

Precarious Labor in China's Grid Governance: Public Perceptions and Implications for Regime Sustainability

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| Abstract |

China's grid governance has rapidly expanded nationwide since the zero-COVID era, aiming to maintain social stability and strengthen grassroots services. Yet the system depends on grid workers (网格员), who are low-wage and precariously employed laborers. This study analyzes how Chinese citizens perceive this contradiction using LDA topic modeling and deep-learning sentiment analysis of approximately 3,500 social media posts collected from Zhihu (知乎), Weibo (微博), and Baidu Tieba (百度贴吧). The results show predominantly negative sentiment, with "Job Environment and Compensation" the most negative (-0.80). Drawing on Scott's (1990) notion of "hidden transcripts," we argue that netizens indirectly criticize the gap

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between the state's discourse of stability and the unstable means of its implementation, often through complaints about labor conditions rather than overt dissent. These contradictions may weaken confidence in the state's stability narrative and raise questions about the long-term viability of performance-based legitimacy.

▪ Keywords: Grid governance, Grid workers, Precarious labor, Social media analysis, Sentiment analysis, China

“(We) must prioritize the grassroots, reinforce the foundation, and consolidate the core. Resources, services, and administrative functions must be extended downward to ensure that all aspects of social governance are fully implemented—vertically to the end and horizontally to the edge.¹⁾”

—Xi Jinping, May 2025, official remarks on social governance during an inspection of Henan Province(Communist Party Members' Website, 2025).

I . Introduction

China's grid governance (wanggehuaguanli, 网格化管理) system emerged in the early 2000s as part of a broader strategy to strengthen administrative control and social management at the most localized levels of society. The system divides urban and rural areas into small grids, each supervised by grid workers (wanggeyuan, 网格员). These workers serve as the state's immediate representatives, mediating between local communities and governmental authorities. Their duties include monitoring public health, resolving neighborhood disputes, ensuring order, and implementing state policies (Gao & Liu, 2024). Grid governance system also integrates digital

1) Original Chinese: “要突出抓基層、強基礎、固根本，推動資源、服務、管理下沉，確保社會治理各項工作縱向到底、橫向到邊。”

technologies with administrative mechanisms, allowing the state to monitor and shape grassroots dynamics with unprecedented precision (Zhang & Wang, 2024).

At its core, this system depends on a precarious workforce—young, often college-educated workers hired on short-term contracts, typically earning around 4,500 yuan monthly without full social benefits (Xu & He, 2022). The system's stated goal of strengthening social stability contrasts sharply with the unstable employment conditions of the workers tasked with implementing it, raising questions about legitimacy. While existing studies have emphasized administrative efficiency or the expansion of state control (Zhu et al., 2021; Meng et al., 2024), much less is known about how ordinary citizens perceive this contradiction. This paper starts from this paradox that is often acknowledged but rarely measured at scale: a system designed to secure stability depends on a workforce whose employment conditions are themselves unstable. We leverage large-scale digital traces to examine how the public perceives this paradox and what those perceptions imply for regime sustainability in general.

We use the term *regime sustainability* to refer to the ongoing reproduction of political order through capacity, compliance, and consent. Classic accounts emphasize performance—state capacity and visible outcomes—but durability may also rest on affective legitimacy: the ways ordinary people emotionally interpret everyday governance. When citizens register anger, frustration, or moral disapproval at the treatment of frontline implementers, these reactions can gradually shape broader judgments about fairness, credibility, and the deservingness of rule. In this sense, affective responses are not incidental but part of the process by which consent is either sustained or undermined.

Building on this idea, we develop the concept of “stability-through-precarity”. The term captures a recurring pattern: governments achieve visible order by relying on frontline workers whose own employment is insecure. Our

empirical focus is China's grid governance system, but the same logic extends to adjacent areas of governance where precarious labor is mobilized to enforce order and deliver services—for example, pandemic control teams, neighborhood security patrols, welfare-to-work enforcement, or outsourced municipal service units. In each case, the reliance on contingent or poorly compensated workers makes labor conditions directly visible to the public. These perceptions of exploitation or disposability can, in turn, spill over into broader evaluations of governance legitimacy.

To connect these conceptual claims to evidence, we analyze a dataset of approximately 3,500 Chinese social-media posts and comments drawn from Zhihu, Weibo, and Baidu Tieba. Using Latent Dirichlet Allocation (LDA), word cloud visualization, and deep learning - based sentiment analysis, we examine how citizens discuss grid governance and how they emotionally respond to its labor conditions. This design enables us to capture both the thematic arenas of debate and the affective tone attached to them. Our central question is how public discourse reflects the paradox of a system that seeks stability while relying on precarious labor, and what these affective responses reveal about the legitimacy and long-term viability of the governance model.

This paper advances scholarship in three ways. First, it provides empirical evidence that reliance on precarious frontline labor shapes public perceptions of regime sustainability, moving beyond descriptive recognition of this paradox. Second, it specifies the affective dimension of legitimacy in a measurable way by analyzing sentiment toward the treatment of frontline implementers. Third, it introduces the concept of stability-through-precarity as a portable logic, showing how visible precarity in implementation can create a recurring pattern of public skepticism about governance across diverse policy settings.

We do not claim that negative sentiment alone determines regime trajectories. Rather, we argue that patterns of affect toward labor conditions

serve as an early-warning indicator of potential vulnerabilities in performance-based legitimacy. From this perspective, improving employment security, compensation, and dignity for frontline workers is not peripheral but essential to sustaining political order.

II. Literature Review

1. Institutional Perspectives on Grid Governance

The system underwent significant expansion and institutionalization during the COVID-19 pandemic. China's rapid, centralized response through its grid framework initially appeared effective compared to Western countries' inconsistent or more liberal approaches. The grid framework was augmented by digital technologies such as Quarantine Management Platforms and individual Health Information Codes, integrating surveillance with service delivery under the broader vision of the "smart city" (Park, 2020). These mechanisms enabled China to curb viral transmission effectively in the short term. However, as the pandemic persisted, public fatigue and economic strain mounted. This revealed the limitations of prolonged restrictions and centralized control. Despite these challenges, the perceived success of grid governance during the health crisis reinforced its status as a cornerstone of grassroots administration. Official narratives reframed it as a long-term solution for achieving "harmony" and "stability" in China's increasingly risk-sensitive society (Ministry of Civil Affairs et al., 2022).

