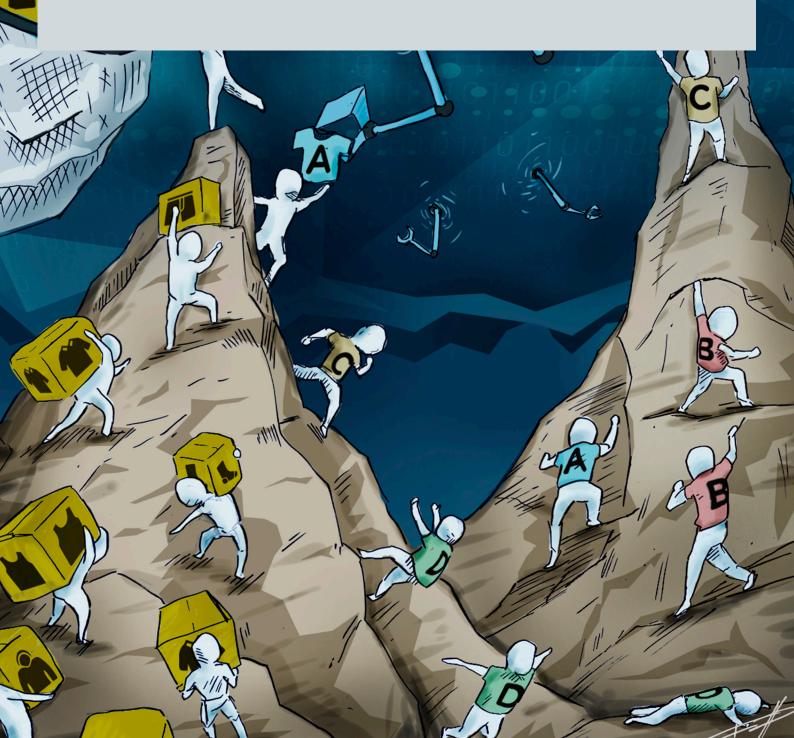
SUPPLIERS AND WORKERS STRAIGHTJACKETED BY ULTRA-FAST FASHION

Labour and human rights risks at Shein and Temu in China



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ABOUT US

Globalworks Lund AB is an independent not-forprofit enterprise based in Sweden. Our mission is to shed light on labour rights and human rights violations by collecting workers' online voices and grievances. We assist corporations, organisations, and authorities to prevent rights violations and identify paths to remedy. For more information on our work and analytical approach visit us at: www.globalworks.se

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TABLE OF CONTENTS

About us
Table of contents
Executive summary4
Ultra-fast fashion's sustainability problem5
Converging business models6
De-mystifying the rise of Shein and Temu6
Data and method8
Data sources
Method9
Data privacy and integrity10
Limitations10
Definition of frequently used terms10
Temu vendors12
The sourcing model12
The chokehold of fines and deductions15
The Shein supplier cluster and vendor model18
Declining margins for core suppliers in the Shein cluster
Informal labour at Periphery 1 suppliers22
Periphery 2 – A return to traditional supply chain sourcing
Shein's vendor model – A Temu look-alike24
Concluding remarks
References

EXECUTIVE SUMMARY

Throughout 2024, Globalworks collected and analysed a large quantity of data on Shein and Temu in order to shed insight on the accelerating ultra-fast fashion revolution. In this report, we look at Shein and Temu's business models through the lens of human and labour rights. We examine specifically the experiences and grievances of Shein and Temu's suppliers and their employees.

This research shows how Shein and Temu take exploitation to a new level. Our findings highlight mechanisms and practices that increase price pressure on garment suppliers and vendors. Additional harm is caused by unrelenting delivery speed requirements, which force suppliers to take on overstocking risks or incur penalties for delays. Manufacturers and vendors are finding it increasingly difficult to break even, let alone make a profit. To safeguard their businesses, they not only pay their employees less and force them to work longer hours, but they also adopt an increasingly non-committal management style that weakens job security, base wages, regulated working time, and occupational health and safety standards. Our research is based on social media posts, videos, online publications, and government documents that feature the voices, views, and actions of employees, vendors, manufacturers, industry experts, journalists, and officials. We connect the dots between thousands of posts and documents to create a comprehensive and systematic picture of how Chinese ultra-fast fashion giants operate and what this means for the rights and welfare of individuals who directly or indirectly work for them. In addition to these primary sources, we incorporate the work of civil society organisations and journalists that researched the social and environmental impact of Shein and Temu.

We conclude that Temu and Shein are spearheading a deeply concerning trend towards the reemergence of a sweatshop economy in which workers labour without formal contracts and under unregulated working hours. Worsening working conditions impact suppliers at lower tiers all over China. Due to intense competition in the fashion industry, more brands and producers will try to follow Shein's and Temu's lead. Regulators have little time left to act.

ULTRA-FAST FASHION'S SUSTAINABILITY PROBLEM

On July 29, 2024, hundreds of angered vendors gathered in front of the PDD/Temu headquarters in Guangzhou. They claimed that they suffer huge financial losses because of the platform's aggressive pricing strategy and repressive after-sales regulations. The outraged crowd demanded to be heard and to negotiate the terms and conditions. The company's management declined to participate in a dialogue, instead sending its employees home for the day and closing the office (Huaerwei Kejiyan 2024).

News about the protests hit global media recently (Liu 2024). In fact, protests already started about a year ago and had gradually gained more traction (Tencent video 2023b). Temu vendors are among a growing number of disenfranchised business owners and their employees in China's ultra-fast fashion industry. They take to the streets as they feel they have nothing more to lose by speaking up even though collective dissent and resistance are severely penalised in China. Their pressed situation demands consumers and regulators attention and concern.

During the past decades, fashion has become faster and cheaper. When we update our wardrobes with new styles, the ones from the previous year go to storage and are eventually discarded. Clothing is primarily disposed of in landfills, often in remote regions around the world. The lifespan of apparel has diminished, fuelling a rush towards planetary boundaries at breakneck speed. Cheap throw-away clothing is not only hazardous to the environment and the climate, but it is also a poor bargain for millions of workers who labour long hours for pitiful wages that do not cover basic needs.

The transition from fast fashion to ultra-fast fashion marks an increase in speed and, ultimately, resource waste. Leading fast fashion brands introduced between 10.000 and 25.000 new items a year. By contrast, ultra-fast fashion companies churn out more than one million new styles during the same period (Brydges 2024). Two Chinese corporations, Shein and Temu, have established ultra-fast fashion as a popular choice among a diverse customer base. In the fall of 2023, Temu had more than 61 million monthly active users in the United States, and Shein was a top-ranked shopping app on the Google Play Store in 115 countries (Zhou et al. 2023). This trend promted us at Globalworks to investigate the two platforms, as we realised that their business models have the potential to undo all progress in sustainable sourcing and production.

