

Between freedoms and (in)subordinations: experiences of female urban cycle delivery workers

Entre liberdades e (in)subordinações:
experiências de cicloentregadoras urbanas

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Abstract

Female cycle delivery workers are located at the intersection between bicycle use, gender relations, and delivery activities, and may be subject to the existing power relations in each sphere, interconnectedly. This article investigates the influence of these relationships on the experiences of female cycle delivery workers in the cities of Belo Horizonte and São Paulo. A content analysis of semi-structured interviews with fourteen cycle couriers was carried out. The results show the influence of power relations, especially on perceptions of insecurity, and the provisional and complementary aspect associated with the activity. Despite this, the transforming potential of the activity was also demonstrated, as it can provide an experience of great value in terms of female empowerment, freedom, autonomy, and resilience.

Keywords: bicycle; female cycle delivery workers; gender; power relations; (in)subordination.

Resumo

As cicloentregadoras estão localizadas na interseção entre uso de bicicleta, relações de gênero e atividade de entregas, podendo estar submetidas às relações de poder existentes em cada frente, de forma interligada. Este artigo investiga a influência dessas relações nas experiências de cicloentregadoras de Belo Horizonte e de São Paulo. Para tanto, foi realizada análise de conteúdo de entrevistas semiestruturadas com 14 entregadoras-ciclistas. Os resultados indicam a influência das relações de poder, em especial nas percepções de insegurança, e o aspecto provisório e complementar associado à atividade. Apesar disso, foi demonstrado, também, o potencial transformador da atividade, proporcionando uma experiência de grande valor no que diz respeito ao empoderamento feminino, à liberdade, à autonomia e à superação.

Palavras-chave: bicicleta; cicloentregadoras; gênero; relações de poder; (in)subordinação.



Introduction

Cycle-courier women workers can be found at the intersection of bicycle use in urban mobility, gender relations, and delivery activities. On one hand, these women are inserted into an urban structure planned around the privilege of automobile circulation, which controls and restricts other uses and modes of transportation. On the other hand, they are subjected to power relations between genders, which determine the spaces they can access and the activities they can perform. Finally, they find themselves subordinated to the masculinization of delivery work, which standardizes the bodies that can or cannot do the work given.

By this means, the precariousness to which women are subjected in the work of bicycle deliveries goes beyond aspects related to the work model, as they are subject to a social reality that influences their mental and physical integrity and their dignity (Soares et al., 2021). Nevertheless, bearing exposure to harassment, lack of safety, exclusion, and precariousness (Ferguson, 2016; Soares et al., 2021), yet these women resist.

In light of this context, it is possible to understand the questions that guided the development of this work. The aim was to understand the experiences of female cycle-courier workers in the cities of Belo Horizonte and São Paulo and how these experiences are affected by the power relations to which they are subjected. This is due to the fact that studying bicycle delivery workers allows for the identification of the conflicts experienced and the needs of these women, which surpass those experienced by men in a variety of aspects, potentially contributing to an (re)urban

planning that meets their needs. Furthermore, considering that these women are subject to three fronts of subordination, the analysis of their needs has the potential to encompass different aspects of this subjugation.

In this sense, this article aims to investigate the influence of power relations on the experiences of bicycle delivery workers in the cities of Belo Horizonte and São Paulo. To this end, semi-structured interviews were conducted with fourteen women who perform or have performed bicycle deliveries, with seven from each city. The interviews were recorded, transcribed, and submitted to inductive content analysis.

Moreover, as stated, this work is justified in light of the context to which bicycle delivery workers are subjected, but also because it fills a gap in studies focused on this target audience. In research conducted on Google Scholar in 2023, using different terms that refer to women who use bicycles for delivery, both in Portuguese and English, only five studies were found, covering various aspects of the activity. This highlights the need for further study on the topic, but also complicates the comparison with similar studies.

The bicycle

Urban mobility is characterized by a dualism that bears significant implications for society and individuals, influencing them markedly. On one hand, it is essential for the quality of life, well-being, and health of the population (Kent, 2021), facilitating access to employment, education, leisure, and healthcare systems, among other necessities (Hansmann et

al., 2022). Conversely, it may function as a constraint, impeding access to urban areas, amenities, and opportunities, thereby adversely affecting the population, or segments thereof (Kent, 2021).

Moreover, contemporary discussions surrounding urban mobility need not emphasize the predominance of the automobile within urban contexts. This is attributable to the fact that numerous cities have been designed and developed in accordance with the demands associated with these vehicles. Consequently, automobiles exert structural, economic, political, and cultural dominance within society, often being linked to ideals of freedom, status, reliability, and comfort (Kent, 2021). Nonetheless, it is evident that these individualistic ideals, embodied by automobiles and accumulated in excessive numbers, culminate in paradoxical outcomes: severe traffic congestion; escalated air pollution, collisions, and injuries; urban dehumanization; heightened anxiety and depression; and increased inequality (Babb, 2021; Kent, 2021).

These ramifications extend not solely to individual users but particularly to those for whom urban environments are not tailored, either due to their travel patterns or chosen modes of transport (Valdivia, 2018; Hansmann et al., 2022). Indeed, contradictions manifest between individualistic ideals and collective practices, necessitating rigorous analysis and critical reassessment.

Mitigating the adverse consequences of automobile dominance, ensuring equitable access to urban spaces and opportunities, and centering the genuine needs of the populace should be primary objectives within urban and transport planning. A more balanced transport

modal matrix, particularly concerning active modes of transportation, serves as a vital instrument for fostering change.