Scholarly research on grid governance in China has focused primarily on its institutional role in strengthening administrative capacity and ensuring social stability. One strand of the literature assesses the system as an efficient, decentralized governance tool capable of enhancing state

responsiveness during crises. Researchers in this tradition emphasize the utility of grid governance in organizing local information flows, managing emergencies, and implementing policies at the neighborhood level (Zhu, Zhu, & Jin, 2021; Meng, Wang, & Xin, 2024).

However, a growing body of critical scholarship questions the system's normative claims and practical effects. Mittelstaedt (2021) argues that grid governance, in practice, prioritizes surveillance and social management over participatory service delivery. Performance evaluations tend to emphasize information collection and unrest prevention, sidelining community engagement or welfare. Tang (2020) similarly contends that while grid governance is rhetorically framed as participatory, it functionally deepens party control over grassroots society. Others, such as Tian & Liu (2020) and Wang (2024), have identified implementation problems including bureaucratic overload and mismatched incentives, proposing institutional reforms.

Xu and He (2022) contribute an important labor-oriented critique by showing that most grid workers are precariously employed through third-party contracts, with low wages and limited benefits. Yet even their analysis stops short of linking these labor conditions to broader questions of system legitimacy or public perception. Overall, the literature remains predominantly top-down in orientation, focusing on institutional design, efficiency, and party capacity while overlooking the subjective experiences of both grid workers and the public.

2. Precarious Labor and Governance Legitimacy

Despite growing attention to China's social governance strategies, few studies systematically examine how precarious labor conditions affect citizens' perceptions of the state. The employment model underpinning grid governance—short-term contracts, performance-based pay, and limited

welfare access—marks a sharp departure from the *danwei* (單位) system that once guaranteed social benefits and job security (Baek et al., 2015). Today's grid workers embody a flexible, disposable labor force tasked with ensuring local compliance and stability.

This shift reflects deeper transformations in the Chinese state's approach to governance and labor. Official regulatory documents, such as Jiangsu Province's 2020 guidelines, institutionalize a cost-efficiency logic: base pay is supplemented by performance-based bonuses, and housing benefit access is limited to regions "where conditions permit." These arrangements may reflect local governments' fiscal constraints, which centralized revenues while leaving service provision costs with localities (Yang 2004). For grid workers, this translates into minimal compensation packages despite their essential role in maintaining social stability.

This employment model of grid workers may exemplify what Standing (2011) termed the "precariat"—marked by employment instability, low wages, and minimal institutional protection. Despite their marginal status, grid workers are increasingly central to maintaining order in China's "risk society." This tension between indispensable function and disposable status raises urgent questions about grid governance's long-term viability as a source of legitimacy.

While grid governance operates at the grassroots level, it differs meaningfully from other forms of bottom-up civic engagement. Kim (2022) documents youth participation in *shequ huodong* (社區活動, community activities) where participants were motivated primarily by nostalgia for traditional values and desires to restore communal bonds rather than economic incentives. Grid workers, in contrast, appear to be motivated by more pragmatic concerns, according to available evidence. Given China's competitive job market, particularly for those without advanced degrees or specialized skills, grid work appears to serve as an accessible employment option rather than a venue for civic participation.

This distinction can shape how both practitioners and residents perceive grid governance. Instead of fostering collective identity, the system often imposes asymmetric relationships between the state and local communities—mediated by workers whose own employment conditions are insecure. This not only complicates their role as public servants but also undermines the trust required for effective governance.

3. Theoretical Framework

This study approaches grid governance as a grassroots governance system whose legitimacy depends not only on institutional design or administrative capacity, but also on public perception—particularly in relation to labor conditions embedded within its structure. As a labor-intensive mechanism that mobilizes large numbers of contract-based, low-paid grid workers, grid governance reveals a key contradiction in the Chinese model: it seeks social stability while relying on labor arrangements associated with neoliberal precarity. This tension links closely to broader debates about the labor-capital relationship and the growing wealth gap—factors that challenge the state’s goals of “harmony” and “stability.”

The importance of public perception aligns with scholarship on authoritarian durability, which highlights that regime sustainability relies not only on repression or material rewards, but also on securing a degree of public acceptance or passive compliance (Geddes, Wright, & Frantz, 2018). In China, this is particularly salient given the state’s reliance on “performance legitimacy”—the idea that political authority is justified by delivering economic development and social order (Zhao, 2009). As this study argues, perceptions of how governance is carried out—especially when it involves precarious frontline labor—can shape broader assessments of state legitimacy.

Public responses to grid governance are also shaped by China’s political

structure. Research shows that criticism is typically directed not at central authorities, but at local actors who implement policies on the ground—such as local officials, corporate managers, and street-level bureaucrats (Hoffman, 2010; Lee, 2007; Wright, 2010). As the most visible agents of state governance at the neighborhood level, grid workers often become the immediate targets of public frustration. This dynamic influences both how grid governance is experienced by citizens and how grid workers themselves perceive their role.

These dynamics became particularly prominent during the COVID-19 pandemic. The crisis expanded grid-based governance nationwide, institutionalizing neighborhood-level systems of surveillance, movement control, and public health management. While initial compliance reflected trust in the state's crisis response, the persistence of these mechanisms beyond the pandemic has raised questions about their long-term legitimacy. The transformation of temporary pandemic roles into permanent governance routines illustrates how emergency measures can be normalized (Mittelstaedt, 2021), further intensifying public attention to the system's everyday implications.

In this context, social media serves as a valuable space for observing public sentiment. Unlike traditional surveys, where politically sensitive opinions may be masked by self-censorship (Bertrand & Mullainathan, 2001), digital platforms allow for more expressive—if coded—forms of communication. Netizens often employ irony, metaphor, and satire to articulate dissatisfaction while navigating censorship (King, Pan, & Roberts, 2013; Yang, 2009; Qiu, 2009). Wu and Fitzgerald (2021) highlight how these linguistic strategies reflect a dynamic negotiation between expression and constraint.

