

The Paradoxical Performance of North Korean Logistics: Beyond Western Standards

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Abstract

North Korea, one of the world's most closed and authoritarian regimes, is characterized by a centrally planned economy and profound diplomatic isolation. Since its inception, the regime's political survival—anchored in a ruling dynasty—has consistently outweighed conventional priorities of economic growth and development. Far from a mere technical function, logistics constitutes a core mechanism in consolidating regime power through the strict and hierarchical management of material flows. Rather than emphasizing speed or efficiency, the North Korean system prioritizes the uninterrupted continuity of critical operations and exercises rigorous control over the movement of goods and people, thereby securing institutional endurance amid a hostile geopolitical landscape. A thorough analysis of historical and ideological factors uncovers a paradoxical logistical performance: a stable and sustained operation founded on opacity and chronic scarcity, which are actively leveraged as instruments of governance. By challenging dominant Western frameworks for assessing supply chains, this research note advances the view of logistics not merely as a technical endeavor but as a strategic tool of political authority and a crucial component of systemic resilience—even within the context of a totalitarian regime.

Keywords: Authoritarianism, Control, Geopolitics, Logistics, North Korea, Performance, Resilience, Supply chains

DOI: 10.7176/DCS/16-1-06

Publication date: February 28th 2026

1. Introduction

In the Western collective imagination—shaped by decades of anti-communist discourse, sensationalist media coverage, and a steady stream of documentaries—North Korea is portrayed as the archetype of a State frequently characterized in the academic literature as structurally constrained and economically underperforming: plagued by chronic poverty, cyclical famines, authoritarian rule concentrated in the hands of an unaccountable elite, diplomatic isolation, and relentless repression of dissent (Lankov, 2015; McEachern, 2018; Gray & Lee, 2021). While this dominant narrative is grounded in observable realities (Smith, 2015), it often overshadows a less visible yet equally significant aspect: the regime's capacity to maintain internal stability amid persistent material shortages and prolonged exposure to external economic and political constraints. This enduring stability is made possible by a logistical system that is highly centralized, strictly hierarchical, and characterized by systematically limited transparency mechanisms—one that enables resource allocation, internal flow control, and resilience in the face of sweeping international sanctions (Bennett, 2013). As Adeolu (2019) notes, despite its international marginalization, North Korea exerts real influence on regional dynamics, especially in South Korea, which must continuously recalibrate its economic and security policies in response to the North's unpredictability. Thus, instead of dismissing North Korea as a geopolitical outlier, it is more analytically productive to regard it as a radical testing ground for logistical governance under conditions of extreme constraint.

The detour through North Korean logistics opens an unexpected analytical pathway: one where performance is not measured by abundance or speed, but by the regime's ability to persist over time despite chronic adversity. Far removed from Western standards of efficiency and fluidity, North Korea—as a socialist developing State—has built a system of flow management that serves first and foremost the formalization of an authoritarian governance project centered on regime continuity and centralized control. Official distribution channels coexist with informal practices, tolerated only insofar as they reinforce regime stability. Resource allocation follows political—and often military—priorities, rather than economic logic (Hinata-Yamaguchi, 2021). Within this framework, logistics dimensions are not merely as an operational infrastructure but as an instrument of governance: a mechanism of control as much as a tool of survival. Crucially, the North Korean model generates neither economic growth nor technological innovation. Yet it ensures, through its very rigidity, the continuity of State power. Herein lies the paradox: a system widely perceived as obsolete—even operationally constrained

under dominant international performance standards—manages to fulfill critical State functions under extreme structural constraints. In this sense, North Korea represents a liminal case, one that compels us to rethink the criteria of logistical performance—not only through the lens of competitiveness, but also through those of political endurance and material sovereignty in an increasingly fragmented world.