Cycling, as walking, is classified as an active mode of transportation that harnesses the energy of the human body to engender movement, potentially influencing urban areas and individuals positively. It may contribute to health benefits, diminish greenhouse gas emissions, promote a less frenetic and stress-inducing lifestyle, enhance a sense of responsibility toward urban environments, mitigate noise pollution, engender more human-centric spaces, facilitate social interactions, in addition to representing a practical, economical, and efficient alternative (Mizdrak, 2019; Kent, 2021; Stroope, 2021). In this context, the bicycle emerges as a viable instrument for instigating cultural change. However, its implementation in automobile-centric cities engenders resistance and tension (Kent, 2021).

Cycle logistics

Bicycles serve as a counterbalance to the predominance of motor vehicles within the urban logistics sector. Although its representation remains limited in the Brazilian context, cycle logistics characterized by the employment of bicycles in logistical activities (Schliwa et al., 2015), presents a viable alternative to conventional transportation modes.

While the utilization of bicycles in urban logistics is not a novel phenomenon, it has garnered increased attention in economic

discourse in recent years. This heightened focus is attributable not only to the inherent benefits bicycles offer urban environments and users but also to the emergence and proliferation of micrologistics platforms, alongside the implications of the Covid-19 pandemic (Reck, 2022). The flexibility, speed, ease, and convenience associated with micro logistics platforms have significantly amplified the growth and visibility of delivery activities (Andrade et al., 2023). Furthermore, the Covid-19 pandemic has intensified the transformation within this sector, which arose from protective measures and restrictions imposed to safeguard communities (Brasil, 2020), as well as from rising unemployment and wage reductions, prompting increased reliance on delivery services as a means to fulfill economic necessities, as supplementary income or as a primary occupation (Minarelli, 2020).

Despite this growth and heightened visibility, bicycle couriers confront daily conditions of vulnerability, attributable both to the nature of their work and to the characteristics of urban cycling environments. Individuals engaged in the micrologistics sector experience precarious working conditions, lacking employment stability and associated benefits (Abílio, 2020). The contemporary management and oversight of this workforce necessitate a readily available contingent of workers, remunerated solely for their output, devoid of guarantees regarding pay or working hours, with associated risks falling upon the workers themselves (Abílio, 2020).

Thus, while this activity is often 'marketed' under the apogee of entrepreneurship, autonomy, and freedom, workers remain subservient to corporate entities that dictate

the operational framework (Altheman, 2021). The vulnerability and precariousness experienced by delivery workers become particularly pronounced when considering cycling couriers, who navigate environments primarily designed for cars.

Women

When examining the delivery of bicycles by women, one observes a distinct form of vulnerability and subordination. The power dynamics experienced by women in public spaces extend well beyond the influence of automobiles and prevailing work models. Urban environments have predominantly been designed with the archetypal individual, an adult, white male, and his specific activities in mind (Greed, 2006; Valdivia, 2018). Consequently, individuals for whom urban spaces are not tailored are rendered disadvantaged, consequently generating inequitable opportunities. Moreover, patriarchal structures govern spatial functions and utilizations, relegating reproductive and caregiving responsibilities to women and constraining their access to public areas.

In this framework, since the 1970s, numerous studies have scrutinized the relationship between women and mobility (Ravensbergen et al., 2019). These studies have underscored the specificities associated with work-related travel, which may be influenced by women's hesitance to be in certain public spaces or the necessity for network-based travel (IDB and MDR, 2021). According to Macêdo et al. (2020), female mobility behaviors

are inherently more complex than those of their male counterparts. This complexity arises from lower employment rates among women, the obligation to engage in domestic labor, and the needs to travel for caregiving purposes. Within the Brazilian context, Macêdo et al. (2020) conducted research analyzing women's travel patterns in São Paulo, Salvador, and Florianópolis. The findings indicated a higher degree of immobility among women compared to men, likely linked to their increased likelihood of performing reproductive tasks, many of which take place in private settings. Furthermore, the investigation of modal split revealed a greater propensity for women to walk and utilize public transit, while a shift towards bicycle and individually motorized transport modes was noted. Considering that urban environments prioritize individual motorized vehicles; it can be inferred that non-users of this mode of transportation occupy a disadvantaged position. Such analyses, particularly concerning gender patterns, suggest that this disadvantage disproportionately would impact women.

In their analyses of travel motives, the authors noted a reduced participation of women in work-related travel and an increased participation in travel undertaken for the purpose of serving passengers. Furthermore, Macêdo et al. (2020) identified a notable influence on women's travel patterns in relation to the presence of children within the family structure. Consequently, a higher mobility rate and an augmentation in travel to serve passengers were observed when comparing women with and without children residing in the household.

As a critical component of mobility studies, this analysis of travel motives plays a fundamentally significant role in the planning of transport systems. Nevertheless, this aspect is frequently approached from an androcentric perspective, emphasizing trips associated with productive activity. In this context, Harkot et al. (2021) assert that transport planning has adhered to the generalist methodology of urban planning, with public policies predominantly focused on work-related travel, thereby neglecting the diverse forms of spatial mobility present in urban environments. Levy (2013) contends that this oversight results in a failure to acknowledge the various social positions and the multiplicity of user identities, as well as the social construction of public and private spaces, and the implications of transportation policy within the framework of social relations.

Given the unequal roles and positions within society, the planning of urban environments, along with the resultant inequitable control and access to available resources, renders transportation decisions a series of trade-offs concerning the purpose of travel, timing, mode of transport, and ultimately, the decision to travel. These choices thus do not operate as purely personal and individual determinations; rather, they are influenced by the context of unequal power relations (Levy, 2013). Consequently, women experience limitations in their lives due to social norms established within urban settings and the manner in which these environments have been designed, which serve to restrict choices, power, and opportunities, ultimately perpetuating male dominance and privilege (Kern, 2021).