Academics, journalists, and civil society organisations (CSOs) have called out Shein and Temu for inflicting social and environmental harm (Amrani 2022; Kollbrunner 2021; Pucker 2024). For instance, the production of Shein fashion involves workers who work up to 18 hours per day without employment contracts (Amrani 2022; Kollbrunner 2021). Shein and Temu have both been associated with the use of Uyghur forced labour (Bloomberg 2022; The Select Committee on the CCP 2023). A Greenpeace study discovered hazardous chemicals in Shein products and critiqued the brand's devastating environmental impact (Greenpeace International 2022). In another report, Greenpeace criticised Temu's business model's CO2 intensity and the company's unwillingness to disclose information about greenhouse gas emissions (Greenpeace International 2024).

Shein's and Temu's popularity among consumers inevitably will inspire competitors to copy them. Fast fashion retailers are pressured into following their leads as market competition gets increasingly fierce. As a result, there is a risk that ultra-fast fashion will determine the entire fashion industry's next development stage. Undoubtedly, this would impede all governmental and social attempts to pave the way for a more sustainable future. To become sustainable, ultra-fast fashion must slow down.

Converging business models

For Shein, business began to boom during the pandemic (Gill 2024). When online shopping was the only way to reach fashion consumers, the company offered more than just the latest trends: it also made them. A large army of micro-influencers, mostly young women, present their monthly Shein hauls to their followers on Youtube, Instagram, or TikTok. They use items from Shein's website to create outfits and styles that their audience loves. Micro-influencer marketing is not only effective; it is also cheap, as many of them hope for fame and, in the meantime, do not earn more than a voucher for their next haul (Amrani 2022).

Shein's clothes and accessories are made in thousands of small and medium-size factories in Guangzhou, in southern China. Styles are produced in small numbers first: 100–500 items. If sales pick up, larger batches are produced within a few days. Demand and supply are seamlessly integrated through Shein's platform, which collects and matches data from consumers and manufacturers. To increase speed and reduce costs, the company does not use intermediaries or ship goods to boutiques around the world. Instead, a rapidly expanding logistics network delivers items directly to the door (The Economist 2021; Pucker 2024; Deighton 2023).

Founded in 2022, Temu battles with Shein for global market share. The company is a spin-off from Pinduoduo (PDD) Holdings, a Chinese e-commerce giant that has revolutionised group buying through gamified shopping and referral systems. Temu, like its parent company, sources a wide range of consumer goods from independent manufacturers or vendors all over China. Temu emulates Shein's small-order, quick response strategy. The company introduces new items and continually assesses market response. If sales go up, the platform will list higher quantities. Temu offers sales leverage through smart marketing and logistics. This service, however, comes at a cost because there is no freedom for vendors to set prices or determine return policies. Different from Shein, Temu operates as an intermediary between manufacturers and customers but is not involved in production (Berkeley Economic Review 2024).

Shein and Temu are both pure cross-border e-commerce platforms. Most Chinese consumers have never heard of these brands. Both companies have shocked their competitors and excited shoppers with prices that are about half of the comparable goods provided by fast fashion brands (Pucker 2024). Shein alone outpaced both Zara and H&M in 2022, accounting for nearly one-fifth of the global fast-fashion market (Dalmia 2023). And as Shein and Temu continue to compete, their business models seem to become more alike. For example, Temu increased its fashion content, and Shein opened its platform for third-party vendors.

De-mystifying the rise of Shein and Temu

The lives and whereabouts of Shein's and Temu's founders are surrounded by a veil of secrecy, which has puzzled and fascinated the world (Davidson 2022; Vogel 2024). Such mystification, however, can easily divert attention away from the main issue, which is a glaring lack of corporate transparency. Even well-respected publications buy into the companies' own questionable storytelling about thriving suppliers and their workers (Temu 2024; Shein 2023; Shaoxing SME Association 2023). The Harvard Business School's "Working Knowledge" series, for instance, lauded the entrepreneurial ingenuity behind Shein and Temu for saving "once-struggling small clothing factories in China." (Deighton 2023). By contrast, our data indicates that profit margins for these

workshops are lower than ever. Another example is a recent article in the Financial Times claiming that "factory workers that source to Shein typically get paid between Rmb7,000 (\$982) and Rmb12,000 monthly, depending on how many clothes they finish" (Olcott 2024). Our and previous investigations, however, show that this pay range requires 12 to 18 hours of work, does not cover basic social benefits, and represents an exceptional rather than typical wage.

Much is at stake if Temu and Shein disrupt an entire industry. We, therefore, need an informed public debate about the environmental and social impact of ultra-fast fashion. De-mystifying Shein and Temu is one step towards that goal. However, the two corporations operate in the shadows of political repression, surveillance, and censorship in China. This report provides new insights and contextualises prior findings.

Our research is based on social media posts, videos, online publications, and government documents that feature the voices, views, and actions of employees, vendors, manufacturers, industry experts, journalists, and officials. We connect the dots between thousands of posts and documents to create a comprehensive and systematic picture of how Chinese ultra-fast fashion behemoths operate and what this means for the rights and welfare of individuals who directly or indirectly work for them. In addition to these primary sources, we incorporate the work of civil society organisations and journalists that researched the social and environmental impact of Shein and Temu.

We show how Temu's and Shine's data-driven business models rely on algorithmic management, which relentlessly presses prices and maximises corporate profits. Management is automated, reducing human interaction and depriving business relationships of reciprocity and fairness. Temu and Shein do not just extract goods and services at extremely low costs. They also collect data from each commercial transaction to profile business partners, including their performance, products, inputs, purchases, and costs. This data is utilised to continuously reorganise supplier networks and pressure suppliers for faster delivery and lower quotations.

Shein's and Temu's suppliers pass on price pressure to their own suppliers and employees. Workers typically lack a formal employment contract, a fixed wage, regulated working hours, and access to legal remedies when their rights are violated. Due to the drudgery of ultra low-cost garment manufacturing, workers suffer from chronic pains and the lack of formalised labour relations prevents them from receiving health insurance and the chance of retiring with a pension someday. With ultra-fast fashion, it seems, the Chines garment sector's sweatshops of the 80s and 90s are coming back.

DATA AND METHOD

The insights in this report come from Chinese social media and web pages. We systematically collect information from different platforms and diverse user groups. We focus on the period 2019 to 2024 as this covers the global expansion phases of both companies. We developed an approach that lays at the intersection of established digital methods. We use insights from quantitative social media research, which is often referred to as social media monitoring (SMM). SMM relies on automated techniques to capture topics, opinions, and sentiments (Branthwaite and Patterson 2011). We combine SMM tools with methods originating from four veins in digital ethnography: meta digital ethnography, social media ethnography, contextual digital ethnography, and cross-media ethnography (Paoli and D'Auria 2021). We combine methods from these different strands in an approach that could be characterised as information crowdsourcing. Our method consists of five analytical layers:

- Systematic or targeted collection of information across different media platforms and data types.
- Identification of material that is relevant to inform a pre-defined research objective.
- Assessment of information credibility through triangulation and corroboration.
- Deriving new insights by identifying relationships between data points.
- Evaluating the significance and impact of these insights in a wider context.

