A STUDY ON THE HIDDEN EXPLOITATION OF LABOR PROCESS: THE CASE OF CHINESE FEMALE TAKE-AWAY RIDERS

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ARTICLE INFO
Date received : October 25, 2022
Revision date : November 11, 2022
Date received : November 23, 2022

ABSTRACT
While creating more employment opportunities for Chinese women, algorithm-centered platform technologies have further exposed Chinese female take-out riders to hidden surplus value and gender labor exploitation. By examining the labor process, labor reproduction, and surplus value production process, this paper reveals that women face value extraction outside of the childcare and family spheres; at the same time, the platform technology controlled by the logic of capital further intensifies the exploitation of women's living space and social reproduction spheres; in addition, this technology-driven labor group also breeds hidden gender violence and other current situations. This study aims to realistically illustrates the urgent need for the platform economy to address the hidden exploitation in the field of labor reproduction. The method used in the study is qualitative method. Chinese female takeaway riders, as a particularly present group in the platform economy, are equally subject to algorithmic exploitation and tight control of the labor process by the platforms.

INTRODUCTION
The era of new technological revolution is a new era represented by big data, artificial intelligence, algorithms, and a new generation of information technology (Escobar et al., 2021). The development of the platform economy is growing day by day, especially since the rise of the take-out industry has injected new vitality into the flourishing development of the Chinese catering industry (Huateng et al., 2021). The take-out industry has attracted many workers to join the ranks of take-out riders due to its huge potential of free disposable time, low entry threshold, and flexible income (Anwar & Graham, 2020). However, at the same time, the problems of work intensity, working hours, and work supervision patterns, coupled with the endless take-out chaos in recent years, have also put the industry in the public opinion debate. This paper attempts to reveal the dual control of algorithmic supervision and platform exploitation of female riders in the take-out industry by studying a special group, the group of female take-out riders, and to critically analyze the problem of surplus value exploitation faced by female take-out riders using relevant Marxist theories, as well as the dilemma of labor in the field of production and the unequal division of labor by gender, and finally analyze countermeasures and explore the way out.
Marx and Engels (2021) understood the labor force as "the sum of the physical and intellectual strength that exists in the human body, i.e., the living human body, and is used whenever a human being produces a certain use value. Labor is the potential capacity of human beings, which can be realized only when used and consumed in the labor process (Maddikunta et al., 2022). Therefore, only when labor enters the labor process the owner of labor power begins to provide it. Furthermore, labor processes are not independent; they are embodied in a particular mode of production. At the same time, any production is at the same time reproduction. In Capital, Marx and Engels (2021) says: "A society cannot stop consuming, nor can it stop producing. Therefore, every social process of production, in terms of its frequent connections and its constant renewal, is at the same time a process of reproduction." This social reproduction requires the reproduction of the conditions of production, as "the product of the corvée worker must be sufficient to compensate him for the various conditions of labor, in addition to his means of subsistence," and "this is always the same for all modes of production, this production is at the same time always a reproduction, and therefore a reproduction of its conditions of action." In this way, social reproduction must be simultaneously replenished with sufficient labor to ensure the smooth functioning of the entire labor process.

The value of the labor commodity produced in the whole labor process is determined by the socially necessary labor time required for its production and reproduction by society (Bieler & Morton, 2021). The value of the labor commodity includes the value of the means of subsistence necessary for one's own life, the value of the means of subsistence necessary for raising children, and the cost of the worker's re-education, which are conducive to the reproduction of labor, the further continuation of the supply of labor and the attainment of the level of labor required for the development of capitalist production, respectively (Van Onzen, 2021). It can be seen that the complex composition of the costs of labor force reproduction includes not only the reproduction of the worker's development but also further extends to the members of his family and children of his offspring.

The platform economy of the digital age has included the reproduction of the labor force in a new round of capital accumulation process (Hammer & Karmakar, 2021). In addition to accelerating capital accumulation, platform technology has further implicitly intensified the contradiction between workers and capital, especially the further plundering of workers by capital. This plundering is firstly reflected in the process of labor reproduction. The takeaway platform seems to "create consent," but it further intensifies the control of the whole labor management process, which not only further erodes workers' autonomy but also further intensifies the squeezing of labor reproduction time. Female take-out riders, who are burdened with both family responsibilities and take-out labor, are hardly aware of the political economy fact that "exploitation is precisely the appropriation of other people's surplus labor", and are thus forced to be trapped in capitalist production relations in the platform economy, at the cost of selling their surplus labor.

The Marxist theory of surplus value holds that the capitalist, in the process of capitalist production, makes the labor force enter the labor process by purchasing the particular commodity of labor and eventually produces the value of the commodity (Pauls, 2022). The difference between the commodity value formed by the laborer's physical and mental effort and the value of the labor force is called surplus value. This surplus value is created by the laborers' surplus labor and appropriated by the capitalists without compensation, which profoundly reflects the capitalists' exploitation of the hired laborers in the capitalist production process. Marx's theory of surplus value further argues that capitalists, in order to seize more capital, constantly increase the exploitation of workers and adopt the production of absolute surplus value as well as relative surplus value, and gradually change the mode of production through simple collaboration, division.
of labor based on collaboration, and large machine industry. The development of productive social forces and the intensification of the exploitation of workers further contribute to the production of relative surplus value.