The potential to exercise choices concerning mobility is further examined by Hanson (2010), based on insights derived from her literature review on the nexus of mobility and gender. The author notes the prevailing perspective that mobility serves as a source of empowerment, whereby increased spatial mobility is perceived as beneficial for women. Some researchers assert that the empowering nature of mobility is manifested directly through enhanced access to opportunities and destinations of interest. Conversely, other scholars posit that mobility is empowering for certain women simply by facilitating their departure from the home and the occupation of public spaces.

Hanson (2010) underscores that, while empirical studies indicate that spatial mobility can empower certain individuals, in other contexts, mobility may be perceived as oppressive. The author offers examples such as women who expend considerable time transporting others to various activities, individuals who undertake lengthy journeys to secure low-wage employment, and those for whom relocation may contravene their religious convictions. Consequently, she asserts the necessity of comprehensively examining the gendered and power dynamics associated with spatial mobility or immobility within each specific social and geographic context, distinguishing between individual choice and cultural imposition.

In a complementary analysis, Levy (2013) connects Lefebvre's (2011) concepts of the right to the city with urban transportation systems. Drawing on the rights of appropriation and participation implicit in the right to the city

(Lefebvre, 2011), the author evaluates the capacity of transportation systems to facilitate the realization of this right for all individuals. With respect to the right to appropriation, transportation enables individuals to access diverse uses and resources of urban space, which are essential to the quality of life for the population. Furthermore, presence within urban space during commutes may be construed as a form of appropriation, possessing both symbolic and material significance, particularly for those constrained by their social standing. This right to appropriation is inherently linked to the potential for empowerment, as articulated by Hanson (2010).

However, Levy (2013) emphasizes the necessity of acknowledging two dimensions in the examination of women's appropriation of urban space and resources facilitated by mobility. Firstly, the appropriation of public space is contingent upon and influenced by decisions stemming from the private sphere. Secondly, it is essential to recognize that transportation is currently commodified, which exacerbates inequalities in access

Fear operates as a mechanism of patriarchy, engendering a state of insecurity within public spaces that threatens and potentially undermines women's freedom and independence (Valentine, 1989). Accordingly, fear and feelings of insecurity impose a concealed cost upon women, manifesting in material consequences as they inhibit their ability to engage fully, freely, and independently within urban environments (Kern, 2021). In this context, women's mere presence in urban spaces constitutes a form of resistance

(Lyra, 2017), as they confront a city structure that fails to acknowledge their existence or activities. Even when occupying a marginalized position (Greed, 2006), and facing disparate responsibilities and opportunities relative to men (Muxí Martínez and Ciocoletto, 2009) alongside societal prejudice (Lyra, 2017), these women persist in their resistance. Kern asserts that “women constantly challenge their fears and act in courageous, empowered, and liberating ways in cities” (Kern, 2021, p. 212). The author further underscores the significance of female friendship in this context, positing its potential to influence women’s experiences of urban life.

These analyses elucidate the capacity of transportation to enhance the right to the city, particularly for those situated in lower social strata, who wield diminished power and prestige, as exemplified by women in society. However, realizing this potential necessitates a paradigm shift in planning and the execution of studies that encapsulate both the influence of gender on mobility and the reciprocal impact of mobility on gender. Absent such changes, transportation systems will perpetuate an inequitable distribution of access and mobility (Soto Villagrán, 2017). Ultimately, it can be concluded that the utilization of bicycles by women as a mode of transportation and labor in urban environments designed predominantly for individual motor vehicles presents greater complexity than analogous experiences for men. This complexity arises not only from the control exerted over their bodies through the chosen mode of transportation but also from the oversight of their use of public

spaces, which are frequently not recognized as belonging to them. Such forms of control have been the subject of deliberation and have positively informed the redefinition of women’s roles within society and their engagement with public spaces. Consequently, numerous publications have explored the historical impact of bicycles on women’s lives, illustrating their function as a facilitator of female emancipation (Fleming, 2015).

The preceding analysis reveals that cycle-courier women experience a triad of invisibility: as cyclists in cities primarily designed for automobiles; as women in a society predominantly oriented toward men; and as delivery workers within a masculinized sector. Nevertheless, these women continue to assert their presence and utilization of public space, thereby supporting themselves and others engaged in similar endeavors (Bonham and Koth, 2022).

Methodology

In order to examine the impact of power relations on the experiences of cycle-courier women in the urban contexts of Belo Horizonte and São Paulo, a qualitative approach was employed, with a focus on understanding subjectivities. The method utilized was semi-structured interviews, which are widely recognized in qualitative research for their inherent flexibility, benefiting both the interviewer and the interviewee (Duarte, 2005). These semi-structured interviews were

guided by a set of predetermined questions aimed at addressing the research inquiries, serving as a conversational framework. Consequently, the interview script was organized into six distinct sections: prior experiences before employment as a delivery woman; experiences during employment as a bicycle delivery woman; income and working hours; influence of environmental and social factors; experiences related to gender; and experiences beyond delivery.

The selection criteria for participants involved women from Belo Horizonte and São Paulo who are currently or have been engaged in bicycle delivery work. Thus, the sampling strategy focused on identifying participants who meet these criteria and can adequately represent the phenomenon under investigation. Identification of the cycle-courier women was conducted online, utilizing social media platforms and news reports. Furthermore, during the initial online contact, participants were invited to recommend other women within the specified target population, if feasible. Ultimately, seven cycle-courier women from Belo Horizonte and an equivalent number from São Paulo were identified and agreed to participate in the study, resulting in a total of 14 interviewees.

