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THE UNNEEDED: TERRITORIAL AND SOCIOECONOMIC IMPLICATIONS OF REPLACING HUMAN LABOR WITH ARTIFICIAL INTELLIGENCE

OS INSERVÍVEIS: IMPLICAÇÕES TERRITORIAIS E SOCIOECONÔMICAS DA SUBSTITUIÇÃO DO TRABALHO HUMANO PELA INTELIGÊNCIA ARTIFICIAL

LOS INÚTILES: IMPLICACIONES TERRITORIALES Y SOCIOECONÓMICAS DE LA SUSTITUCIÓN DEL TRABAJO HUMANO POR INTELIGENCIA ARTIFICIAL

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ABSTRACT

The recent advancement of artificial intelligence and automation has repositioned human labor as a secondary variable in productive processes, placing pressure on how cities and regions are planned. This article discusses the emergence of a contingent of workers displaced from formal employment due to technological advancement, referred to here as “the unserviceable,” in order to highlight the mismatch between promises of reskilling and the structural limits of reintegration. Based on a theoretical-critical essay and a narrative review of studies on the future of work, local public finances, and socio-spatial reorganization, the effects of automation on employment-linked tax revenues, urban consumption, technological skill-based segregation, and the obsolescence of infrastructures shaped by commuting flows are analyzed. The text also presents a synthetic framework of possible responses basic income, new forms of taxation on automated production, and the redesign of urban functions discussing implications for regional planning and public management in post-work territories. that requires an interdisciplinary approach and the strengthening of public policies for disease control and responsible ownership.

KEYWORDS: Automation; Artificial Intelligence; Work; Regional Planning.

RESUMO

O avanço recente da inteligência artificial e da automação recoloca o trabalho humano como variável secundária nos processos produtivos e pressiona a forma como cidades e regiões são planejadas. O artigo discute a formação de um contingente de trabalhadores substituídos do emprego formal por avanço da tecnologia, tratado aqui como “inservíveis”, para iluminar o descompasso entre promessas de requalificação e limites estruturais de reinserção. Com base em ensaio teórico-crítico e revisão narrativa de estudos sobre futuro do trabalho, finanças públicas locais e reorganização socioespacial, analisam-se efeitos da automação sobre arrecadação vinculada ao emprego, consumo urbano, segregação por competência tecnológica e obsolescência de infraestruturas moldadas por fluxos pendulares.

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O texto apresenta ainda um quadro sintético de respostas possíveis renda básica, novas formas de tributação da produção automatizada e redesenho de funções urbanas discutindo implicações para o planejamento regional e a gestão pública em territórios pós-trabalho.

PALAVRAS-CHAVE: *Automação; Inteligência Artificial; Trabalho; Planejamento Regional.*

RESUMEN
El reciente avance de la inteligencia artificial y la automatización ha reposicionado el trabajo humano como una variable secundaria en los procesos productivos, presionando la forma en que se planifican las ciudades y las regiones. El artículo discute la formación de un contingente de trabajadores desplazados del empleo formal por el avance tecnológico, tratados aquí como "inservibles", con el fin de evidenciar el desajuste entre las promesas de recualificación y los límites estructurales de reinserción. Con base en un ensayo teórico-crítico y una revisión narrativa de estudios sobre el futuro del trabajo, las finanzas públicas locales y la reorganización socioespacial, se analizan los efectos de la automatización sobre la recaudación vinculada al empleo, el consumo urbano, la segregación por competencias tecnológicas y la obsolescencia de infraestructuras moldeadas por los flujos pendulares. El texto también presenta un marco sintético de posibles respuestas renta básica, nuevas formas de tributación de la producción automatizada y rediseño de funciones urbanas discutiendo implicaciones para la planificación regional y la gestión pública en territorios pos-trabajo.

PALABRAS CLAVE*: Automatización; Inteligencia Artificial; Trabajo; Planificación Regional.*

INTRODUCTION

In recent years, artificial intelligence (AI) and automation have ceased to be a distant promise and have become part of the productive routines of firms, governments, and service sectors[1].AI systems are now capable of generating reports, supporting decision-making, organizing logistics chains, and operating equipment with progressively reduced human intervention, thereby altering the pace, cost, and modes of task execution across multiple economic sectors. Rather than merely replacing outdated machines with more advanced versions, a new phase is emerging in which algorithms assume functions related to analysis, planning, and coordination, thereby reshaping the role of human labor within the productive system[2].