Unpacking North Korea’s logistical functioning inevitably raises a central research question: *whether, despite structural isolation, the country has developed distinctive logistical practices, and how such configurations can be systematically characterized*. Addressing this question is inherently challenging due to profound informational opacity and the near-absence of verifiable primary data. Official statistics remain limited, internal administrative records are inaccessible, and State-controlled dissemination severely restricts external observation (Lee *et al.*, 2024). Consequently, conventional empirical observation is not feasible, requiring analytical work to rely on indirect evidence construction and structured inference. Against this backdrop, the research note adopts a qualitative design based on a systematically curated corpus of peer-reviewed academic literature, complemented by secondary datasets when relevant. Rather than compensating for data scarcity through ad hoc inference, the analysis builds on a theoretically coherent selection of studies across logistics, political economy, and authoritarian governance. Source selection follows criteria of scholarly relevance, conceptual contribution, and disciplinary recognition, ensuring analytical robustness rather than exhaustive coverage. Such design enables a rigorous examination of North Korea’s logistical configuration while reducing interpretive bias and limiting ideologically driven narratives often associated with closed-regime analysis. By privileging structured theoretical reconstruction over empirical completeness, the study situates itself within a research tradition that treats constrained data environments not as a limitation to be circumvented, but as a condition enabling theory-building under uncertainty.

Box 1. Methodological Approach

In geopolitical environments characterized by high levels of information opacity, access to direct primary data is institutionally constrained, requiring a research strategy grounded in the construction and triangulation of heterogeneous secondary materials. The corpus is based on a reasoned selection of peer-reviewed academic works and specialized books, identified for their conceptual relevance and their capacity to structure key debates in logistics, authoritarian regimes, the geopolitics of infrastructure, and the political economy of sanctions. In line with Snyder (2019), the objective is not descriptive exhaustiveness, but rather the production of an integrative synthesis of existing knowledge that enables the construction of a coherent analytical framework grounded in prior literature. Source selection follows a concept-centric structuring approach in the sense of Webster & Watson (2020), privileging contributions that develop recurring explanatory mechanisms rather than an exhaustive aggregation of dispersed studies. The analysis also incorporates indirect data—satellite imagery, dissident testimonies, and institutional reports from Western countries—used not as irrefutable evidence, but as analytical resources for reconstructing North Korean logistical configurations.

The analysis adopts an interpretive and theory-building approach, mobilizing the selected literature as indirect empirical material to reconstruct rationales operating within a closed and non-directly observable organizational system. It relies on an abductive logic aimed at identifying structural regularities from fragmented and heterogeneous elements, while ensuring systematic cross-validation of interpretations across sources. In accordance with Pratt (2009), the methodological framework ensures a transparent and explicit transition between data, interpretations, and theoretical construction, maintaining a clear separation between empirical material, analytical inferences, and theoretical outcomes. This separation renders the reasoning process visible and allows assessment of the plausibility of interpretations. The objective is not to produce an exhaustive reconstruction of North Korean supply chains, but to identify sufficiently stable and recurrent organizational configurations to support controlled analytical generalization. The analysis thus proceeds through a gradual increase in abstraction, from literature-derived elements to the identification of organizational patterns. Each section concludes with a “*Main findings*” box, distinct from the interpretive layer, consistent with Pratt’s (2009) recommendation to explicitly separate data and interpretation to enhance traceability of the analytical chain.

2. Foundations of North Korea’s Political Economy

The Democratic People’s Republic of Korea (DPRK) was officially established in 1948 amid escalating tensions between the United States and the Soviet Union. Following Japan’s surrender in 1945, which ended its 35-year colonial rule over the Korean Peninsula, the Allies hastily divided the territory along the 38th parallel as a temporary administrative measure, an arbitrary partition that soon solidified into a lasting geopolitical boundary. In the North, the Soviet Union installed a communist government led by Kim Il-sung, a former guerrilla and