The interviews were conducted remotely, at a day and time specified by the participants. The Free and Informed Consent Form (FICF) was presented in advance, providing an explanation of the nature, rationale, objectives, methods, as well as the potential benefits and risks associated with the research, enabling the cycle-courier women to grant or withhold their consent to participate. All participants accepted the FICF, which was reiterated at the commencement of each interview, along with the authorization for audio and video

recording. The interviews occurred between September 8, 2022, and February 4, 2023, with durations ranging from 31 minutes to 2 hours and 13 minutes; the shortest interview was conducted with a participant from Belo Horizonte, while the longest interview involved a participant from São Paulo. Following the interviews, the recordings were transcribed into text format. Subsequently, MAXQDA software was utilized to facilitate the analysis. The data were entered into the software, and the inductive content analysis technique, as outlined by Bardin (2011), was employed. Following an initial reading of the data, the phases of coding and categorization ensued. The coding process involved transforming the data to represent its content or expression. Categorization entailed classifying the codes through differentiation and regrouping, thereby investigating their commonalities. As this is an inductive content analysis, the coding was conducted freely, emphasizing the most salient points within each interview,

Cycle-courier women from Belo Horizonte and São Paulo

The demographic characteristics of the research participants are shown in Chart 1. It is essential to acknowledge that the names have been altered to ensure the anonymity of the participants. The reported ages ranged from 25 to 54 years, with a mean age of 33.5 years. The majority of the participants self-identified as white (nine), while two identified as black, one as mixed race, one as Asian, and one preferred not to disclose their gender. Concerning educational attainment, all interviewees

Chart 1 – Characterization of the interviewed cycle-courier women

	Name	City	Age	Skin color	Education Level
1	Joana	BH	35	White	Graduate from Postgraduation
2	Deborah	BH	25	White	Graduate from High School
3	Júlia	BH	36	Prefer not to answer	Graduate from College
4	Gabriela	BH	39	White	Incomplete College
5	Carolina	BH	27	White	Incomplete Postgraduation Education
6	Ana	BH	31	White	Graduate from College
7	Fernanda	BH	34	Brown	Graduate from College
8	Renata	SP	27	White	Incomplete College
9	Larissa	SP	34	White	Graduate from College
10	Laura	SP	47	Black	Incomplete College
11	Victória	SP	26	White	Graduate from College
12	Letícia	SP	54	Black	Graduate from College
13	Andréia	SP	25	White	Graduate from College
14	Maria	SP	29	Yellow	Graduate from Colleg

Source: authors.

had completed a minimum of high school; one participant reported having completed postgraduate studies, one had incomplete postgraduate education, eight had attained higher education, three had initiated but not completed higher education, and one indicated that she had completed high school.

The demographic profile of the study participants exhibited notable differences from previous research conducted on Brazilian bicycle delivery workers (Aliança Bike, 2019; Labmob and Aliança Bike, 2020; Fundación Mapfre and Labmob, 2022). The most significant disparities pertained to racial and educational demographics. In the aforementioned studies, the percentage of participants identifying as black, defined as the aggregate of those self-identifying as black and brown, exceeded that of those self-identified as white. Additionally, the observed educational attainment was, on average, higher than that reported in the

other three studies, wherein the percentage of individuals possessing a higher education degree consistently remained below 10%.

Further characteristics of the participants, pertaining to the delivery context, are detailed in Chart 2. A greater representation of bicycle delivery workers who received or are currently receiving their assignments through collectives or cooperatives was identified, followed by those obtaining assignments directly from restaurants, companies, or clients. This profile may be attributable to the methodology employed in the identification of potential participants, which involved social networks and interviews; a different approach, such as active observation in public spaces, could have yielded alternative results. Moreover, it is important to consider that the observed discrepancies in comparison with other research involving bicycle delivery drivers may be associated with this particular demographic profile.

Chart 2 – Characterization of cycle delivery companies in relation to activity

	Name	Work method	Remains in work activity	Time in work activity	When ceased
1	Joana	Micrologistics platforms	No	1 month	2019
2	Deborah	Collective / Cooperative	Yes	5 years	–
3	Júlia	Collective / Cooperative	No	6 months	2016
4	Gabriela	Collective / Cooperative + Direct contact with the restaurant/company/client	No	1 years	2017
5	Carolina	Collective / Cooperative	No	1 month	2017
6	Ana	Collective / Cooperative	No	4 months	2017
7	Fernanda	Collective / Cooperative	No	2 years	Did not mention
8	Renata	Collective / Cooperative + Direct contact with the restaurant/company/client	Yes	8 years	–
9	Larissa	Collective / Cooperative + Cycle logistics company	Yes	3 years	–
10	Laura	Cycle logistics company	No	8 months	2022
11	Victória	Collective / Cooperative + Direct contact with the restaurant/company/client	No	2 years	2021
12	Letícia	Collective / Cooperative	Yes	2.5 years	–
13	Andréia	Collective / Cooperative	Yes	5 years	–
14	Maria	Direct contact with the restaurant/company/client	Yes	3 years	–

Source: authors.

Among the participants, eight have ceased delivery work, while six continue to engage in this activity. When assessing this information by city, it was noted that only one participant from Belo Horizonte remains involved in delivery work, whereas five participants from São Paulo continue to do so. Furthermore, regarding the duration of bicycle delivery work, a variation of time ranging from one month to eight years was identified, with an average of 2.4 years. The average duration for interviewees from Belo Horizonte was 1.3 years, whereas for those from São Paulo, it was 3.5 years. Consequently, it can be observed that, in general, the female cyclists interviewed

from São Paulo have been performing the activity for a longer duration. This assessment is significant, as it may influence their experiences in the field. Additionally, it is noteworthy that, with the exception of Deborah, all interviewees from Belo Horizonte ceased their delivery activities prior to the onset of the Covid-19 pandemic in 2020. Conversely, all interviewees from São Paulo continued their delivery work during this period, with the pandemic serving as a motivator for several of them. This information is crucial, as the Covid-19 pandemic contributed to a transformation in delivery activities, particularly in large urban centers.