For a long time, the dominant narrative surrounding these transformations held that technology would eliminate certain jobs while creating others, provided that sufficient investment in education and training were ensured. More recent studies, however, indicate that productivity gains associated with automation tend to concentrate income, reduce labor's share across different sectors, and widen disparities between highly skilled groups and workers in more vulnerable positions. Under these conditions, the generic recommendation of "reskilling" no longer adequately addresses the scale of the ongoing transformation[3,4].

It is at this point that the article introduces, in a deliberately critical manner, an analytical category to designate a group of individuals progressively and durably excluded from formal employment, thereby highlighting structural limits to reintegration into the labor market. The use of the term “unserviceable” in this article is strictly analytical and critical, employed to describe a structural logic of organization within the contemporary productive system, rather than to characterize individuals or social groups. It constitutes a heuristic category aimed at shedding light on exclusionary dynamics associated with automation and should be understood at a systemic level, not as a value judgment about people. The focus lies on situations in which intermittent employment, platform-based work, gig activities, and social assistance benefits cease to function as transitional phases and instead come to define a relatively stable social position, marked by income insecurity and limited capacity to influence collective decision-making[5,6].

This reconfiguration does not occur solely at the individual level. Production chains that incorporate AI and robotics are reshaping the geography of development, reinforcing the advantages of cities and regions with robust innovation ecosystems and strong educational bases, while territories dependent on labor-intensive activities face job contraction, loss of economic dynamism, and increasing difficulty in attracting new investments. In many cases, factories, logistics centers, and service operations remain in place, but with progressively leaner workforces, thereby altering the role of these infrastructures in urban life[7].

This dynamic also affects the State’s financing capacity. As wage mass declines and local consumption weakens, tax revenues linked to income and the circulation of goods and services tend to decrease, precisely in contexts where demand for social protection, housing, healthcare, and public safety is rising[8]. Local governments are thus compelled to manage territories with a growing number of individuals detached from formal employment, fewer available resources, and constant pressure for efficiency, often translated into the rapid adoption of technological solutions that do not necessarily align with the needs of more vulnerable populations.

This article advances the hypothesis that AI-based automation generates not only occupational risk but also territorial risk, by concentrating long-term unemployment, recurrent informality, and discouragement within specific urban and regional areas. Structured as a theoretical-critical essay grounded in a narrative literature review, the text offers three main contributions: it shifts the debate from occupational substitution to the territorial scale; interprets the emergence of the “unserviceable” as a public issue; and articulates automation, local fiscal erosion, and urban governance in post-work contexts.

The structure of the article follows this objective. After the introduction, the methodological procedures and criteria for corpus composition are presented. This is followed by a discussion of the relationship between automation, AI, and the structural displacement of labor, with particular attention to the role of digital platforms and cognitive automation. Next, the territorial impacts of the transition toward post-work arrangements are analyzed, with emphasis on infrastructure underutilization, socio-spatial segregation, a new wave of deindustrialization, and fiscal erosion. The subsequent section frames the emergence of the "unserviceable" as a public problem that places pressure on services, data use, and the legitimacy of public administration. Finally, the article discusses possible responses, combining income protection instruments, urban policies, and regional cooperation strategies capable of preventing the transition to a post-work society from being managed merely as the administration of exclusion.

MATERIALS AND METHODS

The study is structured as a theoretical-critical essay, focusing on the articulation between automation, AI, and the territorial reorganization of labor. Rather than relying on primary data collection, the research adopts a literature-based approach, seeking to integrate contributions from economics, public administration, urban studies, and labor law around a central question: what happens to cities and regions when a portion of the active population comes to be treated as a structural surplus in a market driven by automated systems?

The review followed a narrative format, integrating empirical findings, conceptual formulations, and normative propositions from different disciplinary fields. Bibliographic searches were conducted through the CAPES Journal Portal, using a combined set of descriptors: "artificial intelligence," "automation," and "work." The temporal scope covered publications from 2001 to 2025, in order to capture both the classical literature on productive transformations and more recent developments associated with the diffusion of AI systems. The initial search yielded 71 studies. After an exploratory reading of abstracts, 33 works were preliminarily selected based on criteria of thematic relevance, analytical consistency, and contribution to the debate on the reconfiguration of labor and its socioeconomic and territorial effects.