The following paragraphs detail how we applied this approach in this study. We explain where our data comes from, how much data we collected, and how we analysed it.

Data sources

This report relies on social media data, blog posts, articles, reports, and government documents. All sources are publicly available. Approximately 80 percent are Chinese language sources from five platforms:

- **1.** Tieba: China's largest online bulletin board system.
- 2. Zhihu: A Q&A forum similar to Quora.
- 3. Weixin, a.k.a. WeChat: China's largest instant messaging app and social media platform, which is frequently used by businesses and government authorities to disseminate information to the public.
- 4. Xiaohongshu a.k.a. Little Red Book: A social media platform, which is particularly popular among Gen Z users.
- 5. Douyin: A short-form video platform, which goes by the name TikTok outside China.

Data collection from these platforms was complemented with website searches through Baidu, China's largest search engine, and Sogou, a competitor to Baidu, using an alternative search algorithm. In addition, this report includes references to English language sources. We used investigative reports, newspaper articles, government documents, civil society organisation (CSO) reports, and academic research articles.

Method

The report is informed by qualitative and quantitative text analysis. Due to the cross-platform research design of this study, we deployed different methods for examining the content from various platforms.

On Zhihu users can pose questions or contribute answers by invitation. Stakeholders engaging in a specific Q&A thread are more diverse compared to Tieba. We often find employees, former employees, industry experts, business owners, managers employed at suppliers, or users without any specific link contributing or commenting. Long-form posts regularly comprise 500–2500 words, which equals 1–5 pages, single-spaced. Comments on long-form posts consist of approximately 10–100 words. A Q&A thread grows fastest during the first months after posting it. Few threads remain active for more than a year.

We conducted a keyword search on Zhihu to identify Q&A threads. We archived 28 threads that we considered relevant. These threads comprise approximately 350.000 words, or about 700 pages, single spaced. Zhihu threads touch on a broad spectrum of issues related to Shein and Temu compared to Tieba worker forums, and because contributors are more diverse, it is difficult to generate a keyword list.

We analysed the data in three steps:

- 1. We read long-form posts and comments under each thread, chronologically ordered, starting with the most recent contribution.
- 2. We made notes of all information that appeared relevant, surprising, or requiring further investigation.

3. We added codes to each note. These codes linked a note to a topic, such as business model, warehouse workers, vendors, suppliers, etc.

On Tieba, vendors and buyers share information, write about grievances, and seek advice. Users can create forums dedicated to a specific topic. Other users interested in the issue can contribute to the forum topic by creating related discussion threads. Even though there is no formal limit, posts are quite short, usually consisting of 10-100 words.

We scraped data from a PDD/Temu vendor forum with more than 21 million posts. Because we wanted to find out how PDD/Temu manages third-party vendors, we deemed it sufficient to collect a sample of approximately 250.000 recent posts. We examine short-form posts with our analytical platform, social@riskTM.

We analysed the data in five steps:

- 1. We read posts indiscriminately, in chronological order, with the most recent post listed first.
- 2. We coded topics and related keywords that were relevant to our research objectives.
- 3. We created a list of all pertinent terms and paired it with a second keyword list on labour issues based on research we have done since 2016.
- 4. We automatically tagged all posts containing at least one of the keywords.
- 5. We analysed the entire data corpus through interactive keyword and time filters, which allowed us to flexibly structure the data, explore issues, and discover connections.

Some forums on Tieba have existed for more than a decade. Compared to Q&A threads on Zhihu, these forums have a longer life span and are maintained by a relatively homogenous user group. Due to these features, Tieba short-form posts are useful to discern quantitative trends. For example, we can explore whether a topic attracts attention over time. We can also establish if a topic displays a cyclical pattern, i.e., if workers mention it during specific seasons or periods. In this report, we gauge a topic's relative weight by counting the number of posts that mention at least one relevant keyword, expressed as a percentage of all published posts. In order to detect trends, we calculate the relative weight of a topic per month.

On Weixin, Xiaohongshu, and Douyin we searched for relevant information with keywords and #s. On Xiaohongshu, we read about 300 posts. These posts contain up to 200 comments. In addition, we watched about 100 short videos on Douyin. Approximately 10% of the data we reviewed on Xiaohongshu and Douyin contained relevant information.

Data privacy and integrity

If a post does not trigger politically unwanted reactions, refrains from criticising the CCP or the Central Leadership, steers clear of politically sensitive topics, and refrains from calling for collective action, social media users in China can write critical posts without facing censorship or punishment. The data we collect from Chinese social media usually fulfils these requirements. However, the risk of tracing, questioning, or even punishing social media users arises when we combine them in our analysis to provide broader, systematic, and potentially politically sensitive or unwanted insights. Therefore, we remove sources from the reference list that would make it possible to identify an individual user. Similarly, we translate citations accurately to reflect the statement, while also allowing for some literary freedom to prevent traceability through backward machine translation and online search.

We include references to all primary and secondary sources in the text, but we anonymize social media posts from individuals to protect their identity and privacy. References include a document code, the year the document was published, and, in the case of long-form posts, a note number (n) indicating the specific section or paragraph in question.

Limitations

Publicly available data on the Chinese internet is censored. Consequently, we should not be surprised if sensitive topics are either omitted or kept from our view. Furthermore, potentially stigmatising issues might be subject to self-censorship. To ensure that insights are comprehensive, we collect data from different platforms representing diverse user groups and communication styles.

A second limitation relates to the methods used. We construct new insights by connecting social media data published on different platforms, at different times, and by different users with different knowledge levels. However, there is a risk that we misunderstand information or its context. In line with methods in digital ethnography, we use triangulation and corroboration to enhance our research's reliability and validity.

Definition of frequently used terms

Cluster supplier refers to a group of independent manufacturers that frequently or regularly collaborate directly or indirectly to produce goods.

Platform represents the core of Shein's and Temu's algorithmic, data-driven approach to organise and manage relationsships with workers, suppliers, and consumers. We therefore refer to Shein and Temu as platforms.

Supplier refers to independent businesses that work directly or indirectly with Shein/Temu to manufacture goods or offer finished goods to Shein/Temu for sale on their respective platforms.

Vendor refers to suppliers that sell finished goods on the Shein/Temu platform, without involving Shein or Temu in the production process.

Buyer refers to employees at Shein/Temu who procure products and negotiate with suppliers on behalf of Shein/Temu.

PDD (Pinduoduo) –the company name– refers to Temu's parent company. Under the brand name Temu, PDD provides the platform and warehouses used for cross-border trade.