According to the total capital formula: G-W-G', the main goal of capitalist production is to increase G' (Rui et al., 2021). This "increase" is called surplus value by Marx. The capitalist labor process is more complex than any previous form of society in that it is both a labor process and a value-adding process, as well as an evolution of labor and technology. In order to maximize the surplus value capture of the capital, capitalists must find ways to overcome the boundaries of the physical conditions of the workers themselves as well as the restrictions imposed by social morality and law on the maximization of profit extraction. To overcome these difficulties, capitalists introduced machines and used more advanced technology to achieve covert control over laborers, thus making technology an essential tool for value appreciation.

However, it is difficult for workers to realize that the oppression of workers by technology, including the "seizure" of their jobs and the division of labor dictated by technology, comes from the capitalist relations of production, not technology itself. Technology itself is not class-attributable or oppressive, but once it is in the hands of capitalism, it becomes a tool for oppressing workers and exposing them to further hidden exploitation and labor control through the complicity of technology and capitalism.

**METHOD**

This study uses qualitative approach method case report study. By utilizing case study research, the researcher will obtain specific expertise or insight into the issue they have chosen to explore, which is typically a contemporary one. Case study research permits the researcher to examine the phenomenon within its context. Case studies are empirical investigations in the sense that they are based on knowledge and experience, or in a more practical sense, they entail the collecting and analysis of data (Creswell & Poth, 2016). Moreover, the hidden exploitation of labor process: the case of Chinese female take-away riders. In addition, literature review also included in this study. A literature review article provides a complete assessment of relevant literature and instantiates prior studies to build the framework of knowledge (Paul & Criado, 2020). Literature review provides theoretical framework as the basis of study.

**RESULTS AND DISCUSSION**

As a representative industry in the new economic era, the take-out industry has attracted more riders to join it under its huge social development potential, low entry threshold, and flexible employment status. Initially, take-out riders were mainly male, but in recent years, some women have also started to join the industry. According to relevant data from the Workers' Daily, the research group found in a field survey of Beijing's takeaway riders that about 9.04% of the takeaway riders in Beijing were female in 2020. However, this proportion climbed to 16.21% in 2021.

A. **Control of Rider Labor Process Under The Supervision of Algorithmic Logic**

Unlike the traditional industry, the takeaway platform uses algorithms as the core logic and plays an all-around supervisory and control role in the rider delivery process. In other words, the control of takeaway riders in order taking, order dispatching, delivery route planning, and time intervals may seem to have an inevitable subjectivity. However, they are all controlled by the platform's algorithmic logic.

Through a study of labor control of take-out riders, Chen (2020) found that the rider labor process from arrival, pick up until delivery faced algorithmic GPS supervision and algorithmic judgment. This GPS supervision is reflected in the fact that the algorithm will
determine whether the rider has fully achieved each step based on the rider’s location; while the algorithm’s judgment is reflected in the fact that, on the one hand, the algorithm can judge and recommend a high probability order grabbing area for the rider, and reasonably plan the route and recommend the delivery sequence based on the rider's usual delivery situation; however, on the other hand, this supervision is given to the consumer, making the consumer to. On the other hand, we give this supervision to consumers, so that consumers can observe the whole process of dispatching orders from “God's perspective.” In this way, the algorithmic platform transfers most of the labor conflicts covertly to the conflicts between consumers and delivery personnel. While the algorithm's logic controls take away riders, they also face situations where the platform intentionally weakens labor-management conflicts and shifts labor-management relations to riders and consumers.

The subordinate relationship between takeaway riders as laborers and the platform has not changed. The platform controls the production and reproduction processes of workers. In addition, the algorithm intensifies the supervision of the labor process of workers and supervises their labor in all aspects, with strict disciplinary assessment and restraint for workers involved in the takeaway platform, and even circumvents the normal employment-labor relationship with the help of information monopoly and diverts labor-management conflicts, thus making workers face profound exploitation and control by the platform and the algorithm.

B. Labor and Childcare: Further Extraction of Surplus Value

In addition to the platform's monitoring and control of riders based on algorithms, female takeaway riders face another layer of hidden exploitation different from male riders, which is further exploiting the value of female domestic and childcare labor.