anti-Japanese resistance fighter, while in the South, the United States backed the formation of an anti-communist regime under Syngman Rhee, a Western-educated independence activist who championed a strong centralized executive and vehemently opposed communism. This artificial division quickly heightened tensions and ultimately culminated in the Korean War (1950–1953), which ended with an armistice but no formal peace treaty. The conflict inflicted a deep and enduring trauma on the DPRK leadership, fostering a persistent sense of hostile encirclement and existential threat that justified a political doctrine rooted in constant vigilance, and militarization (Cumings, 2005; Lankov, 2009). The Korean War became a defining event that shaped North Korea's strategic culture, where isolation and closure from external influences are seen as vital to survival, and the ongoing Cold War context further legitimized an authoritarian and highly centralized State structured around pervasive mechanisms of territorial and population control.

In this context, the *juche* doctrine (주체), developed by Kim Il-sung, emerged as the regime's core ideological foundation. Centered on total economic, political, and military self-reliance, it legitimized the rejection of multilateral institutions, the closure of national borders, and the creation of an expansive State apparatus. Although North Korea intermittently benefited from material support provided by socialist allies—particularly the Soviet Union and China—it never relinquished its commitment to strategic autonomy (Armstrong, 2013). This commitment is reflected in a distinctive logistical organization whereby the State exerts absolute control over production, distribution, and exchange networks. The economy remains entirely planned, market mechanisms are marginalized, and military demands consistently take precedence over civilian needs. In a country where survival is framed as an ongoing struggle against real or perceived external threats, logistics is decoupled from conventional efficiency-oriented objectives, instead functioning as a political infrastructure designed to sustain a besieged State entrenched in a perception of persistent external threat as documented in the academic literature (Smith, 2009). Consequently, the absence of a free market, extreme centralization, and diplomatic isolation are not aberrations but deliberate outcomes of a conscious political project.

The North Korean regime's distinctiveness stems largely from its dynastic nature—an extraordinary anomaly within communist systems that are ostensibly founded on egalitarian and non-hereditary principles. Power was gradually transferred from Kim Il-sung to his son Kim Jong-il during the 1990s, who in turn passed it on to his son Kim Jong-un in December 2011, thereby institutionalizing a three-generation succession that effectively established a totalitarian monarchy. This system is reinforced by an omnipresent and highly ritualized cult of personality centered on the supreme leader (Byman & Lind, 2010). The dynasty rests on an extremely hierarchical social structure anchored by the *songbun* system (성분), a political and social classification that dictates differential access to resources, employment, housing, and even food security (Collins, 2012; Patterson, 2017). Within this framework, State supply chain facilities transcend mere material management to become a critical instrument of political control, simultaneously distributing privileges and enforcing sanctions. The *songun* doctrine (선군)—which prioritizes the military above all national concerns—justifies a highly asymmetrical allocation of resources concentrated on the armed forces (French, 2014), whose presence has been notably reported since late 2023 in Ukraine, where estimates suggest that several thousand North Korean soldiers have been deployed in support of Russian forces. Each dynastic transition further entrenches these mechanisms, intensifying logistical centralization and deepening the compartmentalization of information.

North Korea's closure manifests not only through diplomatic isolation but also via stringent and pervasive control over its population. Internet access is virtually nonexistent for large majority of citizens, international communications are strictly prohibited, and internal travel is tightly regulated through permits granted sparingly (Hassig & Oh, 2009). This security apparatus is rooted in a political culture profoundly obsessed with maintaining internal stability, where mass surveillance is regarded as a fundamental pillar of national sovereignty. Following the devastating famine of the 1990s, the State reluctantly tolerated the emergence of informal markets, known as *jangmadang* (장마당), which fulfill essential survival needs, yet these remain subject to constant monitoring by security forces (Smith, 2015). Such measures should not be misconstrued as signs of economic liberalization but rather as tightly controlled safety valves. The management of critical material goods—including food, medicine, and energy—is embedded within a framework of differentiated control, wherein access to resources functions as a deliberate instrument of social regulation. This distinction is pivotal to understanding the regime's modus operandi: beyond mere political isolation, the organization of material flows itself reveals an authoritarian vision, warranting a tailored analysis of the logistical mechanisms deployed under such conditions. Despite isolation and centralization, North Korea possesses untapped resources, a disciplined labor force, and favorable geography, revealing latent economic potential that could support future development under certain conditions (Choe & Mahoney, 2018).