This aligns with Scott's (1990) concept of "hidden transcripts"—indirect, often veiled forms of resistance that emerge when open dissent is risky. In the context of grid governance, such transcripts may take the form of

sarcastic praise, exaggerated expressions of loyalty, or mundane complaints that subtly challenge official narratives. These affective and symbolic forms of engagement provide insight into how ordinary citizens navigate and interpret governance from below.

Building on this theoretical foundation, the study examines discourse from Zhihu, Weibo, and Baidu Tieba to analyze how citizens articulate concerns about grid governance. These findings can add nuance to ongoing discussions of legitimacy and governance in the Chinese context.

III. Data and Methodology

1. Data Collection and platform distribution

Due to limitations in automated scraping, we manually collected posts from Zhihu (知乎), Weibo (微博), and Baidu Tieba (百度贴吧) over an 11-week period (March 23 to May 10, 2025) using the keywords “网格员 (grid worker)” and “网格化管理 (grid governance).” To capture the most salient discussions, we prioritized posts with high engagement, defined by view counts and number of comments, and also collected all user comments attached to those posts.

The final corpus contains 3,538 texts (534 main posts and 3,004 comments) distributed as follows: Zhihu 82% (460 posts, 2,455 comments), Weibo 9% (53 posts, 272 comments), and Baidu Tieba 9% (21 posts, 277 comments). Zhihu dominates the dataset because of its policy-focused communities and long-form discussion style. By contrast, many Weibo posts on grid governance consisted of government propaganda with minimal engagement, while Baidu Tieba is represented only partially, reflecting its more dispersed community structure.

Accordingly, we interpret our findings primarily as patterns within

educated, policy-engaged digital discourse, particularly reflecting perspectives from Zhihu's urban, educated user base. Data from Weibo and Baidu Tieba are included in a more limited way, serving as supplementary perspectives, but not as comprehensive corpora.

2. Data Cleaning and Preprocessing

To improve analytical accuracy, data cleaning and preprocessing were conducted in several steps. First, synonym standardization was implemented by consolidating semantically similar terms into unified representative keywords. For example, various terms related to payment—such as “salary,” “wages,” and “remuneration” were standardized to the term “compensation”.

Next, morphological analysis was applied to segment text into meaningful units. *Jieba* was used for original Chinese texts, and *Okz* was used for Korean translations. This was followed by stopword removal, excluding common words that are grammatically necessary but carry little semantic meaning.

To improve the reliability of topic modeling, duplicate posts were removed based on user and post metadata. Repetitive phrases common to each platform were also excluded, as they were not relevant for analysis. Additionally, because multiple comments within a single post were often separated by “//”, main posts and individual comments were restructured into independent units of analysis using this delimiter.

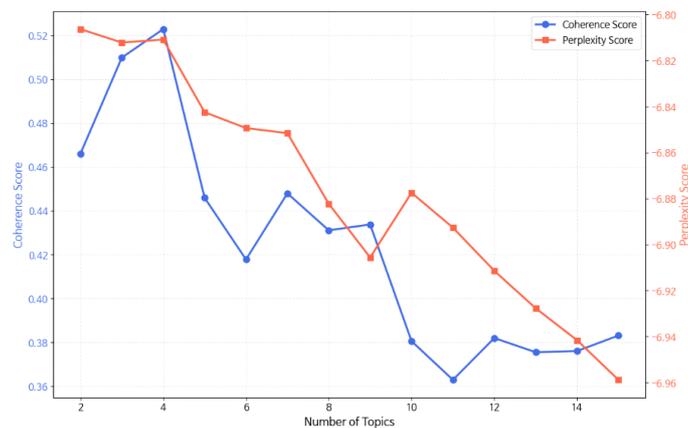
For the primary analysis, this study used the original Chinese texts throughout the LDA topic modeling and keyword extraction processes. Korean translations were generated using GPT-4.1 API as a supplementary measure for cross-linguistic robustness checks in the sentiment analysis phase. This approach allowed us to verify that the identified sentiment patterns were not artifacts of language-specific processing or model biases, but rather reflected genuine attitudes expressed in the discourse.

3. Topic Modeling: Identifying Core Thematic Structures

This study employed Latent Dirichlet Allocation (LDA) topic modeling to identify the latent thematic structure of the dataset. LDA topic modeling is a probabilistic framework that assumes each document is represented as a mixture of multiple latent topics (Blei et al., 2003). This property enables LDA to efficiently uncover structurally distinguishable and interpretable thematic clusters from large-scale textual datasets containing diverse and multilayered content (Griffiths & Steyvers, 2004; Hong & Davison, 2010).

While recent advances in neural topic modeling—such as BERTopic (Grootendorst, 2022)—allow for the extraction of more nuanced and context-aware subtopics, the primary analytical objective of this study was not to identify fine-grained distinctions but rather to delineate broader and more interpretable thematic domains, such as “labor conditions and compensation” or “administrative systems and public governance.” From this design perspective, LDA remains a highly intuitive and analytically robust method, particularly due to its clear topic interpretability, classification feasibility, and compatibility with subsequent sentiment analysis steps (Alghamdi & Alfalqi, 2015).

<Figure 1> Analysis of Optimal Number of Topics for LDA



To determine the optimal number of topics in the LDA model, coherence and perplexity scores were calculated for models ranging from 2 to 15 topics. As shown in Figure 1, coherence peaked at 0.523 with four topics, after which it declined sharply. While perplexity continued to decrease beyond four topics, the marginal improvements were minimal compared to the significant drop in coherence. Balancing model interpretability (coherence) with fit (perplexity), four topics emerged as the optimal choice. The final LDA model was therefore conducted with the number of topics set to four.

4. Sentiment Analysis: Capturing Emotional Polarities

To assess public sentiment on each identified topic, a two-step sentiment analysis approach was adopted. Initially, a dictionary-based method was tested using the “KnuSentiLex sentiment lexicon”²⁾, which maps over 14,000 Korean terms to polarity scores. However, this method struggled with sentence-level nuance, sarcasm, and figurative language—frequently misclassifying negative posts as neutral or positive.