Cycle-courier women: experiences and perceptions

Following the processes of participant selection, interview conduction, transcription, and data analysis, eighteen themes emerged, encompassing a diverse array of categories. This article aims to discuss the analyses and results that facilitate an examination of the influence of power relations on the experiences of the interviewed cycle-courier women.

The histories of the bicycle delivery women interviewed reveal a longstanding relationship with bicycles, originating in childhood when bicycles were predominantly utilized for leisure activities. However, eight participants reported discontinuing bicycle use during the transition from childhood to adolescence, resuming only in adulthood. Consequently, bicycles did not appear to be conceptualized as a viable mode of daily transportation during their formative years, necessitating additional experiences and motivators for their eventual consideration.

The motivations for utilizing bicycles varied among the interviewees. The most frequently mentioned category pertained to friendships, cited by nine of the participants. This included responses such as the presence of friends who cycled, encouragement from acquaintances demonstrating the feasibility of commuting by bicycle, accompanying a partner, and participation in cycling groups. Thus, the potential of interpersonal relationships to influence women's engagement with public spaces, particularly through the use of bicycles, is underscored, echoing the assertions made by Kern (2021): *"And then I met someone who, like,*

introduced me to this world... this universe of bicycles in Belo Horizonte, which I didn't know (Interview 5 - Carolina).

The convenience and accessibility afforded by bicycles were among the most frequently cited motivations, with this mode of transport commonly portrayed as a remedy for daily mobility challenges, particularly with regard to public transport. Issues highlighted, including the duration of commuting and the time spent waiting for buses, as well as perceptions of insecurity during such waiting periods, can largely be attributed to urban planning that prioritizes automobile use.

[...] it (the bicycle) reappeared in my life when I was 18, 19 years old, yeah... when I realized that I had a mobility problem. [...] And I still remember to this day the first day I did everything by bike. [...] And it's crazy, because I say that the bicycle saved my life with this [...]. (Interview 13 – Andréia)

The feelings cause in the participants by using the bicycle were also diverse. The most mentioned, by eleven of the interviewees, was freedom, which for many was also related to feelings of autonomy, power, knowledge, emancipation, independence, empowerment, and control; that is, the feeling that they can choose where to go, when, and in the way they wish, without depending on others. These sensations indicate that much of what has been discussed and studied since the 1890s (when the first publications emerged reporting the historical influence of the bicycle on women's lives and how it represented a tool for female emancipation) regarding gender and bicycles remains present in today's cities. The narratives of delivery-riders highlight the control exerted

over their bodies in public space, influencing their mobility, both through the available transportation systems and through the roles and norms imposed, which determine if and when they can be on the street, the physical strength they are able to expend, their dependence on others to be in public spaces, and how their movements are limited by fear. These preconceptions are challenged by the bicycle, which grants the sensation of freedom, power, and autonomy and shows that 'everything is possible'.

[...] I think it's kind of empowering, because you have the idea that, you know, you're taking yourself to distant places, like... with your own body... especially being a woman... and like, being able to know that I can reach anywhere and I only depend on myself.
(Interview 5 - Carolina)

Other emotions identified included joy and contentment; experiencing the urban environment in an alternative manner; health; overcoming challenges; autonomy; quality of life; resilience; and irritation. The latter emotion, shown by one participant, is particularly noteworthy. For her, frustration arises from the perception of a lack of legitimacy as a cyclist within the urban landscape, necessitating compliance with spaces designated for motor vehicles, or resorting to alternative modes of transport to safely utilize a bicycle. This viewpoint, while expressed by only one interviewee in response to inquiries regarding emotions associated with cycling, is significant as it underscores the extent to which the prevailing automobile-centric culture, which influences urban planning and infrastructure (Kent, 2021), can be internalized by individuals.

To initiate the analysis of the experiences of cycle-courier women in relation to their activities, participants were queried about the factors that motivated them to commence deliveries via bicycle. Seven primary motivations emerged from their responses: financial considerations; social connections; activism; a passion for cycling; physical exercise; and leisure time. Financial motivations were noted by nearly all of the women, with remarks indicating unemployment or engagement in informal work, seeking a primary income source, addressing specific expenses, or supplementing existing income. Among the factors discussed within this category, the impact of the Covid-19 pandemic warrants particular attention. In five interviews with participants who are or have been involved in deliveries in São Paulo, financial challenges stemming from the restrictions imposed during this period were emphasized.

Motivation pertaining to friendships was addressed by half of the participants, with expressions such as having friends who were cyclists and who invited them to engage in the activity, the desire to participate in order to assist their friends, and being encouraged by friends to utilize the bicycle to fulfill a financial need. Thus, it is evident that friendships played a pivotal role in both the participants' daily bicycle use and their initiation of delivery activities, supporting the assertion of the significance of relationships in the manner in which women engage with public space, as discussed by Kern (2021).

Several cyclists also expressed initial apprehension regarding the commencement of delivery work, uncertain about their

capabilities, while noting that the support and encouragement from friends facilitated their entry into this domain. These accounts underscore the pervasive messages of fear that pervade women's perceptions (Valentine, 1989; Kern, 2021), particularly those linked to the perceived risks associated with delivery work, which may serve to impede their participation in such activities, yet can be confronted through social relationships. Although the financial motivation was cited by a majority of cycle couriers as a reason for their involvement in the delivery sector, only six participants acknowledged that this financial return provided a sense of financial independence when queried. Nonetheless, some of these women indicated that such independence was only temporary, further asserting that the financial gains were both limited and unstable.