Box 2. Main Findings

The empirical material points to a structurally coherent configuration in which political ideology, institutional design, and material circulation are tightly co-constituted rather than functionally differentiated. Three core findings emerge. First, the North Korean political economy is not merely centralized but logistically constitutive: State authority is enacted and reproduced through the direct control of production, distribution, and access to essential goods. Under such conditions, logistics cannot be analytically separated from governance; it operates as a primary vector through which sovereignty is materially enforced. Second, ideological doctrines such as *juche* and *songun* do not remain at the level of discourse but translate into operational principles that shape allocation priorities, infrastructural investments, and flow hierarchies. Resource circulation is therefore not governed by efficiency considerations but by a politically codified hierarchy of strategic importance, in which military and regime-preserving functions systematically prevail over civilian needs. Third, the combination of dynastic rule and the *songbun* classification system produces a socially stratified logistics regime in which differential access to goods becomes a mechanism of political ordering. Distribution infrastructures thus serve a dual function: ensuring minimal systemic reproduction while simultaneously institutionalizing inequality and reinforcing regime loyalty.

3. Asymmetric Logistics in an Isolated Regime

North Korean logistics operates within a highly distinctive and complex context where political and ideological imperatives supersede the conventional market-driven pursuit of efficiency. This exceptional reality generates multifaceted challenges that extend well beyond traditional supply chain management frameworks, demanding a nuanced and comprehensive analysis of both internal constraints and external pressures. Political isolation and authoritarian centralization have shaped a logistics model fundamentally divergent from international norms—characterized by a highly centralized organization in which regime stability constitutes the dominant coordination principle. Moreover, despite stringent sanctions and geographic isolation, Pyongyang maintains a network of clandestine connections and selective openings with specific external partners. A detailed examination uncovers coherent strategic practices, illicit supply routes, and infrastructure unevenly distributed across the territory, reflecting a tensioned configuration between political sovereignty imperatives and economic constraints. The interplay between these two dimensions—an internal logic of control and external tactics of adaptation—reveals the profoundly paradoxical and dynamic nature of North Korea’s supply chains, where rigidity and ingenuity coexist to navigate an exceptionally hostile and constraining environment. **Rather than constituting an analytical outlier, this configuration reflects a structurally produced regime of logistical adaptation subordinated to political continuity and State survival.**

3.1. Logistical Rationalities

North Korea’s logistical organization cannot be fully understood without situating it within the country’s unique political and ideological framework. Diplomatic isolation, authoritarian centralization of decision-making, and rigid hierarchical access to resources have been combined to produce a profoundly atypical system. In a context where markets operate only on the margins and international trade is severely constrained, ensuring the steady flow of essential goods remains an ongoing and structural challenge. Since North Korea conducted its first nuclear tests in October 2006, the regime has faced comprehensive economic sanctions imposed by the United Nations, the European Union, and individual States including the United States and South Korea. These sanctions, frequently tightened over time, sharply restrict imports of fuel, industrial technology, luxury items, and even select food products, compelling Pyongyang to devise alternative logistics networks—frequently operating through informal and non-transparent channels documented in secondary sources (Moon & Whang, 2026). Recent empirical evidence confirms that these sanctions have deeply affected the availability of essential medicines and medical supplies, leading to the development of alternative logistical arrangements and humanitarian loopholes to meet basic public health needs (Sempungu *et al.*, 2025). Despite these extreme constraints, North Korea manages to sustain a vital minimum flow of civilian and military goods, albeit through substantial delays and processes characterized by low allocative and operational efficiency under standard logistical benchmarks (Noland, 2019). This paradox calls for a reassessment of conventional logistical performance metrics, emphasizing a distinct mode of optimization centered on resilience within a highly constrained political environment (Haggard & Noland, 2007). Table 1 summarizes the primary characteristics and logistical strategies of the North Korean regime in contrast with Western standards. Empirical patterns suggest that continuity of flows emerges less from efficiency-driven optimization than from institutionalized adaptation to chronic scarcity and externally imposed constraints.