Throughout the testable history of labor reproduction, women have been the labor force and industrial reserve for capitalist labor reproduction. Since the 1950s and 1960s, British and American feminists have critiqued women's domestic work and how this "hidden labor" constructs women's subordination, based on a critical inheritance of Marxist labor reproduction theory. In order to supplement household income, educate children, or help the male workforce share the stress of life, some women are forced to work as delivery riders on platforms. As a result, many female riders are also burdened with childcare tasks, and family life needs to be taken care of. According to news reports, the big data on female takeaway riders shows that more than 80% are married and have children, and less than 20% of female riders are full-time. In this perspective, women are subject to the implicit exploitation of necessary labor and surplus production.

On the one hand, it is impossible to thoroughly socialize the family part of necessary labor. The cost of childcare and maintaining a family is so high that the average worker cannot afford total care in a for-profit institution or private care home. Although domestic work has been reduced in line with social development, women are still the mainstay of domestic work. On the other hand, the reduction in domestic labor contributes to the production of relative surplus value, as female riders enter the labor market through platforms that not only expand the industrial reserve of capital production but also further expose themselves to the exploitation of surplus value. Female riders are constrained on both sides between family care and entry into the labor process, increasing their burden and further exacerbating capital's exploitation and implicit control over female surplus value.

Kwan (2022) argues that female workers' platform labor, in which women use their surplus production to earn a living for themselves and their families, is in conflict with securing a childcare environment and family care. The female platform worker's responsibility for family care, on the one hand, and the means of earning a living, on the other, forces her surplus
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labor to be continuously extracted by capital. Previous studies have assessed women's "time poverty" and found that urban female workers outstrip men by about eight hours per week, which comes from the fact that women are responsible for the vast majority of unpaid work, i.e., family care. This unpaid family care now also faces further exploitation in the form of residual value exploitation beyond the household burden of female riders.

C. Gender Exploitation and Group Resistance

Sun (2022) of the Chinese Academy of Social Sciences has conducted extensive field research and argues that female riders, especially in China's second-and third-tier cities, need great courage to engage in such work. The takeaway platform seems to eliminate gender discrimination and treat men and women equally. However, according to the 2021 China Women's Workplace Status Survey Report, women are asked about marriage and childbirth, accounting for 90% of job inquiries, while men only account for 20%; according to the Takeaway Rider Career Sustainability Survey Report, about 87% of riders are men, while female riders account for only 13%; the takeaway platform takes the same reward and punishment standards, time penalties, and performance assessments make women face hidden inequalities in this industry.

In general, the hidden exploitation of the labor process built by the platform mechanism is clearly reflected in the gender division of labor. On the one hand, the takeaway platform makes stereotypical distinctions between male and female riders by using realistic gender stereotypes and age stereotypes, such as "women running takeaway work are more likely to face riding hazards and induce accidents" and "men are more suitable for such high-intensity order taking and dispatching tasks "The statement that "men are more physically fit than women and better suited for the job" is a solidified understanding of the gender division of labor, and the platform has logically taken advantage of this social understanding to naturally "label" different The platform has also taken advantage of this social perception to naturally "label" take-out riders of different genders, making take-out associated with stereotypes such as "male," "masculine," "strong," "young," etc. "This artificially constructs gender discrimination and exploitation, making it difficult for female delivery riders to truly integrate and hindering the free development and mobility of the workforce. On the other hand, the takeaway platform's unequal treatment and exploitation of gender with the help of its powerful algorithmic technology is also reflected in the control of labor time, labor process, and labor space. The strict time control of the takeaway platform, including the time of order taking, and order dispatching forecast to the time control in the middle of the road, is apparent, so that female childcare riders face obvious time and space compression. The labor process is completely occupied, and the necessary labor time to maintain labor production and reproduction is significantly delayed and reduced, making it difficult to take care of childcare, meals, and family care; this situation is significantly different from that of male delivery riders, who are less restricted by childcare and family care. Thus, the clear difference between the home production and in-production faced by female and male riders is also an essential factor in the reality of gender exploitation on platforms.

However, we also note that the platform economy has facilitated solidarity and cooperation among female riders to some extent. Even in the face of platforms intentionally constructing a gender division of labor, female riders compete and cooperate in fighting against gender discrimination, gender harassment, and potential gender violence in the labor process. This means that the process of social reproduction creates opportunities for women's solidarity and cooperation, allowing female riders, who seem to be in a disadvantaged position, to explore their potential and collectively fight against injustice within the female community, which also creates conditions for promoting a more just and reasonable gender division of
labor and addressing the gender exploitation and potential gender violence faced by female riders.

CONCLUSION

Chinese female takeaway riders, as a particularly present group in the platform economy, are equally subject to algorithmic exploitation and tight control of the labor process by the platforms. In addition, female riders' production and reproduction processes are subject to the hidden exploitation of surplus value by the platforms, leaving women exposed to further exploitation from the labor market in addition to family care and to the potential gender inequality and gender exploitation by the platforms. Fortunately, the awakening of women's minds and consciousness has also opened up a new space for solidarity and cooperation among female takeaway riders. Therefore, we should give a dialectical consideration and view to the economy of takeaway platforms, and it is necessary to make policy improvements and suggestions.

REFERENCES


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