In the subsequent stage, the selected texts underwent analytical reading and were classified into three main clusters: (i) studies on automation, tasks, and income inequality; (ii) research addressing territorial inequalities and differences between urban and non-urban spaces; and (iii) contributions focused on public policies, basic income, technology regulation, and smart city governance. At the end of this stage, 17 studies [9–25] comprised the article's interpretive

corpus. This organization made it possible to observe how discussions on income and employment inequality intersect with literature comparing the trajectories of different territories in the context of automation.

In parallel, studies addressing digital transformation in cities, the use of technology in public services, and the development of urban intelligence strategies were incorporated. These works contribute to understanding how digital infrastructures, data systems, and AI applications are appropriated by local governments, and how such choices influence the distribution of opportunities and resources within urban space.

The processing of the bibliographic material resulted in the construction of an analytical matrix articulating three dimensions: structural labor displacement, spatial reconfiguration, and institutional responses. Each text was analyzed according to its approach, empirical scope, central concepts, and implications for public policy. Based on this matrix, the argument was organized into thematic sections, rather than following a study-by-study commentary, thereby enabling the development of an original interpretive thread grounded in evidence already available in the literature.

As a theoretical essay, the study does not seek statistical representativeness nor does it aim to exhaust the debate. Its purpose is to provide an analytical framework capable of identifying and understanding the emergence of groups referred to here as “the unserviceable,” highlighting both the limitations and the potential of public responses to AI-based automation.

RESULTS AND DISCUSSION

AUTOMATION, AI AND THE STRUCTURAL SHIFTING OF WORK

The combination of automation and AI has moved beyond incremental improvements in machinery to become a central axis of labor reorganization. Across sectors, production chains are being redesigned so that automated systems operate continuously, with smaller human teams concentrated in supervisory, creative, and decision-making roles. This shift affects hiring practices, employment stability, and income distribution, widening the gap between those able to secure high-skill positions and those confined to tasks that can be readily replaced by software and robotics[14].

One way to understand this transformation is to shift the analytical lens from “occupations” to “tasks.” Rather than treating a job as an indivisible unit, firms and governments increasingly decompose work into smaller components, identifying what can be translated into code, rules, or data, and what still requires human judgment, physical presence, or direct care. Automation initially targets the most standardized elements of routines, leaving workers with a reduced set of functions involving mediation, complex problem-solving, or conflict management. This reorganization deepens the divide between those who design and control system architectures and those positioned at the operational end, dealing with demands that fall outside algorithmic boundaries[9].

When this mode of organizing work intersects with the logic of digital platforms, traditional employment arrangements give way to on-demand configurations driven by reputation systems and real-time demand. Applications mediating transportation, delivery, and micro-services calculate fares, allocate tasks, and monitor performance based on often opaque metrics, creating the impression that workers respond to an interface rather than to a clearly identifiable employer. This form of intermediation fosters fragile employment ties, income volatility, and the transfer of risks to individuals, who must bear the costs of equipment, extended working hours, and idle periods, often without access to social protection[17].

Even where formal contracts persist, the use of artificial intelligence within organizations is reshaping entry pathways and career trajectories. Automated résumé screening tools, digital profile analysis, and predictive performance assessments reconfigure employability criteria, filtering candidates before they have the opportunity to interact with human decision-makers. While such systems are often presented as tools to reduce bias and increase efficiency, they may reproduce preferences embedded in historical data, hinder the inclusion of non-linear career paths, and make it more difficult to challenge why certain groups consistently appear at the lower end of internal rankings[12].

The frontier of automation is no longer confined to repetitive tasks. Generative models capable of producing text, code, images, and analytical syntheses are advancing into functions that were, until recently, associated with exclusively intellectual labor. Reports, draft opinions, customer responses, and segments of software development are increasingly initiated or supported by AI systems, compressing execution time and reshaping how teams organize their routines. This transformation affects both creative occupations and technical support roles, which are no longer required in the same volume as in the past[14].

This expansion of cognitive automation repositions the debate on skills and qualifications. Mastery of basic tools or general digital literacy is no longer sufficient; workers must learn to interact with AI systems, interpret outputs, combine domain-specific knowledge with critical assessment of machine-generated results, and keep pace with frequent updates to platforms and models. Those unable to keep up with this pace are often labeled as lacking adaptability, even when the core issue lies in the speed of technological change and unequal access to continuous training opportunities[10].