Table 1. Contrasting Logistical Rationalities: Western Model vs. North Korean Model

Dimension	Western Logistical Model	North Korean Logistical Model
<i>Primary objective</i>	Speed, efficiency, and cost optimization through continuous improvement and demand forecasting	Preservation of political control through the deliberate regulation of flows and suppression of logistical transparency
<i>System configuration</i>	Decentralized, often market-driven networks with flexible and adaptive supply chains	Highly centralized, State-planned structures with rigid hierarchies and minimal autonomy for local actors
<i>Information management</i>	Real-time data sharing, transparency, digital traceability, and interoperable platforms	Strict compartmentalization, limited data circulation, and use of logistics secrecy as a tool of political domination
<i>Risk management</i>	Strategic efforts focused on diversifying suppliers, creating system redundancies, and developing comprehensive resilience plans to handle disruptions	Acceptance of chronic scarcity, overstocking of essential goods, and reliance on ideological mobilization to manage shocks
<i>Infrastructure strategy</i>	Commitment to advancing technology, increasing automation, and integrating supply chains on a global scale	Prioritization of redundancy, manual labor, and geopolitical insulation from foreign logistical dependence
<i>Flow orientation</i>	Demand-driven, agile, customer-centric logistics focused on responsiveness and real-time adaptation	Supply-driven, command-oriented flows serving regime stability rather than user satisfaction

Source: The author.

This form of optimization is rooted in the continuous adaptation to extreme constraints, which are not endured but actively reframed as foundational organizing principles. Faced with deteriorating infrastructure and chronic material shortages, North Korea responds through the large-scale mobilization of human resources, the artisanal maintenance of obsolete equipment, and the systematic anticipation of basic logistical needs (Fifield, 2019). In sharp contrast to global supply chains—where responsiveness, flexibility, and cost reduction are viewed as essential drivers of competitive advantage—the North Korean approach places regime stability and centralized political control at the heart of its logistical priorities, deliberately sidelining innovation and consumer satisfaction. What emerges is a distinct form of *non-market optimization*, characterized by extreme centralization, rigid prioritization of flows according to political imperatives, and a deeply ingrained doctrine of strategic self-sufficiency. Although this model deviates fundamentally from Western standards, it nonetheless exemplifies a paradoxical form of logistical resilience, aligning with recent scholarship that redefines performance under conditions of chronic crisis and systemic adversity (Shishodia *et al.*, 2023). The apparent resilience, however, may come at the cost of foregone structural transformation, as recent research underscores the pivotal role of ICT as a high-impact driver of economic growth in underdeveloped and constrained economies (Lee & Yang, 2026). In this light, North Korea’s ability to maintain operational flows—civilian and military alike—despite isolation, embargoes, and international sanctions, attests to a functional logistical system whose core objective is not economic performance but the preservation of political power and regime continuity (Kim *et al.*, 2023). Resilience in this configuration is not emergent but deliberately produced through institutional arrangements that stabilize scarcity as a governing condition.