Worker refers to warehouse floor staff or staff involved in workshop/factory production. Workers

can be employed directly by the company or indirectly by labour agencies or laour outsourcing firms. In the context of China, most workers are internal migrants. Migrant workers move between different regions and/or cities in search of employment. They are registered as rural citizens. The location of registration in China determines access to social rights such as healthcare, education for children, unemployment benefits, and so on. In the cities where they work and live, migrant workers often have limited social rights. They typically live apart from registered urban residents, experience social marginalisation, and face harassment from the police and other authorities.

TEMU VENDORS

Temu relies on the supplier base and platform technology of its parent firm, PDD, which is China's third largest e-commerce company. According to PDD, more than 11 million suppliers and vendors in China sell their products through its websites. Temu has expanded PDDs suppliers' reach beyond China, providing sales channels to the United States, the European Union, and other international markets. PDD, unlike shopping sites such as Wish or Shopee, chooses what products are offered and controls the prices (Sander 2023a). Previously, Chinese traders had to rely mostly on Amazon for the distribution of their goods. This came with significant risks of business disturbances as Amazon blacklisted over 50,000 Chinese vendors between 2018 and 2021, resulting in losses of around RMB 100 billion (about € 12,7 billion) (ZHHU 2023b, n. 2).

Many vendors have been eager to harness Temu as a new sales channel. Yet, positive views have changed into cynicism and anger as the platform continuously adjusts its rules to fast-paced price competition (Sander 2023b). Social media posts from vendors voice problems and grievances relating to two specific fields:

Sourcing

Complaints concerning the rules which govern how a vendor can offer their products on the site.

Payments

Complaints pertaining to the built-in renegotiation of prices once the products are displayed.

The sourcing model

Becoming a Vendor on Temu is not difficult. The platform is open to all firms having a business licence, as well as individuals with an ID card. The registration process is completed online, and following a successful assessment of the application and payment of a deposit, the seller is accepted to the platform (XHS 2024a). Temu suppliers must offer products within the platform's prescribed price range. The price must be lower than the equivalent product on 1688, China's largest online wholesale marketplace. Vendors claim that this benchmark is troublesome since the prices or products being benchmarked against are inadequate due to quality and product variations (ZHHU 2023c, nn. 2, 3). According to a vendor, Temu's internal rules require that prices be 30% lower than the price of comparable goods on Amazon, 15% lower on PDD, and 35% lower on Tmall (ZHHU 2023d, n. 11).

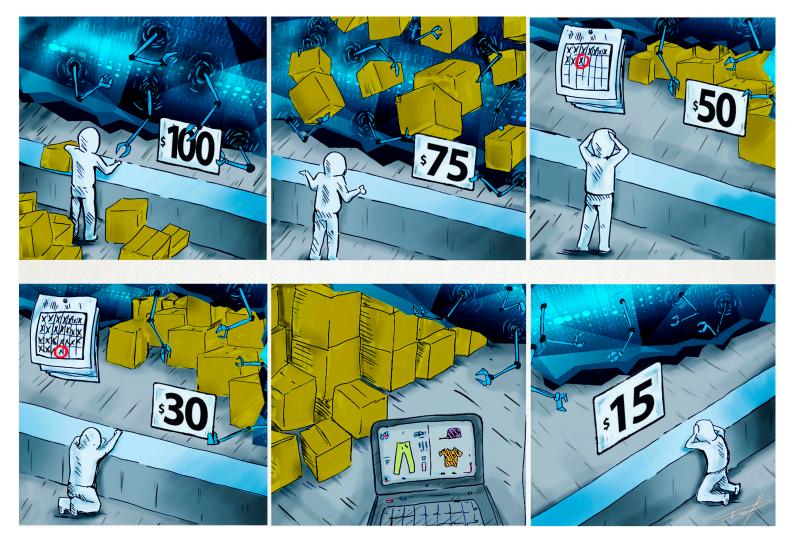
Vendors selling on Temu report that the platform presses them into accepting prices below production costs (ZHHU 2023c, n. 4). A vendor explains that his company offered a good with production costs of RMB 5.5 (about $\notin 0.7$) per piece. Temu's platform determined the acceptable supply price to be RMB 6.5 (about € 0.8). After a while the sales volume increased from 10 pieces per day to 50. At this point, Temu's backend software requested the vendor to lower the price to RMB 4 (about \in 0.5). When the vendor declined, sales dropped (ZHHU 2023d, n. 7). A report states that this phenomenon is not an exception but reflects a systematic approach that many vendors experience. As soon as the sales volume of a product goes up, the platform sends out a request to lower the price. If the vendor does not respond, Temu will lower the price automatically. If the vendor actively declines, the sales volume will go down (ZHHU 2023d, n. 2). The downturn in sales is caused by the algorithm downgrading the item's position on

the site and making it harder to locate. The platform hence demotes the product in question.



Figure 1: Backend software requiring to adjust price (ZHHU 2023d, n. 7).

Figure 2: Temu price setting and renegotiations with vendors.



A vendor provides further information about Temu's price renegotiation process. Following an agreement, all products must be delivered to a Temu warehouse. After a few weeks have passed, the vendor will eventually receive a message stating that a competitor offers a similar product at a lower price. This claim cannot be verified because no reference to the actual rival is provided (ZHHU 2023d, n. 10). The vendor is now under pressure to renegotiate because he/she has already agreed to pay 50% of the transportation costs to the warehouse, has lost money while waiting for the goods to be listed on the platform, and will incur additional costs by paying transportation fees back to the factory (ZHHU 2023e, n. 2).

A merchant describes Temu's renegotiation strategy as "slow moving money" that requires businesses to either lower their prices or wait for the goods to be returned (ZHHU 2023d, n. 11). Another seller thinks that Temu's exclusive authority to upload products to its website is the root cause of the power imbalance. If all products are not delivered to the warehouse, they will not be listed. But if they are, there is no way out of the renegotiation process (ZHHU 2023c, n. 1). A third vendor writes:

> I was asked to prepare large quantities of goods every day. Once hundreds or thousands of goods are supplied, the price will be lowered, and you will be asked to sell at cost price or at a loss. Otherwise, the goods will be removed from the platform. Then return of the items will be delayed for several months. When I finally got back some of them, the packaging was so tattered that I couldn't sell them anymore. (ZHHU 2023d, n. 14)

Temu uses fines to pressure vendors to accept price drops. Products delivered to Temu's warehouses must be sold within a specific timeframe. Products that remain there for too long are fined RMB 500 (about \in 65) each day expressed as a storage fee. After seven days, Temu claims the right to manage the product without consent, which means it will be offered at a reduced price (ZHHU 2023d, n. 8). As a result, vendors are under a twofold squeeze. Either they accept losses by lowering the price below the cost of manufacturing or they suffer from diminishing sales, which results in rising storage fees and, potentially, forced stock liquidation (ZHHU 2023d, n. 9).