From a macroeconomic perspective, discussions on automation often emphasize productivity gains while overlooking the question of who captures these gains and where they are concentrated. The literature comparing urban and non-urban areas suggests that regions with high concentrations of knowledge-intensive activities are better able to absorb technological shocks, whereas territories dependent on routine occupations face declining opportunities. In this sense, automation acts as a driver of spatial differentiation, reinforcing advantages in already privileged areas while deepening the vulnerabilities of mature industrial regions and urban peripheries[15].

When mapped territorially, it becomes evident that the risks associated with automation do not affect isolated occupations alone but are unevenly distributed across regions. Mid-sized industrial cities, metropolitan fringes, and areas with less diversified productive bases tend to experience combinations of prolonged unemployment, infrastructure underutilization, and declining tax revenues, while regions integrated into the digital economy maintain high-income employment and investment capacity. AI-supported geoprocessing tools can help identify where these processes are most acute and may guide reconversion policies—or, if misused, contribute to the consolidation of labels such as “surplus territories,” associated with the growing presence of those referred to here as the “unserviceable”[21].

TERRITORIAL IMPACTS: CITIES IN TRANSITION TO POST-WORK

The diffusion of artificial intelligence and automation is reshaping the flows of people, goods, and information in urban space, altering what for decades structured everyday urban life: the daily movement between home and work. With leaner production chains, the partial adoption of remote work, and the expansion of digital platforms, some neighborhoods retain high-income jobs and connections to global networks, while others accumulate persistent unemployment,

weakened local commerce, and underutilized facilities, concentrating within the territory the lived experience of the “unserviceable” and the families surrounding them[16].

In industrial cities and service-based metropolises, crowded terminals and packed transit stations once defined the classic mobility pattern. The automation of production lines and administrative tasks, combined with the relocation of part of the workforce to remote environments, is altering this choreography: transport corridors with excess capacity emerge, peak hours become less pronounced, and central areas lose the steady flow of workers that once sustained bars, restaurants, and small businesses. In many industrial districts, warehouses remain operational with reduced staff, while wide streets originally designed for heavy truck traffic now experience significantly lower volumes. This shift rekindles disputes over the future of terminals, public buildings, and idle properties, which may either fall into disuse or be repurposed as spaces for culture, training, sports, care services, and locally based economic initiatives[18].

Digital monitoring tools, near real-time data use, and AI-supported spatial analysis techniques make these transformations more visible by identifying transport lines with sustained declines in demand, underutilized facilities, and vacant properties in well-serviced areas. Rather than responding solely with budget cuts, governments can use this information to redesign transport networks, reconfigure the use of public buildings, and guide urban regeneration projects that connect former industrial sites and stations to new social functions related to the care economy, lifelong education, and community-based cultural activities[20].

The inequalities emerging across urban space are not limited to income; they are increasingly mediated by a form of technological compatibility. Areas located near universities, research centers, and digital-based firms tend to attract investment, skilled employment, and high-standard urban services, consolidating their status as innovation hubs and creative districts. Conversely, neighborhoods with weaker educational systems, lower average schooling levels, and limited digital infrastructure remain associated with routine and support functions—precisely those most susceptible to automation. The likelihood of confronting or escaping the label of “unserviceable” thus becomes deeply influenced by postal code, the distribution of public facilities, and proximity to knowledge-producing institutions[16].

This divide is either reinforced or mitigated by smart city strategies. When sensors, official applications, urban control centers, and digital services are concentrated in already privileged areas—frequented by tourists, executives, and high-income consumers—the perception is

strengthened that the city's digital future belongs to a restricted portion of its territory. In lower-income neighborhoods, the same agenda often appears as a distant promise, marked by overcrowded transport, maintenance failures, and overstretched services. An alternative approach is to use digital transformation as a lever to reorganize investment priorities, directing connectivity, public internet access points, service platforms, and equipped community centers toward areas where structural unemployment and discouragement have become routine[19].