The availability of support infrastructure for delivery workers was another topic presented to the participants. Only three of them indicated that their workplace provided such infrastructure. An equivalent number reported that the collective or cooperative in which they participated offered support for a limited time, which was subsequently discontinued. Notably, participants referenced informal support points, including establishments partnered with the collective or cooperative; networks cultivated by the delivery workers themselves; residences of delivery workers; and public spaces. Additionally, some participants underscored the advantages of lacking a fixed location, as this flexibility enables them to share their support networks across the city, given that delivery work is inherently non-static and dispersed throughout urban space.

Participants were similarly queried regarding the ramifications of engaging in delivery activities. The most prominent category identified was the alteration in their relationship with the city, articulated by eleven participants, and predominantly encompassed two assertions: it permitted them to perceive the city from a different perspective and enhanced their understanding of the urban environment. The assertions encapsulated in this category illustrate the potential of utilizing bicycles to fortify community ties, enhance local affiliation, foster interactions, and promote the use of public spaces (IDB and MDR, 2021). These potential benefits became particularly salient in the narratives concerning the experiences of riding a bicycle. Moreover, such advantages may be even more pronounced for delivery women, as prevailing power dynamics often impose constraints on women's access to public spaces and the range of activities they are permitted to engage in. *But like, the best way to get to explore São Paulo, you know? In these three years that I've lived here, I think I know more about São Paulo than people who have lived here their whole lives* (Interview 8 – Renata).

A change in urban mobility was identified as the second most significant effect of delivery services, as noted by five participants. This category encompassed aspects related to increased autonomy in transportation and alterations in behavior within traffic contexts. This category corresponds with the emancipatory and empowering potential of the bicycle, as it facilitates access to opportunities and preferred destinations without reliance on companionship from others, regardless of

their involvement in delivery. *Yeah, it changed this issue of autonomy that I told you about, right? It made me feel more comfortable going to certain places that before I would say 'oh, I won't go' or 'if I don't have company, I won't go,' right?* (Interview 12 – Leticia)

To further examine how power relations shape the experiences of women cyclists, participants were queried regarding their perceptions of insecurity during cycling activities. This topic's significance resides in the capacity of fear and the perception of insecurity to constrain choices, agency, and opportunities, particularly salient for women due to the power dynamics and privileges associated with their gender (Valentine, 1989; Levy, 2013; Soto Villagrán, 2017; Kern, 2021). The analysis of the responses yielded the following categories: sexual harassment and general harassment; traffic-related concerns; assault, theft, and robbery; time of day; location; infrastructure; day of the week; and absence of perceived insecurity. Notably, most interviews revealed that these categories were not regarded in isolation; rather, they were interconnected with other perceptions. This finding underscores the multifaceted nature of insecurity and fear-inducing elements experienced by women, which interact holistically and warrant a collective analytical approach. *And then as women we are afraid of everything, right? Anything can happen like that* (Interview 6 – Ana).

The harassment and sexual annoyance were addressed by all participants. These categories encompassed statements pertaining to unpleasant or uncomfortable behaviors experienced by the cycle-couriers against their will, whether manifested through verbal

comments, proposals, intentions, or non-verbal expressions. The shared experiences underscored the relationship between such behaviors and gender, including instances where the presence of a male mitigated harassment, remarks made by men themselves, and perceptions that certain scenarios would not occur with a male bike delivery worker. These experiences illustrate the phenomenon identified by Kern (2021), wherein many men do not acknowledge women's right and desire to occupy public spaces unaccompanied, a situation that arises from power relations entrenched in patriarchal societies and reinforces these dynamics, thereby compelling women to seek companions for their safety.

Men can go to many more places than we women do... it's... feeling safe. Not that we can't go places, but it's just that they have more of this confidence, this security, you know, that no one will do anything to them. (Interview 14 – Maria)

It is important to note that certain statements reflect a degree of normalization regarding harassment and interactions characterized by harassment, as evidenced by phrases such as “normal harassment” and “this happens every day, every day, my whole life.” This observation underscores the entrenched nature of power relations within society and illustrates how women's perceptions and experiences are shaped throughout their lives, often in subtle ways that render harassment as a normalized and adaptable experience.

Many cycle delivery workers, women, reported experiencing skepticism regarding their ability and competence to perform their

duties, along with expressions of surprise from doormen, customers, and passersby upon recognizing that a woman was executing the delivery. Such preconceptions are primarily informed by existing stereotypes surrounding the delivery profession and gender. These findings resonate with those presented by Ferguson (2016) and Cheron et al. (2022). Nonetheless, similar to Ferguson's study (2016), some female delivery cyclists noted that the surprise expressed upon discovering that a woman was responsible for the delivery is not necessarily perceived as negative. *Dude, there are things I hear that just leave me in disbelief. People are very sexist, like, really sexist. In traffic too, like... they don't understand what I'm doing, my hustle, right* (Interview 13 – Andréia).

Among the answers categorized under sexual harassment and harassment, the inferior status of bicycles within the public perception in comparison to other modes of transportation and the devaluation of delivery work were prominently noted. In this context, narratives emerged in which individuals advised female cyclist delivery workers to acquire motorcycles or pursue alternative employment. The accounts within this category thus delineate three dimensions of power relations to which female cyclist delivery workers are subjected: as cyclists, as women, and as delivery workers.

Conversely, the testimonies of four interviewees also merit emphasis, as they articulated feelings of increased respect attributable to their identities as female bicycle delivery workers. This perception of respect was conveyed in relation to male delivery workers, with interviewees perceiving themselves as being afforded better treatment than their male

counterparts, as well as in the context of their personal experiences as cyclists beyond the scope of delivery work.

Traffic emerged as the second most frequently cited source of insecurity among female cyclist delivery workers. The majority of fears pertaining to traffic were associated with urban design, the dominance of automobiles, and their perceived superiority, which necessitates that cyclists vie for road space that automobile users regard as theirs. Nonetheless, certain testimonials also connected this fear to gender-related issues, reflecting societal attitudes, including harassment and violence against women in traffic, which are frequently normalized and accepted. *Well... I think there's a question about traffic... about the driver seeing a woman on a bicycle like that, right? Like... about how comfortable a man feels in... in violating a woman, right?* (Interview 6 – Ana).