A vendor cites provisions from their agreement with Temu, which includes a clause giving Temu the "right of final interpretation" (ZHHU 2023a, n. 6). This clause allows Temu to decide unilaterally when contract conditions are met or violated. Vendors have no formal way to appeal (TIBA 2023a). What is more, Temu can change the rules of engagement without being challenged. As one vendor explains:

The rules of the agreement can be changed at any time. A lawsuit will have to go to Hong Kong. Knowing that small businesses like ours can't compete with these giant companies, we can only submit to the fines that are inflicted on us. (ZHHU 2023d, n. 15)

Vendor experiences indicate that decision-making processes are automated (TIBA 2022, n. 1; 2023b, n. 1). Complaints are vetted through AI ChatBots who appear to be capable of communicating but not modifying judgements (TIBA 2023a). At the same time, vendors that oppose practices like price drops may face further fines. They might also be penalised for using impolite language in discussions with buyers or customers (TIBA 2023b, n. 2) and they might be punished for voicing grievances about the same matter twice (TIBA 2023b, n. 3).

Temu added a function in March 2023 that pressures suppliers to cut their prices. Vendors are now dealing with two additional performance indicators. The first is known as high-price amount, and it measures sales revenue that exceeds that of other vendors selling identical products. For example, if Temu discovers that a seller's product is priced RMB 5 higher than comparable products, and the merchant sells 10 pieces, the high-price amount is RMB 5 x 10 = RMB 50 The second indicator is termed the high-price rate, and it ranks sellers based on their surplus earnings. The backend software asks sellers with the top 5% of excess earnings to reduce their product prices. If they do not agree, they will be limited in their ability to add new products to their stores and/or withdraw funds (sales income in the Temu trading account) (Banyuewang 2024). Temu doesn't say how it defines or identifies high prices. However, because this new 'price evaluation mechanism' is based on a relative ranking, price reductions by the top 5% would inevitably push other suppliers up, exceeding the 95% threshold. As a result, prices are adjusted downward in an infinite cycle. Vendors have been angered by this new approach and staged protest at Temu's headquarters in Guangzhou in October 2023. Online videos show vendors marching with banners stating "Temu limits the withdrawal of funds for no reason" (figure 3) (Tencent video 2023b).



Figure 3 : Vendor protest against Temu's because of the new "price evaluation mechanism" in October 2023 (Tencent video 2023b)

The chokehold of fines and deductions

Temu has inherited its parent company PDD's automated fine system, which lacks transparency and offers no possibilities to dispute an issued fine (ZHHU 2023d, n. 13). A vendor explains that whereas complaining end customers will be reimbursed by Temu right away, the vendor will be fined five times the value of each product subject to a costumer complaint (ZHHU 2023d, n. 16). Another vendor confirms this practice and notes:

I have been fined tens of thousands of yuan. There is no evidence justifying the deduction, neither photos nor statements. The fines will be directly deducted from your payments. (ZHHU 2023d, n. 12) Vendors have become increasingly wary of fines and unfair treatment since mid-2023 when Temu introduced new "after-sales service rules", which gives Temu the right to charge a fine five times the purchasing price for all goods that the platform determines to have quality issues. Since their introduction in June 2023, vendors have been protesting against Temu's after-sales (Tencent video 2023a).

In January 2024, Temu modified the service agreement again and divided fines into quality scores on a scale from 0-100. Quality scores below 60 are punished with a factor of five, higher scores are punished with a factor between 0 - 2.5 (2.5 times for scores $\geq 60 - < 70$, 1.5 times for quality scores \geq 70 - <90, and no fines for scores \geq 90). If there are more than five returns of the same product within 15 days an additional fine of RMB 1000 per item is imposed (Huaerwei Kejiyan 2024). However, according to reports, no merchant knows how the scores are calculated (Sina Finance 2024). Protests culminated on 29 July 2024, when hundreds of protesters gathered at Temu's main building demanding to negotiate Temu's rules (figure 4). The company, however, did not agree to engage in a dialogue and vendors' grievances remain unsolved (Huaerwei Kejiyan 2024).



Figure 4: Vendor protest against Temu's "after-sales service rules" in July 2024 (Huaerwei Kejiyan 2024)

Temu vendor experiences provide insight into how after sales services are organised. The company manages financial transactions directly, while product handling is left up to the vendor and the consumer to negotiate. This separation of responsibilities has become a major headache for vendors:

- The company does not investigate complaints but offers reimbursement by default. This process is enforced if the vendor does not immediately reply (TIBA 2023e, nn. 1, 2; 2024a).
- Vendors contend that the quick reimbursement makes it impossible to win an appeal since it would incur costs for the platform (TIBA 2023d, n. 2).
- If the customer is not responding to the vendor's messages, it will be difficult to secure the product (TIBA 2023d, n. 1).
- Vendors lose money when they have to pay for shipping, receive defective items, or receive empty boxes (TIBA 2024b, nn. 2, 3).
- Consumers can complain to the platform about vendors, which may result in further penalties for their bad attitude (TIBA 2023c, nn. 1, 2; 2024a).

Platform - vendor relations have become more adversarial since autumn 2021, when PDD introduced Temu to major consumer markets in the West (Ferguson 2024) and at the same time pushed into new business lines (agricultural products) in China (PDD 2022). The trend chart in figure 5 demonstrates that vendors are becoming increasingly concerned about fines as well as PDD's return policies, both which increase their costs. The sharp trend upward since early 2022 fits into a larger pattern where aggressive competition for market share is related to unsustainable and unfair business practices. There is, however, a decline of mentions since early 2024, which is peculiar as our qualitative research does not show any changes in Temu/PDD practices.

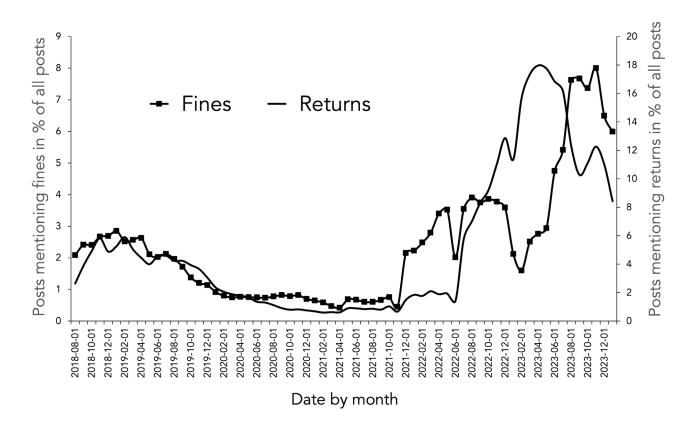
Platform rules advance a race to the bottom by inducing financially unsustainable competition between vendors. A merchant explains:

> You will do anything to lower the price. You can lower the packaging standards to save money at first, and then you can lower the production cost of core components of the product to save money. This is a vicious circle. If your profit margin is 20%, you are going to accept. Others can do it with 15%. If you make it 12%, others will compete with you at 8%. This is an infinite road. Whoever has the lower bottom line will succeed in this business. (ZHHU 2023d, n. 1)

Temu's inherent incentive to lower prices during a product's short life cycle has broader systemic implications. Various vendors who are selling on Amazon say that their products are being copied and sold on Temu. The copies receive many reviews and are offered for a fraction of the price of the original product:

I was making a unique product, but one day I accidentally discovered that my promotion pictures on Amazon were used by a vendor on Temu. I couldn't find any way to complain. I also could not get in touch with the vendor. (ZHHU 2023d, n. 6)

Figure 5: Mentions of fines and product returns in a PDD online forum measured in percent of all sample posts during a month (Source: Globalworks research).