At the productive level, a second-generation deindustrialization is gaining momentum. In earlier cycles, factories shut down or relocated abroad, leaving behind empty facilities and devastated neighborhoods. Today, many industrial units remain in operation but rely heavily on robotics and AI-based control systems, reducing the number of direct workers and weakening ties with their surrounding communities. The plant continues to function, trucks continue to circulate, but fewer families depend on those jobs, local commerce declines, and community facilities lose part of their user base. At the regional scale, command functions become concentrated in a few advanced centers, while mid-sized cities retain more vulnerable segments of the production chain and have limited capacity to negotiate social compensations in the face of automation[9].

This reconfiguration of labor has direct implications for the financing capacity of urban services. Fewer formal jobs lead to a reduced wage mass and lower tax revenues linked to income and local consumption, while demand for healthcare, social assistance, housing policies, and public safety increases—particularly in areas where the "unserviceable" and their families are concentrated. Simulations based on input–output matrices demonstrate how changes in the productive structure propagate across the economy, affecting income, consumption, and tax collection in multiple sectors. When productivity gains associated with automation are not accompanied by structured mechanisms of territorial redistribution, municipalities and regions with lower economic dynamism bear the heaviest burden of adjustment, struggling to maintain basic services under severe fiscal constraints[13].

Housing markets and land use patterns also reflect this transition. Neighborhoods that attract firms connected to the digital economy often experience sharp increases in property values, a concentration of residential developments targeting high-income groups, and the proliferation of sophisticated private services—pushing lower-income families toward distant peripheries, informal settlements, or occupation of risk-prone areas. In these territories, the condition of being "unserviceable" becomes intertwined with long commutes, housing precarity, and irregular access to healthcare, education, and cultural facilities. At the same time, the

combined use of geoprocessing and spatial intelligence makes it possible to identify vacant properties, underutilized areas, and urban voids in well-serviced zones, providing a basis for policies aimed at reoccupation through social housing, public facilities, and locally grounded economic initiatives—often in direct tension with interests that profit from land and property vacancy[21].

THE PUBLIC PROBLEM: THE EMERGENCE OF THE UNSERVICEABLE

FROM UNEMPLOYMENT TO DISCOURAGEMENT: PERSISTENCE AND TERRITORIALIZATION

In official statistics, the line separating unemployment, informality, and discouragement is often treated as a categorical distinction; however, in regions more exposed to automation, lived experience reveals a continuum: layoffs come first, followed by odd jobs, intermittent work, and platform-based activities, until the point at which some individuals simply stop seeking formal employment, as they no longer perceive a realistic chance of being hired in sectors that continue to reduce their workforce or demand increasingly selective credentials[17].This process does not represent a short-term cycle but rather a prolonged condition.

Task-based automation tends to disproportionately affect occupations held by individuals with intermediate or low levels of education, with stronger impacts on workers who already face disadvantages related to income, race, and territory[9]. When such workers are replaced by automated systems that neither earn wages, contribute to social security, nor consume in local markets, the resulting loss of income is not merely individual—it extends across families and entire community networks.

Over time, the absence of stable employment leaves visible marks on neighborhoods: stories accumulate of individuals who have “applied everywhere,” reports increase of workers circulating between digital platforms, occasional services, and social programs, and the notion of a career gives way to a succession of improvised strategies aimed at sustaining household livelihoods[17]. Younger generations become less oriented toward the expectation of stable employment and more toward combining small earnings, temporary migration, and family support.

These trajectories are not evenly distributed across urban space. Working-class neighborhoods, peripheral areas, and mid-sized cities with a strong presence of labor-intensive

industries are more severely affected, while central regions linked to advanced services and technology maintain more stable employment ties[16]. The emergence of the "unserviceable" is therefore both a social process and a spatial phenomenon, concentrated in areas where the productive structure has weakened and where protective policies have been less robust.

In territories where discouragement becomes widespread, multiple forms of sociability, survival, and support tend to gain prominence, including religious networks, community associations, cultural collectives, and informal labor circuits. In certain contexts, such vulnerability may also be exploited by actors who offer belonging, protection, or income in exchange for political, religious, or even criminal affiliation[17]. For this reason, the way public authorities interpret and respond to these territories plays a decisive role in determining whether the "unserviceable" will be treated merely as a matter of policing and emergency assistance, or as the central focus of a broader agenda of social reconstruction.

PUBLIC ADMINISTRATION UNDER PRESSURE: SERVICE, DATA, AND LEGITIMACY

As the number of individuals detached from formal employment and dependent on some form of support increases, the fiscal base sustaining public services is weakened by declining wage mass, reduced local consumption, and the restructuring of more automated production chains[13]. Municipal and regional governments thus face growing demands for healthcare, social assistance, housing, and public safety precisely when they have fewer resources and must compete for budget allocation with other priorities.