Beyond its domestic logistical management challenges, North Korea faces profound geographic and geopolitical constraints that severely limit the efficiency and development of its port and rail infrastructure. As Ducruet & Jo (2008), Ducruet *et al.* (2009), and Ducruet & Yoon (2024) contributions rigorously demonstrate, the country’s strategic access to a substantial coastline has failed to translate into significant maritime commercial activity. Port operations remain minimal and underutilized, hindered by chronic industrial underdevelopment and a persistent absence of both domestic and foreign investment. Hong *et al.* (2014) highlight that these limitations are further exacerbated by formidable barriers to North Korea’s integration into Northeast Asia’s regional logistical corridors. Rooted in decades of diplomatic isolation and an extensive international sanctions regime, these structural handicaps critically impede the country’s capacity to engage meaningfully in cross-border trade and logistics. The situation escalated in October 2024, when Pyongyang systematically dismantled all road and rail connections to South Korea, framing the drastic action as a “preventive” measure against alleged external threats. The decision starkly illustrates the regime’s prioritization of sovereignty and security over economic connectivity, reinforcing a strategic posture of isolation amid geopolitical tensions. Yet, beyond the rigid internal structures, the regime has also developed creative and often covert logistical strategies to maintain selective external linkages. Observed infrastructural geographies reveal a long-term strategy of controlled connectivity in which access to external systems is selectively structured and politically conditioned.

3.2. Shadow Networks and Selective Connectivity

Contrary to the perception of complete isolation, North Korea selectively pursues incremental improvements to its international logistics, maintaining essential external connections despite strict sanctions (Lee, 2020). Such a pragmatic approach is evident in informal cross-border production and labor networks with Chinese firms that operate discreetly, circumventing formal restrictions (Lee & Gray, 2020). Beyond legitimate economic activities, Hastings (2015) documents North Korea's reliance on illicit drug trafficking networks as covert supply chains used to bypass sanctions and sustain critical revenue streams, highlighting the regime's broader use of clandestine operations within asymmetric networks. The country's logistical landscape reveals these complexities: Figure 1, adapted from Ducruet & Yoon (2024), illustrates a spatially concentrated and unevenly distributed road and rail infrastructure, strategically designed to secure regime control by prioritizing key corridors. Combining selective openness with deliberate closure, the regime emphasizes the preservation of technical and territorial sovereignty amid severe geopolitical and economic constraints. A striking example is the fishing industry, where international sanctions and lost legal quotas have increasingly forced North Korea to rely on unlicensed maritime operations. Proxy fleets and foreign intermediaries enable the continuation of seafood exports, exemplifying covert supply chain strategies that navigate external pressures (Ward *et al.*, 2021). Such adaptive efforts highlight Pyongyang's complex balancing act between isolation and necessary engagement, aimed at safeguarding vital economic lifelines while minimizing vulnerabilities. Connectivity in this context operates through a calibrated duality in which exposure to external systems is simultaneously enabled, constrained, and strategically obscured.