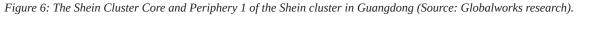
THE SHEIN SUPPLIER CLUSTER AND VENDOR MODEL

Initially, Shein's suppliers were located close to one another to shorten production lead time. The first Shein supplier cluster is known to have originated around Nancun village, Panyu district of Guangzhou city, the provincial capital of Guangdong. Initially, the cluster comprised smallto medium-scale factories. However, as trade volumes started to increase, suppliers expanded their production capacity and factory size. They started to set up their productions in the other nearby villages within Panyu district as well as in bordering districts in particular Haizhu district as well as in other neighbouring provincial cities such as Foshan and Qingyuan (figure 6). Today the production networks and clusters of Guangdong Province (Guangzhou, Foshan, and Qingyuan) are also linked to factories in other provinces, such as Shanxi and Guangxi. The original concept of using the proximity of manufacturing to shorten lead times evolved over time into a traditional supply chain logistics network.

In this section, we show that the geographic expansion of Shein has transformed its manufacturing cluster into a production network with:

- **1.** A core of factories directly managed through the Shein platform, with its production headquarter in Nancun.
- 2. A periphery of small-scale workshops in Guangzhou using informal labour (Periphery 1).
- 3. An extended network of factories in other provinces offering the lowest labour costs (Periphery 2).

This synergy between the three tiers accelerates the transition from sweatshop ultra-fast fashion to ultra-fast fashion at scale. The layered structure allows Shein to take a larger portion of the profits while costs and operational risks cascade down the three tiers.





Declining margins for core suppliers in the Shein cluster

We refer to the core suppliers in Shein's production network as the Shein cluster. Textile and garment manufacturers in the Shein cluster are linked to Shein's algorithmic platform. Suppliers must use Shein's platform for communication and documentation of all production and sales-related issues. Using the system requires skills, experience, and time, thereby increasing suppliers' administrative burdens. An employee writes:

> Our company just started this platform, but I am the only one working on it (I'm also responsible for a store on 1688, which I've never dealt with before). I feel this job is completely overwhelming, and the pay isn't high. The boss wants to continuously list many products and launch new ones, but I am the only one responsible for listing and operating them. May I ask if anyone's company is supplying this platform, or if there are other companies where only one person manages it? I'm just curious because I'm planning to quit. (DOBA 2022)

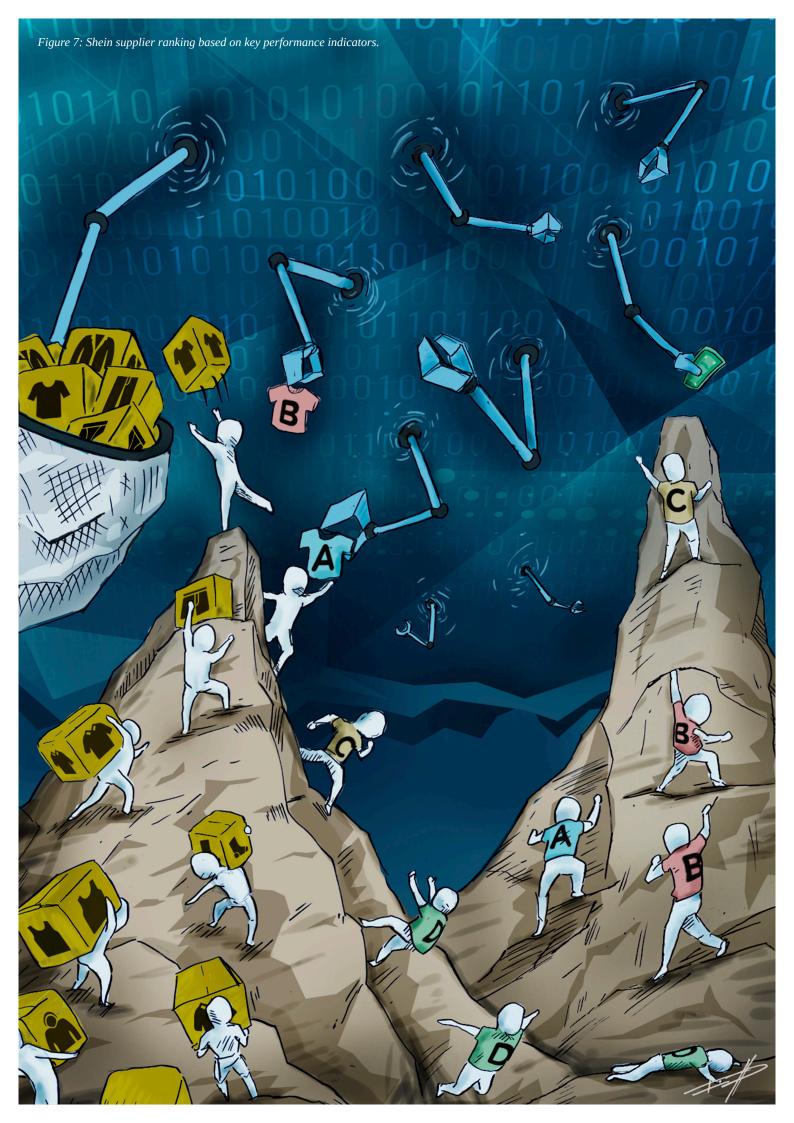
When a manufacturer is integrated into the platform as a core supplier and becomes a member of the Shein cluster, Shein begins to collect data and measure performance with five key performance indicators:

- 1. Response speed for orders
- 2. Timeliness in delivering orders
- 3. Defect product rate
- 4. New styles success rate
- 5. Number of products sold

Key performance indicators (KPIs) 1–4 combined weigh 40%. Sales volume counts for 60% (WEAR 2021, n. 1). The KPIs are transformed into a ranking score on a scale from 0 to 100. Ranking scores are divided into four categories: A, B, C, and D. Priority suppliers are listed in categories A and B. Manufacturers in category C are further divided into five sub-levels. Suppliers scoring less than 60 fall into category D and face elimination (WEAR 2022, n. 1). New suppliers without sufficient ranking data are lumped into a separate category, S. Suppliers are evaluated every quarter (WEAR 2022, n. 1).