Within this context, artificial intelligence enters the public sector with the promise of improving data organization, forecasting demand, automating routines, and enhancing citizens' experience with digital services[20]. AI systems begin to support the screening of requests, queue monitoring, priority setting, and report generation, thereby reshaping decision-making processes within administrative structures.

AI-based human resource management tools are also increasingly incorporated into public recruitment, civil service examinations, and performance evaluations, often adapted from models used in the private sector[12]. When such systems filter applications and rank candidates, there is a risk that the public sector reproduces internally the same patterns of exclusion affecting individuals from territories where unemployment and precarious work are more prevalent.

At the same time, urban planning technologies supported by geoprocessing and AI enable detailed mapping of vulnerabilities, identification of overburdened facilities, detection of areas experiencing job loss, and recognition of underutilized transport networks[21].These tools are valuable for policy guidance; however, they may also be used to classify neighborhoods primarily as zones of risk, criminality, or "problem areas," without corresponding investments in social infrastructure.

The legitimacy of public administration increasingly depends not only on the volume of policies delivered but also on how data- and algorithm-mediated decisions are explained to the population and subjected to some form of democratic oversight[20]. In territories where the "unserviceable" are concentrated, any perception that technology is used primarily for surveillance, punishment, or denial of rights tends to deepen distrust toward the State.

Within this framework, the group referred to as the "unserviceable" emerges as a critical test for public governance: it may either be treated as an object of containment—through targeted policies aimed at maintaining order and preventing social unrest—or recognized as a subject to be included in the design of income support programs, urban initiatives, and care networks that combine human presence with digital tools[22]. The path chosen will determine whether the transition to a post-work society moves toward more democratic arrangements or toward increasingly sophisticated forms of managing exclusion.

POSSIBLE ANSWERS: BETWEEN REALISM AND DYSTOPIA

The advance of AI-driven automation generates polarized diagnoses: on the one hand, promises of near-unlimited efficiency; on the other, fears of a future with no place for significant portions of the active population. Taken in isolation, these narratives offer limited guidance for policymaking. Meaningful responses depend on decisions regarding income distribution, taxation, urban organization, regional cooperation, and the strengthening of care systems, ultimately determining whether the "unserviceable" will be treated as a managed surplus or as rights-bearing subjects within territories that remain socially active, albeit with fewer formal jobs[14].

Basic income has gained prominence because automation tends to displace segments of the population from the labor market for extended periods. Understood as a material floor independent of traditional employment ties, it shifts from being merely an anti-poverty instrument to recognizing that many individuals will not reenter stable occupations at the pace imposed by

technological change. Input–output models suggest that broad transfer programs can reinforce local economic circuits and sustain small businesses in regions that have lost industrial or administrative jobs to automated systems. The risk, however, lies in the appropriation of this agenda by segments of the technological elite, incorporating basic income into a framework in which algorithms generate wealth while a permanent layer of surplus population receives only minimal resources to sustain consumption and prevent social unrest[13].

In Brazil, this debate intersects with the historical trajectory of social protection systems and targeted transfer programs, requiring careful design to ensure that basic income does not become a pretext for weakening policies related to labor, education, housing, and urban services. In territories shaped by the presence of the "unserviceable," the most promising arrangements combine stable income with opportunities for education, participation in collective initiatives, and continuous state presence in healthcare, social assistance, and cultural provision, rather than relying solely on monetary transfers disconnected from broader strategies of social reconstruction[22].

Professional reskilling is often presented as an almost automatic response. Short-term courses, digital skills pathways, and training in data analysis or AI tools proliferate, based on the assumption that the right combination of skills will enable transitions into emerging occupations. This narrative overlooks the fact that automation itself is advancing into tasks involving analysis, writing, customer service, and programming, thereby compressing opportunities even for qualified profiles. Workers already engaged in informal employment, platform labor, or intermittent contracts face real constraints in allocating time for training and committing to long-term educational pathways, particularly when they reside far from training centers. Reskilling policies targeting the "unserviceable" must therefore include financial support, mobility solutions, and the extended use of schools and community centers, aligning these efforts with local development strategies capable of generating employment opportunities consistent with acquired skills[10].

