction and retention of knowledge workers, it is essential to note that several factors influence career decisions and are not limited to individual aspects. Thus, the importance of synergy between actors can be highlighted by the need for coordination and co-creation between four instances.

Firstly, society, in a broad sense, plays a crucial role in cultural aspects that involve the image and the (de)valuation of certain professions (Ma et al., 2020). Secondly, the government acts as a source of support (Ma et al., 2020) and a stimulus agent based on developing incentive policies and measures (Scattoni et al., 2019). For instance, knowledge workers and professionals of the creative class demand a more vibrant cultural life (Currid, 2007). Therefore, culture can be considered a strategic issue for attracting and retaining talent and developed through public policies (Antonova et al., 2019; Currid, 2007; Hao et al., 2020).

Thirdly, the local industry plays a crucial role in the specificity of each segment, referring to managerial decisions that design and affect the labor market. For example, hiring practices for salaries

and other decisions involving human resources, such as the working systems to select, develop, and retain the workforce (Appio & Fernandes, 2015). There is a need to combine the quality of a place to live and the career opportunities offered, such as quality of work and salary (Darchen & Tremblay, 2010). Finally, the educational background refers to the capacity to train human resources in line with the demands and needs of the labor market, among other aspects (Ma et al., 2020). When there is an incompatibility between these instances, evasion and loss of professionals, organizations, and investments can occur, profoundly damaging the development cycle. This may happen, for example, when forming the workforce without considering the labor market needs (Bennett, 2010).

Assumption 3: The positive influence of the flow of ideas and knowledge affects the labor market, organizational work environment, and career development. The discussion of the relationship between cities and the creative class requires an understanding of the mobility of these workers, which refers to the flow of human capital - a continuous movement of ideas and knowledge combined with individual and macro-contextual factors (Sánchez-Moral et al., 2018). Therefore, it is possible to affirm that cities influence careers, including the migratory flows of highly skilled people (Kozhevnikov, 2021). Understanding creative class workers' career trajectories and mobility drivers is essential to analyzing innovative processes, as knowledge circulation significantly impacts labor markets (Vinodrai, 2006). In this sense, a positive perception of the city's livability, attractiveness, and organizational work environment can mitigate the "brain drain" phenomenon. Instead of solely avoiding it, there should be a focus on attracting and retaining foreign talent (Kozhevnikov, 2021). Career mobility incentives are multifaceted (Baruch, 2015) and related to several factors, including residential mobility and its relation to job mobility (Kronenberg & Carree, 2012). Job-changing considerations include family ties, commuting time, place attachment, and household expenses (Kronenberg & Carree, 2012). Therefore, the labor issue remains vital in determining migratory movements concerning the construction and improvement of careers. However, the workers' mobility should not be seen merely as a negative question since "brain circulation" can bring positive outcomes at the individual, organizational, and national levels (Baruch, 1995, 2015) and can influence the flow of knowledge.

After all, from an individual perspective, work is not just a source of income but a means of personal growth. Thus, individuals consider whether investing in skills enhancement offers some return in the labor market (Kozhevnikov, 2021). This finding reinforces the challenges faced, for example, by smart cities, as it is necessary to offer a labor market capable of accommodating different interests in terms of work opportunities, performance networks, and development continually (Curşeu et al., 2021). The importance of synergy between actors in the ecosystem can be seen here since territorial attractiveness involves cities, individuals, and organizations that are part of it. Furthermore, the perception of the non-monetary benefits of the general environment is reflected in people management policies, including remuneration to compensate for the lower quality of life indices, particularly in very competitive sectors and high-ranking positions in companies (Deng & Gao, 2013). The war for talent, as referred to by Faulconbridge et al. (2009), highlights this issue.

Assumption 4: The quality of the educational system positively affects the entire ecosystem in the long term. The interrelationship between the educational system and the labor market is linked to a future vision that requires looking at the younger generations (Voronina, 2015). Therefore, it is crucial to highlight the importance of the educational system in developing human capital capable of responding to rapid technological advances in a globalized world (Thirunavukarasu et al., 2020). For example, participating in a global market requires "cross-cultural interaction" (Vance et al., 2013, p. 1001) and fluency in global languages such as English. However, some countries where English is not the primary language do not have a tradition of fluently teaching citizens a foreign language, which makes a strategic and long-term outlook essential. This outlook must include planning and designing cities in line with the needs of new and global generations (Antonova et al., 2019). As Voronina (2015) points out, developing talent in various knowledge areas should be part of public development policies.

The expectation of future returns in the labor market influences individual investment in education. Reyes-Ruiz et al. (2018, p. 2) point out that the career's future in a particular field is related to the perceived attractiveness of that field, especially in technology and information. Therefore, promoting employability should begin with teaching and learning processes considering professional and career

advancement within school curricula. Cities and their public policies should develop teaching-learning programs to enhance scientific, technological, and behavioral skills to better prepare students for future professional activities (Voronina, 2015). Given the current technological landscape and demands of Industry 4.0, understanding young students' aspirations for a career in science and technology is crucial. This understanding is vital to developing public policies that cultivate a qualified workforce capable of excelling in these areas.