The supplier ranking determines how requests for orders and quotes for new styles are distributed. Suppliers must offer prices within a range set by the Shein platform. The price range is based on cost estimates from data collected from the platform itself. To win a bid, suppliers try to strike a balance between profitability and undercutting competitors. Shein, having access to detailed cost information from suppliers, uses this data to compare costs over time and across suppliers. Shein also employs staff to verify costs through calls to sub-contractors (ZHHU 2021, n. 9). Suppliers must use the Shein software to diligently document everything from conversations to design patterns to material costs. The platform's algorithm will process this information and adapt future bidding ranges (ZHHU 2021, n. 10). Thus, suppliers are caught in a double bind: they must cut costs in order to compete, but every cost-cutting measure will ultimately drive down prices, making future bids more difficult to win (ZHHU 2021, n. 11).

Shein claims that its supplier platform empowers manufacturers to improve efficiency and profitability, allowing them to pay workers a wage that is equal to or higher than the regional average (WEAR 2022, n. 2). Yet, this notion contradicts suppliers' experiences, according to our data, indicating that the platform makes it increasingly difficult to earn money (ZHHU 2021, nn. 12–13).



Low supplier margins translate into low wages. Workers complain that the piece rates for Shein products are below those of other brands. To make a living, workers must work between 12 and 18 hours per day, with one or no rest day per week (Kollbrunner 2021). Conflicts between Shein's official claim that workers earn more than the local average and the reality that workers have a condradictory experience are also evidenced in public discussions. For example, in a forum, a recruiter writes:

> The salary level is high. Shein factories employ between 50 and 99 people, with monthly salaries around 7,000 yuan, which is higher than the local average salary. (RECR 2022a)

A worker comments on this post:

The high salary comes from overtime work. Working over 12 hours a day, it's like trading life for money, which isn't worth it. (RECR 2022a)

Job advertising for other Shein suppliers supports the above statement. For example, a factory is looking for workers with a total compensation of RMB 7,000 (about \in 890) based on an hourly rate of RMB 22 (about \in 2,8) (RECR 2022b). A worker with one day off per week would need to work more than 12 hours every day to earn RMB 7000 (gross income). However, because hourly rates are typically related to high and insurmountable production quotas, the actual working time may be significantly greater. If the quota target is not met, a worker will have to work longer or get less money.



Figure 8: Short-form video featuring specialised Shein pattern makers at work (DOYI 2021).

Interviews with workers at Shein factories in 2021 indicated that quality requirements are rather low, allowing them to work faster and produce more. By doing so, they could partially compensate for poor piece rates (Kollbrunner 2021). However, in 2022, Shein began to tighten quality management. Since then, the company has made monthly blacklists for underperforming suppliers and redlists for high-performing suppliers. The performance is based on the number of product returns due to complaints about quality. Suppliers on the blacklist are fined for low ratings or returns related to poor quality (ZHHU 2021, n. 5). A fashion designer writes:

In our fabric market, everyone shies away from Shein's orders. They want cheap prices and perfect quality. Although their orders are large, it's common to hear about peers having many goods returned. (XHS 2023b, n. 1)

The Swiss watch organisation "Public Eye" reports that quality controllers are fined RMB 300–1000 (about \notin 40-130) per batch if they miss a fault (Classen and Hachfeld 2024). This increases pressure on workers, as suppliers must adapt their margins to enable payment of fines. Consequently,

average pay per hour is going down as higher quality requirements and increasing number of corrections elevates the production costs significantly.

Informal labour at Periphery 1 suppliers

The Shein Cluster is linked to a wider network of sub-contractors to secure continuous and timely supply, scale production, and maintain flexibility. According to an investigative article published by the online magazine "Sixth Tone", the majority of these subcontractors have no official contract with a Shein core-supplier, let alone directly with Shein (Sixth Tone 2021).



Figure 9: Promotion material featuring a workshop seeking orders from Shein core suppliers (RECR 2024b).

Ties between the Shein cluster and Periphery 1 suppliers are forged in various ways. Sometimes cooperation is based on kinship or friendship between workshop owners (Sixth Tone 2021). However, there are also matchmaking markets. For example, there are websites where Shein cluster suppliers seek contact with sub-contractors (RECR 2023). On the same websites, small-scale workshops promote themselves as skilled Shein manufacturers who are open to tail on or get orders from core suppliers (RECR 2024b). The Guangzhou Haizhu district hosts an ultra-fast fashion cluster with more than 5,000 textile and garment factories. Migrant worker families from Hubei frequently run these factories. They have developed their own coordination system where job brokers match workers and factories through WeChat groups (WEAR 2024). Factories also recruit workers in dedicated places, such as a sports field (ZHHU 2019, n. 1) and a "recruitment street" (WEXI 2023b, n. 1). Factory representatives arrive early in the morning with samples of the clothes they want workers to make. A piece rate is negotiated on the spot, and the worker is hired for the day or for a production batch (ZHHU 2019, n. 4). The foregoing give evidence that labour relations can be characterised as both informal and precarious in Shein's Periphery 1.

Textile and garment workshops in Periphery 1 are not directly linked to the Shein digital platform because they do not fulfil the company's formal requirements (WEXI 2023c). Shein requires their suppliers to have a production area of at least 1000–2000 square metres (depending on the product), be located in the Pearl River Delta, or have a representation in Guangzhou City (ZHHU 2022, n. 1). As a result, many small-scale factories are unable to collaborate directly with Shein and instead must operate as sub-contractors for core suppliers in the Shein cluster.



Figure 10: Recruitment of day labourers for garment workshops in Guangzhou Haizhu district (ZHHU 2019, n. 1).

In a video, a workshop owner in Haizhu District explains that his factory does not meet Shein's requirements but produces for Shein indirectly. He claims to be an ODM supplier, which means that one of the core suppliers source original products from the workshop. The owner states that he has to follow order developments on the Shein platform daily and adapt production accordingly (DOYI 2023b).

Work in Periphery 1 reveals a new level of precarity. During our investigation, we came across the term "free construction model" (WEAR 2024, n. 1). Essentially, this approach hinges on workers not as employees but as day labourers. Without labour contracts and social security coverage, these workers have no formal employment rights or income guarantees. Interestingly, this "free construction model" is bolstered by online recruitment ads promising a monthly salary of RMB10,000 (about €1,270) provided they work hard enough. Two garment workers working informally in small-scale workshops in Periphery 1 share their experiences:

For someone who has been doing this for over a decade, let me say something about earning a monthly salary over 10,000. You haven't witnessed the extent to which individuals strive to achieve this. They start work just after seven in the morning, and apart from taking a ten-minute break for meals, they keep working hard until half past ten or eleven at night. Being that tired doesn't guarantee that you'll make over 10,000 in a month. It depends on how manageable the work is, as well as whether the boss is conscientious enough to give you a fair price per piece. If you're lucky and the work is good and well-paid, you might make over ten thousand that month, but then the boss might lower your piece rate. You might only make that much for three or four months a year, and the rest of the months you might earn just five or six thousand for working over ten hours a day, with only one day off per month and twenty-five or twenty-six days of overtime. The boss only sees the high wages, not the hard work you put in. There's no contract, no security, no benefits, and no pension.