To address these limitations, the study utilized the “Tabularisai/multilingual-sentiment-analysis” model³⁾, a fine-tuned version of DistilBERT trained for cross-lingual sentiment classification. This deep learning model processes both Chinese and Korean texts directly, outputting sentiment scores ranging from -5 (strongly negative) to +5 (strongly positive).

Given that the dataset includes both original Chinese texts and Korean translations, this deep learning model was deemed appropriate for conducting robustness checks across both language versions. This approach minimizes linguistic bias and enhances the reliability of the findings. The primary

2) KnuSentiLex sentiment lexicon sentiment dictionary: https://github.com/park1200656/KnuSentiLex/blob/master/KnuSentiLex/data/SentiWord_info.json

3) Tabularisai/multilingual-sentiment-analysis model: <https://huggingface.co/tabularisai/multilingual-sentiment-analysis>

sentiment analysis results reported in this study are based on outputs from the deep learning model.

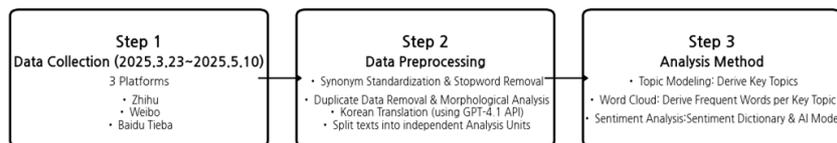
5. Analytical Procedures

Before conducting the main sentiment analysis, a preliminary exploration was carried out using topic modeling and word clouds to identify key themes and associated keywords in the dataset. Topic modeling revealed the underlying thematic structure of the discourse, while word clouds highlighted the most frequently used nouns, helping to surface core issues.

Sentiment analysis was then performed based on the keywords identified for each topic. To improve analytical accuracy, only texts clearly aligned with a single dominant topic were included. By comparing average sentiment scores across topic categories, the study examined the conditions under which positive or negative public sentiment tends to emerge.

The overall analytical approach is summarized as follows:

<Figure 2> Analysis Procedures



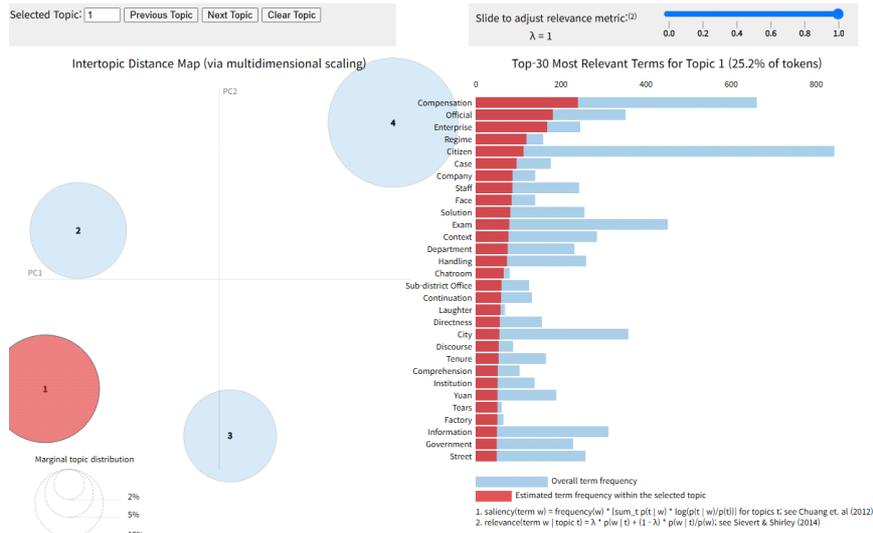
Note: Although the diagram shows parallel processing paths, Chinese text analysis served as the primary analytical route. Korean translations were used only for validation and robustness checks, ensuring that the main results are based on the original Chinese texts. All topic modeling and keyword extraction were therefore performed on the Chinese corpus.

IV. Results

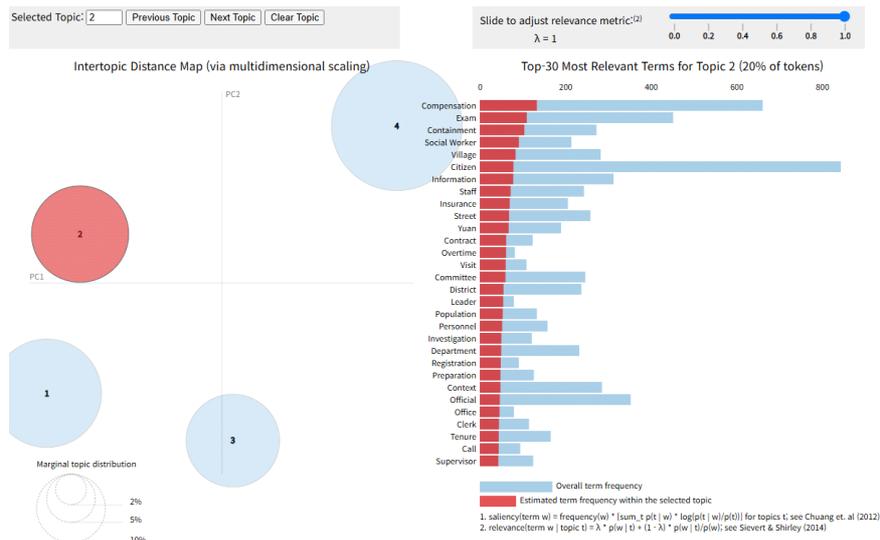
1. Topic Modeling Results

Using LDA analysis, this study identified four distinct topics that reveal the thematic structure of public discourse on grid governance. To visualize topic relevance and saliency, we employed the LDAvis tool, which combines term frequency and distinctiveness (Sievert & Shirley, 2014). The four topics were labeled according to their most prominent keywords: Topic 1: “Job Environment and Compensation” (25.2%), Topic 2: “Administrative System and Public Governance” (20%), Topic 3: “Field Work and Public Safety” (18.5%), Topic 4: “Resident Communication and Conflict Management” (36.3%).