An educational system that cultivates STEAM skills (science, technology, engineering, arts, and mathematics) has a positive impact on the labor market. Dyason et al. (2019) emphasize the importance of universities in local and regional economic growth, highlighting direct and indirect benefits for cities with these educational structures. Higher education levels, in particular, are related to the economic growth and average salary levels of large cities due to the generation and absorption of knowledge (Costa & Kahn, 2000). Moreover, students' perceptions of a city's attractiveness, which includes professional opportunities, affect territorial mobility flows (Antonova et al., 2019). Hao et al. (2020) underscore a critical aspect of city planning: educational development is crucial for creating trained human resources or talents necessary for long-term planning and progress. However, retaining these talents can be affected if the city conditions do not provide an attractive urban environment. As Antonova et al. (2019, p. 99) report, "giving special attention to students as potential drivers of territorial development (city, region, country) are important in creating an attractive urban environment." These authors highlight that students must be given special attention as potential drivers of territorial development when creating an appealing city environment.

Throughout the discussion proposed in this study, several instances are intersected and interrelated when approaching the perspective of careers in context, specifically concerning the perspective of cities. Based on the systematic review undertaken in this study, it is possible noticing that the international literature encompasses: i) the understanding that cities exist from the notion of ecosystems, in which different instances interrelate (political and legal, economic, human, natural and social/informational); ii) the contextual notion of careers, based on the understanding that, in addition to the individual and

organizational perspective, several other elements influence people's professional trajectory; iii) the various possibilities that involve the notion of worker mobility and that promote and influence the circulation of knowledge – this understood as an element of fundamental importance for the ecosystems of cities; iv) the concern with attracting and retaining people, which involves different and related aspects, including the notion of livability, labor market and organizational structures, and the educational system; and v) the finding that innovative processes, so dear to contemporary thinking in the realm of the current uncertain, volatile and dynamic environment, are directly related to individual and collective well-being.

It is crucial to note that the issues discussed in this study require particular attention when comparing developed and developing countries. In developing countries, there are substantial challenges in building a qualified human resource base capable of operating in a competitive and technological environment and achieving long-term sustainability. Additionally, adverse environments necessitate collaborative actions by all ecosystem actors to mitigate or reduce their effects. (Shepherd & Williams, 2020; Reyes-Ruiz et al., 2018).

Final Considerations

Understanding careers in the context of cities – these viewed as a microcosm where social life takes place – has direct implications for "individuals, organizations, and urban policymakers" (Tams *et al.*, 2021, p. 15). Recent studies on careers have highlighted the context as a structure that limits and imposes adaptation needs, contrasting the overvaluation of individual aspects in professional trajectories. By aligning these viewpoints, this study analyzed how international literature articulates the constructs of careers and cities from human capital, innovation ecosystems, and sustainability perspectives. To this end, we used Iramuteq software for a systematic literature review of 42 previous studies from the Web of Science database. The software generated four classes based on the similarity of content, named "city livability and attractiveness," "labor market and mobility," "organizational work and expatriation," and

"educational system," which we used to present four assumptions that may foster future empirical research.

We reinforce the importance of integrated actions and partnerships between the public and private sectors and other organized entities by recognizing: i) that innovation is a force for development (Schumpeter, 1985); ii) that this movement is not linear, pulled by markets or pushed by technology (Leydesdorff, 2012); and iii) that the public management is not the only one responsible for transforming cities, regions, and countries. These initiatives, especially in innovation ecosystems, have become increasingly frequent in urban centers, and cities are more likely to adopt urban strategies to increase their competitiveness (Xu & Yeh, 2005).

Through work, innovation collectively materializes itself in citizens' daily lives, generating a source of income and personal fulfillment. The study of labor relations and people management must consider the intimate relationship with innovative processes, such as the network of norms regulating employment relations or the impacts on the work environment at the organizational level. In this sense, "the geographic dimension can be a tool for developing social connections, but it does not develop these connections by itself" (Mulas, Minges, and Applebaum, 2015, p. 8). Career capital must be analyzed beyond the individual perspective and understood as a "collective property" (Kozhevnikov, 2021, p. 5), involving contextual aspects that impact the construction of trajectories. An essential institutional role (Guo & Baruch, 2021) is drawn in a complex network involving different actors and affecting the design of careers, the labor market, and life in general (Vinodrai, 2006).

This study makes a significant contribution to topics that have received limited attention in academic literature. Specifically, it deepens the discussion of the relationship between careers and cities, building upon recent scholarship by Alacovska, Fieseler & Wong (2021), Curşeu, Semeijn & Nikolova (2021), Guo & Baruch (2021), Montanari et al. (2021), and Tams et al. (2021). Additionally, this paper reinforces the importance of contextual perspectives for career theory, as noted by influential authors such as Baruch (2015), De Vos et al. (2020), and Mayrhofer et al. (2007). Finally, this study sheds light on the

intersection of work and individual trajectories with innovation, highlighting the critical role of knowledge flows at macro, meso, and micro levels in innovation ecosystems.

This study also has important managerial implications, particularly for public policies. Firstly, by integrating innovation, career, and sustainability perspectives, it underscores the critical role that education plays in driving the prosperity and growth of a city, especially concerning the development of knowledge flows. Secondly, it highlights the interconnectedness between the structural dimensions of a city's everyday life and the individual drivers of citizens' decisions, such as geographic mobility.

This research can foster new discussions that may contribute to the debate about careers, sustainability, and the development of innovation ecosystems. Further empirical studies have practical relevance from economic and social development perspectives and may provide subsidies to encourage and articulate the active participation of individuals, organizations, and public entities.

Limitations of this article include terms and design choices and the use of papers' abstracts for the semantic analysis in the software. Future studies can deepen the discussion presented here, and empirical research could be an excellent opportunity to understand how the categories shown in the literature are being handled in reality. In addition, quantitative studies conducted by researchers in different cities, countries, scenarios, and contexts could expand the potential of this research and its contributions to society.

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