The canteen food makes you question life; the long-term oppressive work leads to many people developing cervical spine issues and herniated lumbar discs, and their bodies are deformed. That's why many of my colleagues have switched careers. Last year, they changed jobs and never want to work in garment manufacturing again, nor do they want their children to do it. (ZHHU 2019, n. 2)

Every night after work, you have to think about how to get more goods the next day and how to earn a bit more money. You can't even sleep peacefully. Sometimes the leaders are biased and give you difficult tasks, and you end up making much less than others, even if you're exhausted. They say there's no overtime on Sundays, but you still end up working until eight or nine before going home. When my cervical spine acts up, I can't move my neck for a month. I can't get out of bed without lifting my neck with my hands, enduring the pain as tears stream down. It's impossible to be off duty for twelve hours; after work, you still have to finish tasks by hand at home. Every day on the way to work, I look at the people in the industrial zone. Everyone has uneven shoulders, and their bodies are bent, with one side of their waist thinner than the other. If a needle prickles your skin, you simply remove it and continue working. Just thinking about it makes me want to cry. (ZHHU 2019, n. 3)

Periphery 2 – A return to traditional supply chain sourcing

With increasing trade volumes, even sub-contracted suppliers within Shein's Periphery 1 struggle to meet the demand while simultaneously matching the rigid cost structures. As a result, suppliers in the Shein cluster have begun to outsource production to manufacturers in other provinces where labour costs are lower. A factory owner reports that Jiangxi factories receive about 50% of the production quotas to cut labour costs (ZHHU 2021, n. 4). A previous investigation supports this claim, stating that simple products and production elements are performed in Jiangxi, Guangxi, and Hunan (Kollbrunner 2021). This division of labour has a negative impact on garment workers in Periphery 1, as their relatively expensive labour is primarily used to execute demanding jobs. These tasks are often time-consuming. As a result, hourly output and worker pay, which are based on completed pieces, decrease.

This observation links once more Shine's ultra-fast fashion clusters to more traditional forms of supply chain management that are slower in speed. Delayed information about style demand exacerbates the problem. A supplier shares further insights on social media, explaining that information delays make it impossible to respond as quickly as required. To overcome this problem, suppliers produce large numbers of the ordered items and stock them in anticipation of repeated large orders. The supplier notes that the Shein system compels manufacturers to bear the costs of warehousing, which demands additional financial resources as capital is bound up in their stocks (ZHHU 2021, n. 6).

The fact that suppliers assume entrepreneurial risks associated with forecasting product demand is a direct result of Shine's fines for delays (levied by piece) (ZHHU 2021, n. 6) and score deductions for late deliveries. These practices also contradict Shein's claim that the principle of initial small orders and repetitions based on actual demand avoids overstocking and, by extension, contributes to sustainable production by reducing waste (Amrani 2022). Supplier statements indicate that overstocks can only be sold as discount goods (ZHHU 2021, n. 6). This statement is supported by advertisements from garment manufacturers and trading companies offering Shein styles in large quantities that are not second-hand (MICHN 2024; WEXI 2023a; DOYI 2023a; RECR 2024a).

Shein's vendor model – A Temu look-alike

Third-party vendors at Shein are a sideline business compared to Temu. As a result, there is little information about them available on social media. Yet since autumn 2023, a few vendors have begun to share their experiences. These posts indicate that Shein copies some of Temu's most exploitative practices.

The more you invest, the worse it gets. The initial three-month probation period is designed to foster rapid growth through continuous stock preparation, essentially meaning that the more you invest, the more you lose. Once the probation period is over, unsold items are returned to you—this is the first trap. Once you join the platform and your traffic stabilises, they won't increase your traffic anymore. Then they pressure you to keep adding new products. Once you do, they demand you run promotions and lower prices to gain traffic—this is the second trap. (XHS 2023a, n. 1) Another vendor complains about aggressive negotiations and price quotes that are far below production costs:

> I haven't even reached the step of preparing stock yet; just listing products is killing me. The items I post are either rejected, archived, or given an extremely low price. My cost is 17, and they give me a bargaining sheet for 4.3! I really have no mood left at all. (XHS 2023a, n. 2)

Vendors are also concerned about the way Shein handles the return of unsold products. Smaller vendors, unable to offer their stock through alternative sales channels, must wait for three months to receive their goods back, which implies significant costs (XHS 2023a, n. 3). This problem is aggravated by an information delay of up to four weeks, during which vendors continue to supply stocks even when the products aren't selling (XHS 2023a, n. 4). Consequently, the company forces vendors to bear the costs of oversupply by levying heavy fines on any delay: For afternoon orders, as long as you process the shipment in the system before 12 pm the next day, it's fine. Orders from the same day must be sent out. I'm someone who's been hit with a 100,000 fine before. (XHS 2024b, n. 1)

I listed too many products, and even with emergency purchasing, I cannot get enough stock. If I can't ship by the next day, I face fines of 1-2k. It's a mess. (XHS 2024b, n. 2)

Shein, like its rival Temu, has everything to gain from pleasing customers and nothing to lose by offending powerless vendors. From the platform's perspective, oversupply incurs no costs, while too few stocks may lead to delayed deliveries, which could reduce sales and cause negative reviews. It is not difficult to foresee that future revisions to the terms and conditions will continue to raise suppliers' costs, reduce margins, and limit their rights and discretion.

CONCLUDING REMARKS

The purpose of our investigation is to gain a comprehensive understanding of human and labour rights violations at Shein and Temu suppliers in China. Using openly accessible social media posts, videos, and articles, we demonstrate how technology, business strategies, and management practices facilitate exploitation. The results do not only support previous findings but also allow us to interpret them as the outcome of data-driven power abuse. Our analysis explains how labour violations and human rights violations are orchestrated through algorithmic management. These practices go far beyond the fast-fashion clusters in Guangzhou they are usually associated with. Worsening working conditions are cascading down to lower tiers in Western and Central China sending the country's garment sector back into the sweatshop economy of the 1980s and 1990s.

Shein and Temu take exploitation to a new level. Our findings highlight mechanisms and practices that increase price pressure on garment suppliers and vendors. Additional harm is caused by unrelenting delivery speed requirements, which force suppliers and vendors to take on overstocking risks or incur penalties for delays. Manufacturers and sellers are finding it increasingly difficult to break even, let alone make a profit. To safeguard their businesses, they not only pay their employees less and force them to work longer hours, but they also adopt an increasingly non-committal management style that weakens job security, base wages, regulated working time, and occupational health and safety standards.

Shein and Temu have unlocked a pandora's box of data-driven exploitation and power abuse. Their business models contribute to increased waste generation, resource depletion, and intensified CO2 emissions. Due to intense competition in the fashion industry, more brands and producers will try to follow their lead. Thus, the detrimental force of ultra-fast fashion will push us further away from a sustainable future for the industry. Regulators have little time left to act.

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