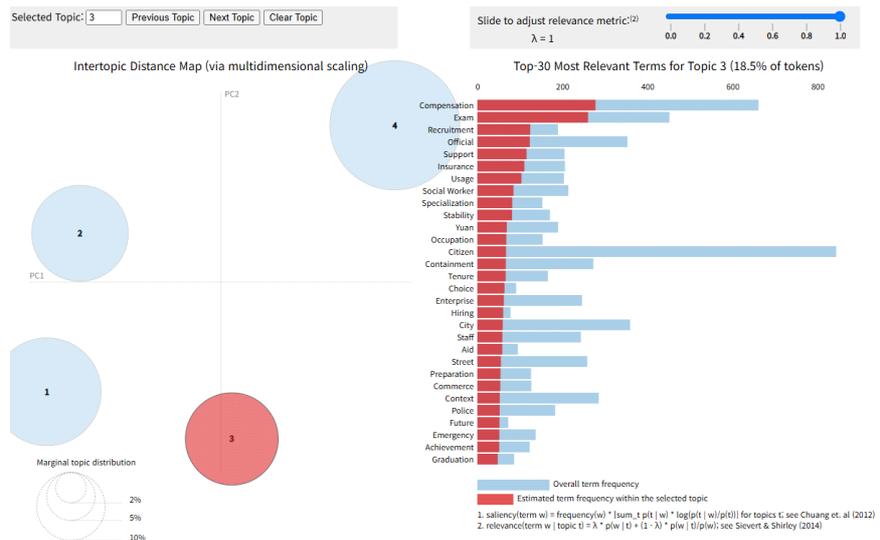
<Figure 3> LDA Topic Model Results--(a)
Topic 1: Job Environment and Compensation

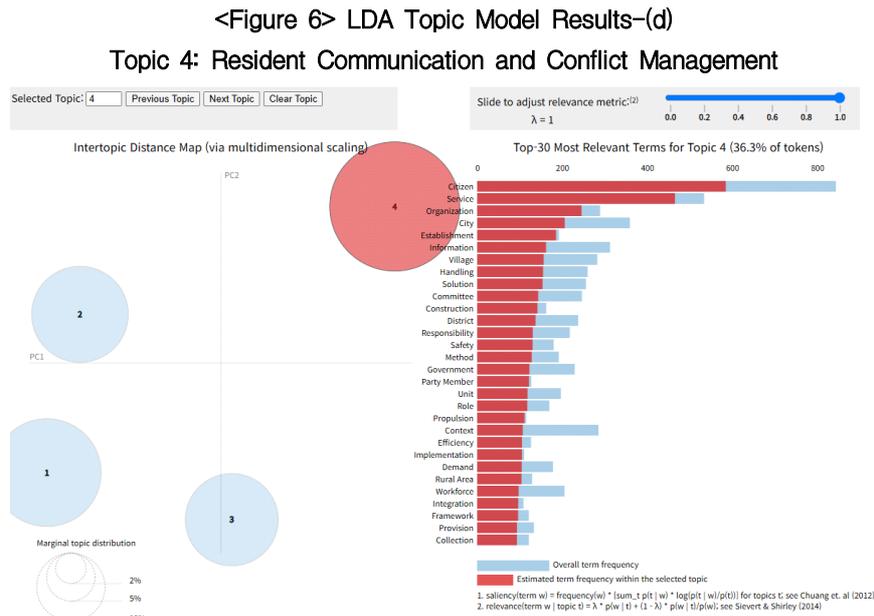


<Figure 4> LDA Topic Model Results-(b)
Topic 2: Administrative System and Public Governance



<Figure 5> LDA Topic Model Results-(c)
Topic 3: Field Work and Public Safety





While four topics were identified, their content clusters around two recurring dimensions of discourse. Topics 1 - 3 consistently feature employment-related terms such as compensation and exam, underscoring a persistent concern with precarious labor conditions. By contrast, Topic 4 is dominated by words like citizen, service, and organization, pointing to debates about governance performance and the state - society interface. This pattern suggests that discussions of grid governance are shaped less by abstract ideological narratives than by concrete concerns such as labor insecurity and service delivery.

2. Sentiment Analysis Results

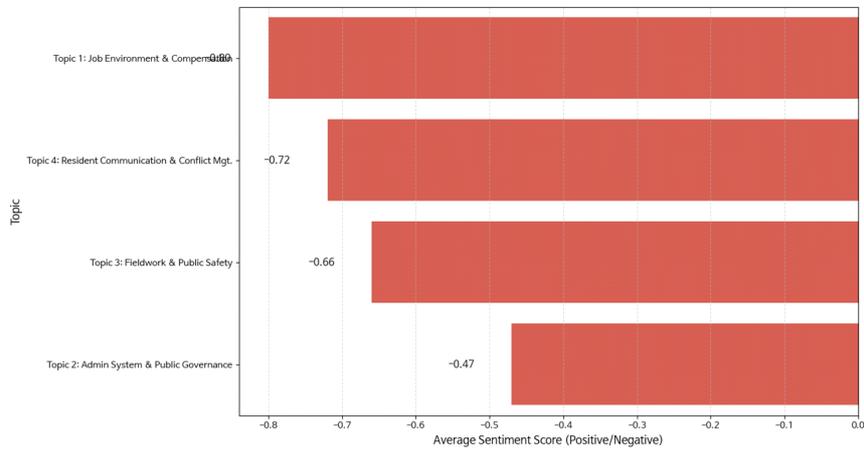
1) Sentiment by Topic

To accurately capture public sentiment, the study addressed the issue of “emotional attribution ambiguity” that arises when a single post reflects

multiple topics. To minimize this, only texts clearly associated with a single topic were included in the final analysis.

Of the 3,538 posts and comments collected, 1,688 (approximately 47.7%) met this criterion. Sentiment analysis using a deep learning model showed that negative sentiment prevailed across all four topics, though the intensity varied by theme.