Another key dimension involves redesigning taxation in response to automation and seeking fiscal balance between human labor and capital. As AI systems reduce the relative importance of payroll costs in firms, tax revenues linked to income and local consumption weaken, while a growing share of value is captured by those controlling machines, data, and algorithms. Reconfiguring this structure requires debate on contributions targeting profits and technology-intensive value chains, with the aim of financing funds dedicated to basic income, urban

reconversion, and investment in territories bearing the social costs of automation, rather than leaving the burden of adjustment on already strained municipal budgets[9].

Finally, the reorganization of urban space and the expansion of the care economy complete this set of responses. In contexts where a large share of the population no longer holds formal employment, it becomes essential to determine how to allocate available social time and repurpose idle infrastructure. Rather than turning peripheral neighborhoods into zones of waiting, underutilized warehouses, yards, and stations can be redirected toward cultural activities, education, sports, citizen science, and community engagement, combining urban planning, cultural policy, and solidarity economy initiatives. This approach must be accompanied by accessible transport, well-located housing, and expanded care services—including basic education, healthcare, support for children, older adults, and persons with disabilities, community mediation, and maintenance of public spaces that continue to rely on direct human interaction even in highly automated societies. By generating forms of work less susceptible to automation and strengthening support networks in vulnerable territories, the care economy helps reposition people at the center of urban and regional development, narrowing the gap between a realistic acknowledgment of the enduring presence of the "unserviceable" and dystopian visions that treat them solely as a managed surplus[23].

TABLE 1 - SYNTHETIC MATRIX OF TERRITORIAL IMPACTS AND MANAGEMENT RESPONSES

Observed Dynamics	Risk for Cities and Regions	Possible Public Response
Decline of jobs in standardized routines	Increase in informality, loss of local income, pressure on services	Tiered basic income; social protection; active labor market policies
Erosion of labor-related revenues	Fiscal constraints and reduced urban investment	Tax reform with neutrality; value capture mechanisms; strategic public procurement
Technological enclaves and spatial polarization	Gentrification and territorial exclusion	Affordable housing; integrated mobility; place-based skills development
Underutilization of commuting-based infrastructure	High maintenance costs and loss of vitality in central areas	Urban reuse; property conversion; redesign of centralities

Observed Dynamics	Risk for Cities and Regions	Possible Public Response
Automated production without local employment	Disconnection between economic activity and urban life	Territorial conditionalities; innovation agreements; incentives tied to employment targets

Source: Author's own elaboration (2026), based on the reviewed literature, particularly Acemoglu and Restrepo[9], Cazzaniga et al.[14], Capello[15,16], Candido de Sousa and Modesto Penna[13], Kubota et al.[18], Nunes et al.[19], Ribeiro et al.[20], and Rodrigues and Rosa[21].

THE CRISIS OF THE CENTRALITY OF LABOR IN URBAN GOVERNANCE

The modern city was planned around work: industrial zones, working-class neighborhoods, service centers, mobility systems structured by the daily home–work–home commute, and forms of social protection largely anchored in wage-based employment. The expansion of AI-based automation erodes this arrangement by reducing the centrality of formal employment as the organizing axis of urban life and by weakening the assumption that planning can continue to be guided by local or regional full-employment targets. The figure of the "unserviceable" makes this shift visible, as it refers not only to unemployed workers but to groups that become structurally surplus within production chains that continue to operate with fewer people and more code[14].

This transformation directly affects urban governance. Municipal budgets become increasingly dependent on volatile fiscal bases, marked by informality, compressed consumption, and fluctuating revenues, while pressure grows for healthcare, social assistance, housing, and public safety in territories most affected by declining employment. At the same time, development strategies persist that rely on the expectation that new investments alone will restore sufficient job creation to reintegrate those left behind. The "unserviceable" expose the fragility of this assumption: many new ventures are already established with high levels of automation, limited labor absorption capacity, and educational requirements far removed from the trajectories of a significant portion of the urban population[17].

The very narrative surrounding digital technologies and smart cities is also contested. Official discourses tend to present AI as a neutral instrument of efficiency, transparency, and participation, without acknowledging that the same systems may reinforce hierarchies, concentrate investments in areas already integrated into the information economy, and normalize

the existence of a permanent layer of surplus population. In this sense, the crisis of the centrality of work is not merely socioeconomic; it affects the ways cities and regions are governed, requiring arrangements capable of combining technology, resource redistribution, and territorial justice[11,18].