Ten women commented on the influence of the time of the day on perceptions of insecurity, particularly noting that engaging in this activity during nighttime induced heightened feelings of vulnerability. This observation aligns with Ortiz Escalante's (2017) assertion that the dichotomies of public/private and woman/man are exacerbated during nighttime. Only one participant referenced the specific day of the week, expressing apprehension regarding deliveries on Saturdays, particularly in residential areas, which tend to be less populated. This perception is linked to the enhanced sense of security afforded by busier streets, as the presence of other individuals fosters the impression that potential intervention may be possible if necessary. *At night I didn't feel so safe, but it wasn't... because*

of the guys. It was because of the nature of the job and because at night... right? Darkness brings in the people who want... right? To do things (Interview 1 – Joana).

The third most frequently addressed category, identified by eleven participants, was assault/theft/robbery. This category encompassed statements related to the insecurity experienced when utilizing a bicycle, instances of equipment theft, and incidents of product theft. Within this framework, participants discussed various measures implemented to enhance safety, including alterations to routes or the cessation of deliveries altogether. The facilitation of such decisions necessitates the utilization of mental maps, which are constructed either directly or indirectly from personal experiences, collective experiences, or preconceived notions, and which delineate areas where women perceive safety or lack thereof, thereby enabling them to evade insecure locations. In a related analysis, the implications of the city's geographical positioning in generating insecurity were examined. Responses within this category included references to locales the interviewee was familiar with and deemed unsafe, as well as those that induced insecurity due to unfamiliarity, rendering it impossible to foresee the experiential conditions to be encountered.

Infrastructure was acknowledged as a factor influencing the perception of insecurity by six interviewees. Initial attention is directed toward the sensations associated with cycling on bridges and viaducts, as articulated by cycle delivery personnel from Belo Horizonte and São Paulo. This sense of insecurity is intrinsically linked to the urban design of cities. Prioritization of automobiles and enhancements to their mobility through specific interventions, such as

road widening and the construction of viaducts, result in increased risk for users of alternative modes of transportation (WRI Brasil, 2021). This model of urban planning necessitates that the diverse feelings of insecurity associated with varying routes and locations depicted in women's mental maps are sometimes juxtaposed to ascertain the least unsafe option in each scenario. *There are all these issues of evaluating which is the safest place, right* (Interview 2 – Deborah).

The interrelation of sexual harassment and general harassment, traffic, location, and infrastructure reveal significant perceptions regarding insecurity on cycle paths. These perceptions align with the findings of Harkot et al. (2021), who suggest that while infrastructure can enhance feelings of safety, it is insufficient to promote greater participation of women in cycling. The cycle paths identified by participants in this study may not adequately address the needs and preferences of women, as indicated by Garrard (2021), and thus fail to alleviate the various fears stemming from entrenched social and cultural issues, as articulated by Graystone et al. (2022). Consequently, it is imperative to incorporate considerations of how infrastructure can impact women's perceptions of safety within cycling planning.

And I still use [the bike path in the city of São Paulo], kind of against my will, but the fear is very great, you know? No, it's, nobody cares, like, man, if I'm in... if I'm on the bike path, I run the risk of being robbed or raped, if I'm on the avenue, I run the risk of losing my life to being run over, by someone who doesn't care, they just want to know if they're right and I'm wrong, and they'll run over me to prove they're right. Because man, life nowadays seems worthless, you know? (Interview 8 – Renata).

In continuing to analyze the impact of power relations on the experiences of cycle-courier women, additional dimensions of the relationship between gender and cycle logistics were examined. Eight participants identified factors related to restroom access and the menstrual cycle as detrimental to the efficacy of women engaged in cycle deliveries. The responses within this category support Ferguson's (2016) findings regarding the adverse conditions faced by cycle delivery women, attributable to (limited) access to sanitary facilities, while also expanding upon this by addressing the implications of the menstrual cycle on both restroom use and job performance. Conversely, Laura pointed that these factors do not constitute a hindrance but instead necessitate a degree of planning on the part of the cycle-courier woman.

A higher number of men engaged in delivery activities compared to women was spontaneously noted by seven participants. This observation supports the analysis conducted by Soares et al. (2021), which indicates that this is a predominantly male activity, as well as the findings from the research by Aliança Bike (2019), Labmob and Aliança Bike (2020), and Fundación Mapfre and Labmob (2022). *It is not normal to see women working with deliveries, there are way fewer women than men, it is a profession much more common for men to have* (Interview 8 – Renata).

Six cycle-couriers analyzed the physical attributes of women and their correlation with bicycle delivery employment. While some participants highlighted the superior physical strength of the male body, others contended that this attribute does not serve as a barrier

to performing bicycle deliveries, as women are capable of accomplishing tasks equivalent to those of men in terms of weight and distance, with the primary obstacle being sexism. Conversely, for two of the cyclist delivery women, the discourse was more closely linked to sociocultural factors rather than to the physical fitness of women.