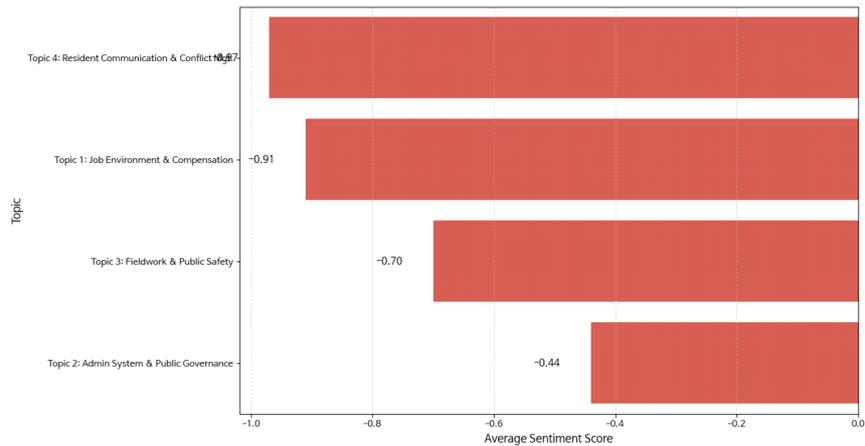
<Figure 7> Average Sentiment Scores by Topic (Chinese Original Text)



▪ Note: Topics are ordered from most negative to least negative average sentiment scores.

Sentiment analysis of the original Chinese texts revealed negative sentiment across all topics, with varying degrees of intensity. Topic 1 (Job Environment and Compensation) scored the most negative at -0.80, followed by Topic 4 (Resident Communication and Conflict Management) at -0.72, Topic 3 (Field Work and Public Safety) at -0.66, and Topic 2 (Administrative System and Public Governance) at -0.47.

<Figure 8> Average Sentiment Scores by Topic (Korean Translation Text)



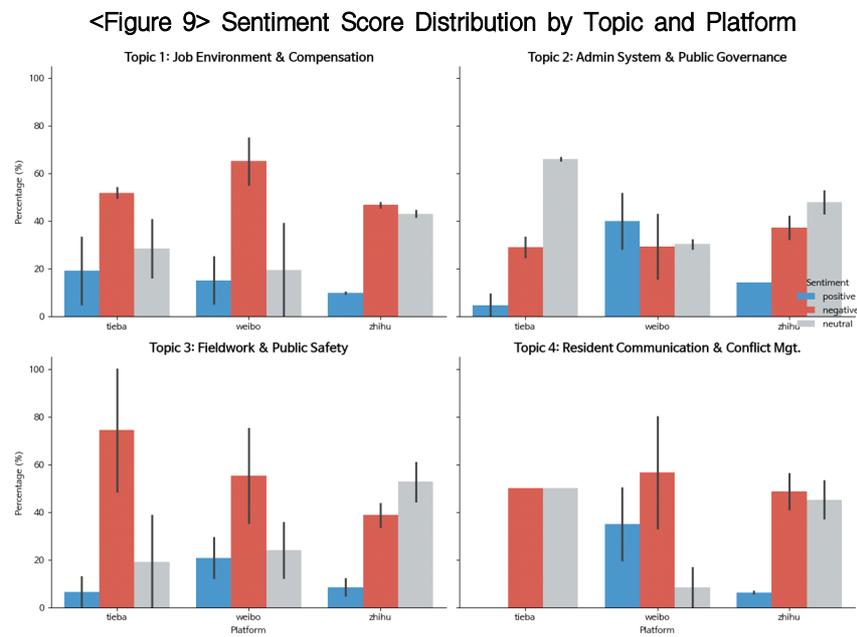
- Note: Topics are ordered from most negative to least negative average sentiment scores.

The analysis of the Korean translations (Figure 8) served as a robustness check for our primary findings. Despite the linguistic transformation through machine translation, the overall pattern of negative sentiment across all topics persisted. Topic 4 ranked most negative at -0.97 , followed by Topic 1 at -0.91 , Topic 3 at -0.70 , and Topic 2 remained the least negative at -0.44 .

A comparison of Figure 7 (Chinese original) and Figure 8 (Korean translation) reveals that while there are slight shifts in the ranking of sentiment scores, the overall negative sentiment is overwhelmingly dominant across all topics in both analyses. Notably, themes related to job conditions and resident communication consistently score as highly negative. This consistency across different languages confirms the robustness of our sentiment analysis findings, suggesting the results are not an artifact of a specific language model.

2) Platform-specific Sentiment Analysis Results

To examine how sentiment varied across platforms, additional analysis was conducted using the original Chinese texts. Figure 9 illustrates the distribution of sentiment scores by topic on Zhihu, Weibo, and Baidu Tieba.



As shown in Figure 9 above, there were differences in sentiment score distribution by topic across each platform. On Weibo, negative sentiment appeared at the highest rate for Topic 1 (Job Environment and Compensation). In contrast, Baidu Tieba showed the highest negative sentiment scores for Topic 3 (Field Work and Public Safety). As Baidu Tieba particularly functions as a professional community for grid workers, it may lead to more negative expressions about field work and job compensation. For instance, expressions like “The prospects are bright, but as a community grid worker, you’ll basically work yourself to death” (sentiment score: -2.10) were

frequently observed. Zhihu showed a relatively uniform sentiment distribution, demonstrating the platform's characteristic of hosting more professional questions and answers. Analytical content about institutional background, such as "Grid workers imitate the social worker system implemented in Europe, America, and Japan" (sentiment score: +1.00), and discussions addressing policy context, such as "Grid governance has appeared multiple times in Shenlun (申論) exam questions" (sentiment score: +1.78), were common.

By topic, Topic 1 (Job Environment and Compensation) consistently showed high negative sentiment across all platforms, while Topic 2 (Administrative System and Public Governance) showed relatively minor variations between platforms. This suggests that economic compensation issues are common concerns shared across all platforms. In contrast, topics related to grid governance's administrative system and public governance align with official party objectives frequently promoted in Chinese Communist Party discourse. As a result, these topics may generate more positive sentiment on official channels in Weibo, which serve to promote the party's messaging.