In the Brazilian context, the recent institutionalization of the Decent Work Observatory within the Judiciary provides an important anchor for this agenda. Established by Presidential Ordinance No. 412/2025, the Observatory was designed to monitor judicial policies and practices, track case law, systematize data, promote institutional coordination, conduct studies, and propose regulatory improvements[25]. In a recent reflection, Clemente Ganz Lúcio argues that such an institution should not be limited to retrospective documentation of violations but should instead monitor the future of work and contribute to real-time regulatory responses grounded in social dialogue and collective bargaining.[24] This argument reinforces the central thesis of this article: the territorial effects of artificial intelligence will depend less on technological determinism than on the public capacity to regulate, redistribute, and territorialize responses.

A PRACTICAL AGENDA FOR REGIONAL PLANNING AND URBAN MANAGEMENT

A practical agenda for regional planning and urban governance in post-work contexts begins with the capacity for fine-grained territorial analysis. Governments must identify where long-term unemployment, extreme informality, intermittent work, and underutilized infrastructures are concentrated, integrating administrative records, data generated by AI systems, and situated knowledge from residents and public service providers. Geoprocessing tools and spatial modeling techniques enable the mapping of pockets of discouragement, underused transport corridors, idle facilities, and urban voids in well-served areas, providing a basis for decisions that prioritize precisely those locations where the “unserviceable” are concentrated[21].

Based on this diagnosis, urban and regional development policies can be reorganized around three main fronts. The first is the provision of a stable minimum income for those outside formal employment, ensuring basic material conditions and reducing immediate survival pressures. The second is the reorientation of the smart city agenda toward neglected territories, through expanded connectivity, digital public services, infrastructure reuse, and a more equitable distribution of investments. The third is the strengthening of the care economy and in-person services, which continue to require proximity and human interaction. Rather than concentrating technological investments in already privileged areas, master plans, public budgets, and mobility

programs can be revised to bring healthcare, education, culture, social assistance, and employment opportunities to neighborhoods most affected by automation[19].

Another key component of this agenda is regional governance. Automation reorganizes production chains into networks that transcend municipal boundaries, rendering isolated responses insufficient. Intermunicipal consortia, metropolitan agencies, and regional forums focused on transport, land use, incentives, and social protection can serve as coordination mechanisms, including for negotiating compensatory measures with highly automated firms and establishing shared criteria for the use of data-driven technologies in public management. In this context, transparency, democratic oversight, and audit capacity become essential conditions to ensure that algorithmic systems do not reproduce, in code, the same hierarchies that deepen territorial exclusion[20].

At a broader institutional scale, the Decent Work Observatory may function as a complementary mechanism for monitoring, systematizing evidence, and disseminating regulatory best practices. By articulating data, research, and social dialogue around transformations in the world of work, the Observatory contributes to shifting the debate from reactive damage control toward the construction of more anticipatory and territorially oriented public responses[24,25].

CONSIDERATIONS

This article was grounded in the hypothesis that AI-driven automation produces not only the risk of occupational substitution, but also a structural displacement that expels entire groups from the formal labor market, concentrating these trajectories within specific neighborhoods, cities, and regions. The figure of the “unserviceable” was employed as an analytical device to illuminate this process, drawing attention to how work ceases to organize urban life in predictable ways and how this shift places pressure on public finances, social policies, and territorial development strategies.

By connecting the literature on tasks and automation, regional inequalities, smart cities, basic income, taxation, and the care economy, the article suggests that the transition toward post-work arrangements will be neither a utopia of liberation from employment nor an automatic catastrophe. The outcome will depend on decisions regarding who finances the transition, who participates in decisions about digital infrastructure, and who is placed at the center of urban

policies—whether investors and platforms, or the populations currently facing long-term unemployment, recurrent informality, and the erosion of social protection networks.

Addressing the “unserviceable” as a public issue requires more than marginal adjustments to employability programs. It calls for rethinking the articulation between income, urban space, technology, and care at local, metropolitan, and national scales. The path chosen in the coming years will determine whether artificial intelligence is remembered as a tool that deepened the management of exclusion or as an opportunity to renegotiate, with collective resolve, the place of work and non-work in the construction of more just cities.

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