No, I think that, in general, for women, it is like this... It's already more difficult, for deeper reasons too, right? Yes, men are generally encouraged to do more things with their bodies [...]. For me, it was already a thing of "wow, I'm putting myself in danger, I'm insecure." So, it's something to pay attention to, because I think that for women it's more difficult to ride a bike in general, and to work on a bike even more so, right. (Interview 2 – Deborah)

When participants' relationships with bicycles beyond the mere consideration of physical fitness, it is essential to recognize the influence of societal encouragement on men since childhood. In contrast, many women, even those who begin to utilize bicycles during childhood, face various forms of discouragement throughout their lives. These observations align with Young's (1980) analyses, which suggest that gendered behaviors in activities necessitating movement and bodily engagement transcend biological differences and are intricately connected to the societal positioning of women within patriarchal and sexist frameworks. In the realm of cycling, the social impositions and discouragements directed at women can be further examined in light of the public nature of this activity. Such criticisms have persisted since the inception of modern bicycle usage (Fleming, 2015)

and are still evident in contemporary society, influenced by the prescribed roles and spaces designated for women, as well as the societal domestication of female bodies (Harkot, 2019). *I think that... being a cyclist and being a woman like that, I think there's a challenge in the city. It's... there's a... I don't know, I think there's an extra effort, you know, for us to be on the street* (Interview 6 – Ana).

The aforementioned statements reiterate that enhancing women's participation in cycling, whether for recreational purposes, commuting, or occupational use, presents considerable complexity, encompassing various social dimensions and the power dynamics that govern them. Consequently, significant cultural and social transformations are imperative, necessitating the examination of deeply ingrained issues within individuals and societies.

In addition to exploring the motivations behind the involvement of interviewed delivery cyclists in cycling logistics, the analysis also encompassed the factors prompting them to consider discontinuation. Health emerged as the primary motivation cited by the majority of delivery cyclists, as referenced in six interviews, encompassing both physical and mental well-being. It is noteworthy that this category was recognized not only as a motivator but also as a benefit of cycle logistics, due to the opportunity for integrating physical exercise with monetary compensation. However, participants acknowledged that such a perspective often romanticizes the activity, failing to accurately represent the broader reality. According to the interviewees, the interplay between health and bicycle deliveries necessitates a nuanced examination involving numerous factors, such as the voluntary nature of using a bicycle for deliveries, the requirement for physical fitness,

the physical demands inherent to the task, the necessity of transporting substantial loads, the need for a balanced diet to accommodate energy expenditure, which is frequently infeasible given the nature of the work, long distances, among other considerations.

Therefore, the identification of health as a motivating factor for the abandonment of bicycle deliveries by these cyclists underscores the inherent unhealthiness associated with prolonged engagement in this activity and challenges the romanticized notion often attributed to reconciling financial benefits with the pursuit of physical exercise.

Yeah, I was a bit... exhausted, right? [...] But then I started to get tired, I didn't have... I don't know... the energy to do anything else. On weekends, I would... when I went out like that... wow, barely, because I was very tired. I couldn't go out, I couldn't study, I couldn't do anything... (Interview 9 – Larissa)

The second most frequently identified category as a motivator for leaving or contemplating ceasing from deliveries was perceptions of insecurity, as expressed by five cycle delivery workers. As discussed, these feelings, while potentially impacting all cycle delivery workers regardless of gender, are experienced in diverse manners and involve distinct factors for each individual. Consequently, these perceptions can be more restrictive and limiting for women, thereby further constraining their participation in cycle logistics. Thus, the testimonies of the delivery workers illuminate the concealed costs associated with fear. *Well, I think for me this [feeling of insecurity] is the issue that makes me... Um... think every day if I want to continue* (Interview 9 – Larissa).

Also addressed by five cycle couriers, the work model was identified as a motivating factor for stopping bicycle deliveries. Aspects related to micrologistics platforms and financial returns were mainly mentioned. The discussions of the interviewees expose the precarization of activities embedded in uberization and the subordination to companies that continues to exist, even in the face of the touted discourses of entrepreneurship and individual autonomy.

Final considerations

This article aims to elucidate the influence of power relations on the experiences of urban cycle-courier women. These power relations pertain to the utilization of bicycles in urban environments dominated by automobiles, to gendered power dynamics that dictate accessible spaces and permissible activities, and to engagement in an occupation traditionally perceived as masculine. However, the delineation of these modalities is not presented explicitly, as they are interconnected through ideological constructs that reinforce one another, with cycle-courier women typically subjected to all three modalities of power dynamics.

The interviews underscored the provisional and supplementary nature of the delivery activity. It was demonstrated that bicycle deliveries generally do not represent a sustainable long-term professional endeavor, considering the economic constraints, physical toll, employment model, and psychological coercion often associated with this line of work. Nonetheless, it is noteworthy that

participants indicated the activity's capacity to render significant experiential value in terms of empowerment, freedom, autonomy, skill development, and overcoming challenges, thereby transforming their relationships with themselves, others, and the urban environment. The formation of friendships among participants was also emphasized, both in relation to learning to ride bicycles and to initiating and persisting in the delivery work. Drawing from the theoretical framework and interviews conducted, it became evident that these social connections can play a critical role in mitigating the fear experienced by women in public spaces and supporting their engagement in the activity. However, it is important to acknowledge that the study predominantly involved delivery cyclists who received demand through collectives or cooperatives, which may have influenced the findings related to the experiences of these women. Thus, this represents a potential limitation of the study, as results from bicycle delivery women receiving demand via application platforms may reveal additional variables, and the findings cannot be generalized across all workers in this sector. In this regard, future research should explore a broader spectrum of demand solicitation methods to facilitate a more nuanced and comprehensive analysis of the activity, as well as a comparative assessment of the viability of various forms.

In conclusion, the challenges faced by bicycle delivery workers are not confined to gender; rather, these challenges are exacerbated by it. This conclusion is substantiated by analyses of motivations for entering the activity, perceptions of insecurity,

limited access to restroom facilities (which may be further complicated by the menstrual cycle), physical attributes, and reasons for exiting the profession. Nevertheless, the transformative potential of the activity is equally intensified by gender, serving as a form of resistance to

the power dynamics imposed upon women. Therefore, it is imperative to continue investigating this subject, incorporating both male and female delivery cyclists, to enhance the viability of this vocation for all participants in the future.

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