3. Keyword Analysis by Theme through Word Clouds

To further explore the core issues within each topic identified through LDA modeling in more detail, word cloud analysis was also conducted for each topic. Word clouds enable the identification of the most frequently appearing words in each thematic category, providing interpretive context for understanding the keyword-specific sentiment scores presented earlier. Figure 10 shows word clouds generated from the top 50 keywords for each of the four topics.

<Figure 10> Word Clouds by Topic



Topic 1 (Job Environment and Compensation) centers on keywords such as compensation, civil servant, company, corporation, and regime. This suggests public concern over the official classification and status of grid workers. The keywords indicate a perception that although grid workers perform public service roles similar to those of state civil servants, their working conditions are far inferior. While their work is essential for system stability, their employment is as precarious as that of non-regular corporate employees. The high negative sentiment scores in this topic likely stem from this mismatch between the official responsibilities expected of grid workers and their insecure, often informal, employment terms.

Topic 2 (Administrative System and Public Governance) features frequent terms including compensation, exam, social worker, quarantine, village, citizen, and insurance. These suggest a focus on the institutional roles grid workers play—managing sensitive data, supporting pandemic response, and serving communities. The negative sentiment here appears to reflect a perceived gap between the importance of their duties and the state’s insufficient support or recognition.

Topic 3 (Field Work and Public Safety) shows keywords such as compensation, recruitment, insurance, support, exam, civil servant, social worker, usage, and stability. This topic appears to focus on institutional infrastructure, such as insurance and grid worker recruitment processes. The negative sentiment may be interpreted as reflecting concerns that administrative support is misaligned with the original purposes of grid worker recruitment.

Topic 4 (Resident Communication and Conflict Management) highlights terms like citizen, service, organization, information, establishment, and city. Here, dissatisfaction seems aimed more at the broader governance system than at labor conditions specifically. Negative sentiment in this theme may signal public frustration with the structural inefficacy of grid governance in resolving community tensions and delivering responsive services.

Across three of the four topics, the prominence of the keyword “compensation” is striking, cutting across thematic boundaries. This suggests that concerns over labor precarity extend beyond employment conditions to broader aspects of grid governance, from service delivery to administrative functions. Citizens appear to recognize that labor instability undermines the entire grid governance system, creating a systemic vulnerability that erodes public trust in the system itself.

4. Comparative Sentiment Analysis Results and Illustrative Expressions

<Table 1> Comparison of Sentiment Scores by Analysis Method

Topic	Dictionary Sentiment Score	Deep Learning Sentiment Score	Difference (Deep Learning - Dictionary)
1: Job Environment & Compensation	0.03	-0.80	-0.83
2: Admin System & Public Governance	0.24	-0.47	-0.71
3: Fieldwork & Public Safety	0.14	-0.66	-0.80
4: Resident Communication & Conflict Governance	0.40	-0.72	-1.12

The sentiment dictionary-based analysis initially produced results that were largely neutral or mildly positive, contrasting with the deep learning model, which consistently revealed negative sentiment across all topics. As noted earlier, the dictionary approach struggled to accurately interpret irony, context, and implicit expressions.

For instance, the sentence, “It’s not that there’s no money, but urban second-generation parents make their children give up the chicken game,” received a slightly positive score (+1) from the dictionary model. In context, however, it expresses pessimism about socio-economic pressures that force people to abandon competition. Similarly, the phrase “Companies are already in chaos and confusion, but people inside the system are still dreaming there” was rated neutral (0), despite its satirical tone mocking bureaucratic detachment. Another example, “I hope you endure well when you don’t receive salary for half a year,” also scored 0 but is clearly a sarcastic remark about wage arrears.

These examples highlight the limitations of rule-based sentiment dictionaries in capturing nuance, irony, and layered sentiment. For this reason, the study’s primary findings rely on results from a deep learning model, which demonstrated superior sensitivity to contextual and emotional subtleties. In Topic 1 (Job Environment and Compensation)—the most negatively evaluated theme—many comments reflected intense frustration. One user wrote, “This job is like being your superior’s disposable glove—low pay, heavy workload, and all the dirty, difficult tasks that make you furious” (sentiment score: -2.50). In Topic 3 (Field Work and Public Safety), users expressed exhaustion and resentment toward frontline roles: “Who else would want this job? It’s bitter, exhausting, and full of verbal abuse—everything dumped on grassroots workers.” Such expressions are not isolated. Across all topics, the analysis indicates that the operational difficulties of the grid governance system are substantial, leading to widespread negative sentiment despite the official goal of strengthening grassroots governance.

V. Discussion

This study analyzed public discourse on grid workers and grid governance across Zhihu, Weibo, and Baidu Tieba using topic modeling, word clouds, and sentiment analysis. The findings reveal broad public awareness of the gap between the official goals of grid governance and its implementation. Negative sentiment was strongest in Topics 1 and 4, which focused on job conditions and resident communication. Moreover, the prominence of “compensation” in multiple word clouds indicates that public concern is directed less toward the state’s ideological discourse of “social stability” and more toward the employment conditions of frontline grid workers.

The discourse of “stability maintenance” (*weiwen*, 維穩) is central to Chinese state ideology. As Jang (2013) argues, it functions not only as a policy objective but also as an ideological principle that regulates and normalizes society. This logic aligns with Zhao’s (2009) notion of “performance legitimacy,” which holds that the Chinese Communist Party’s authority rests on delivering tangible outcomes such as economic growth and social order. Stability maintenance has therefore become both the regime’s highest priority and a defining feature of its governance model.

The expansion of grid governance in the post-zero-COVID era reflects this context. After the dismantling of the *danwei* (單位) system, which had provided stable employment and social benefits (Baek et al., 2015), grid governance emerged as a substitute for neighborhood-level management. Under Xi Jinping, it has been reframed from top-down “management” (*guanli*, 管理) to participatory “governance” (*zhili*, 治理), promoted as a grassroots system that combines community engagement with conflict prevention (Lee, 2017).

Yet the findings may suggest that negative sentiment toward grid workers reflects more than dissatisfaction with job conditions. When those

responsible for maintaining stability are themselves precariously employed, citizens may perceive a contradiction between the state's rhetoric of stability and the realities of its implementation. This inconsistency could gradually weaken confidence in the state's legitimacy.

China's reliance on low-wage, outsourced grid workers illustrates a broader governance pattern. Responsibility for stability is delegated from the central government to local authorities and ultimately to insecure frontline workers, forming a subcontracted chain of governance. Although officially framed as "participatory governance," this arrangement effectively shifts costs onto the most vulnerable while retaining centralized control. The persistence of negative sentiment—even on heavily monitored and censored platforms—raises questions about the long-term sustainability and effectiveness of this model.

Grid workers therefore occupy a paradoxical position: they are insiders who perform state functions, yet outsiders due to their precarious status. Citizens express these contradictions through what Scott (1990) terms "hidden transcripts," using irony and coded language to avoid censorship. The contrast between dictionary-based sentiment analysis (which suggested neutral or positive tones) and deep learning analysis (which revealed consistently negative sentiment) highlights how subtle resistance emerges in restricted digital environments. For example, a phrase such as "I hope you endure well when you don't receive a salary for half a year" may appear neutral but convey frustration about wage arrears. Although not overtly political, such remarks reveal underlying discontent with governance, especially in contexts where direct criticism is not viable.

VI. Implications and Limitations

1. Implications

This study offers valuable insight into public perceptions within China's state-led governance framework. While much existing research focuses on top-down policy design and implementation, this analysis shifts the lens to bottom-up evaluations, examining how ordinary citizens—both subjects and participants of governance—perceive grid governance.

Using Scott's (1990) theory of "hidden transcripts," the study highlights a critical gap between official state narratives and informal public discourse. Rather than engaging in direct political criticism, Chinese netizens often express discontent through complaints about labor conditions. This pattern underscores a divergence between the state's proclaimed goals—such as service efficiency and social stability—and how the public evaluates the system, primarily through the lens of workers' precarious employment.

The findings contribute to a deeper understanding of institutional reproduction and change in such political systems. Although grid governance is framed as a tool for grassroots service and political stability, its reliance on low-paid, contract-based labor introduces a structural contradiction. Relying on precarious workers to ensure long-term stability undermines the state's performance legitimacy and risks creating broader public dissatisfaction.

2. Limitations

This study has several limitations. First, the dataset is dominated by Zhihu (82%), so the findings mainly reflect the views of educated, urban users engaged in policy debates, while rural and less educated perspectives are largely absent. Second, because the analysis relies on users who

actively post on social media, certain demographic groups are underrepresented, creating potential sampling bias. Third, temporal and regional variation could not be examined: post-level dates were unavailable on Zhihu, preventing time-series analysis, and provincial identifiers were not collected, limiting spatial comparisons. Finally, self-censorship remains a concern. Even on semi-anonymous platforms, users may moderate or withhold critical opinions, leaving some discontent invisible in the dataset.

VII. Conclusion

This study examined how Chinese citizens active on social media perceive grid governance, drawing primarily on Zhihu, with supplementary data from Weibo and Baidu Tieba. Sentiment analysis revealed predominantly negative evaluations, particularly regarding the employment conditions of frontline grid workers. Topic modeling and word clouds further indicated that these concerns were central themes in public discourse. Rather than reinforcing the state's narrative of social stability and grassroots participation, online discussions emphasized the contradiction between official rhetoric and reliance on a precariously employed workforce.

The implications for state legitimacy are significant. The Chinese Communist Party's "performance legitimacy" (Zhao, 2009), grounded in efficiency and stability, may be challenged when the very agents of stability are viewed as insecure or disposable. This tension is especially evident under Xi Jinping's governance model, which emphasizes participatory "governance" (*zhili*) over top-down "management" (*guanli*). Public attention to labor precarity suggests awareness of inconsistencies between official narratives of empowerment and frontline realities.

These findings also raise broader questions about sustainability. A governance model that outsources core state functions to an unstable

workforce may not only place pressure on performance legitimacy but also risk reducing administrative effectiveness if worker dissatisfaction leads to low motivation or minimal compliance. It could further affect trust between citizens and local governments as discrepancies between rhetoric and lived experience become visible.

Finally, the “hidden transcripts” (Scott, 1990) identified in our sentiment analysis—where deep learning captured persistent negativity even when dictionary-based methods overlooked nuance and irony—highlight the subtle ways in which discontent is expressed online. These indirect and coded forms of criticism do not necessarily translate into offline action, but they provide important insight into how citizens perceive contradictions in governance. Taken together, the findings point to a structural tension: relying on precarious labor to ensure stability may, over time, weaken public confidence in the regime.

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| 국문초록 |

중국 그리드 거버넌스의 불안정 노동: 대중 인식과 체제 지속성에 대한 함의

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중국의 그리드 거버넌스는 제로 코로나 이후 전국적으로 급속히 확대되어 사회 안정 유지와 기층 서비스 강화를 목표로 하고 있다. 그러나 그리드 거버넌스는 책임감의 불안정한 노동자인 그리드원(网格员)이 없이는 유지될 수 없다. 본 연구는 즈후(知乎), 웨이보(微博), 바이두티에바(百度贴吧)에서 수집한 약 3,500개의 소셜미디어 게시물을 LDA 토픽모델링과 딥러닝 기반 감성 분석으로 분석하여, 중국 대중이 이러한 구조적 모순을 어떻게 인식하는지를 조사하였다. 분석 결과, 확인된 4개의 주제 모두에서 부정적 감성이 지배적이었으며, 특히 '직무환경과 보상'이 -0.80으로 가장 부정적인 것으로 나타났다. 또한 본 연구는 Scott(1990)의 '숨겨진 대본' 개념을 적용하여, 중국 네티즌들이 직접적인 비판 대신 노동 조건 비판을 통해 국가의 '안정' 담론과 '불안정한' 실행 수단 간의 모순을 우회적으로 표현함을 밝혔다. 본 연구는 이러한 노동 조건의 모순이 국가의 안정 담론에 대한 신뢰를 약화시키고, 성과 정당성의 장기적 지속 가능성에 의문을 제기할 수 있음을 주장한다.

▪ 주제어: 그리드 거버넌스, 그리드원, 불안정 노동, 소셜 미디어 분석, 감성 분석, 중국