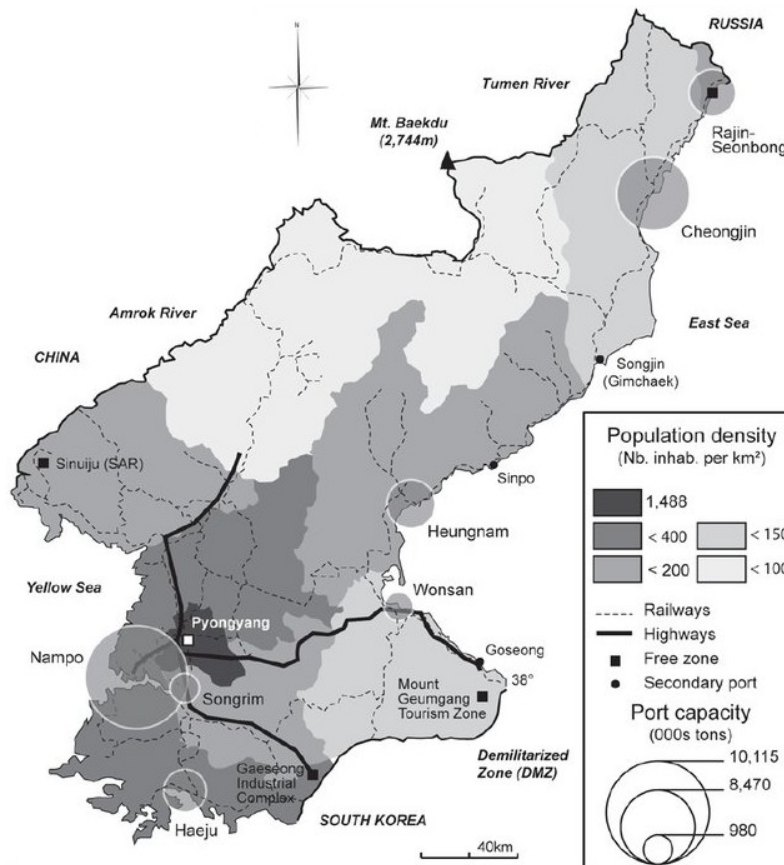


Figure 1. Overview of North Korea's Road and Rail Infrastructure Network
 Source: Adapted from Ducruet & Yoon (2024).

However, the distinctiveness of North Korean logistics lies not only in its centralization or isolation, but also in the asymmetrical spatial organization and deliberate territorial prioritization. The country's logistical landscape is markedly unbalanced, with infrastructure, transport capacity, and resources concentrated along strategic spokes that connect Pyongyang, the Western port of Nampo, and selected industrial zones near the Chinese border. This selective geography reflects a strategy of forced rationalization, whereby sustained logistical support

is reserved exclusively for politically sensitive or economically critical areas. Substantial portions of the territory—particularly the mountainous Northeast—remain systematically excluded from formal supply chains. Far from being incidental, this imbalance constitutes a deliberate mechanism of differentiated mobility control and targeted resource allocation. What emerges is a logistical system that is not only hierarchically structured, but also spatially stratified, reinforcing the consolidation of the State center while marginalizing peripheral regions. As Ward (2020) argues, logistics in North Korea operates as a mode of governance, structuring the unequal distribution of development and political power. This model fundamentally challenges conventional norms of seamless and uniform connectivity, favoring instead a selective network architecture driven by imperatives of control, security, and legitimacy. Spatial differentiation functions here as a governing technology through which infrastructural inclusion and exclusion are systematically produced.

Satellite imagery from February 2019 provides valuable insight into North Korea's covert coal export operations conducted despite extensive international sanctions (see Figure 2). The photographs capture North Korean vessels anchored near strategic ports such as Nampo and Rajin, engaged in ship-to-ship transfers with foreign-flagged carriers in nearby waters. This visual evidence reveals a coordinated maritime arrangements involving multiple actors and jurisdictions that enables the regime to sustain a crucial supply chain for coal exports—a key source of foreign currency. Rather than isolated incidents, the images depict a systematic and recurring practice involving multiple actors across several jurisdictions, highlighting the complexity of the operation. The regime's ability to uphold these flows under severe economic and political constraints demonstrates notable logistical ingenuity and adaptability. By exploiting geographic advantages and intimate knowledge of maritime routes, North Korea leverages concealment, mobility, and operational redundancy to navigate enforcement gray zones. This photographic documentation underscores the significant challenges faced within a coercive international environment, illustrating how authoritarian resilience materializes through hidden and adaptive logistical systems. Bringing shadow supply chains to light enhances understanding of how States under constraint creatively navigate restrictions to maintain vital economic lifelines, despite ongoing efforts to disrupt their operations.





Figure 2. North Korea's Coal Supply Chain: Visual Insights from Rajin and Nampo Ports
Source: <https://www.38north.org/2019/04/supplychaincoal040119/> (Accessed July 6, 2025)

Box 3. Main Findings

The empirical material examined highlights several structuring characteristics of North Korean logistics. First, logistical organization is fundamentally subordinated to political imperatives, with regime stability consistently prevailing over efficiency or cost considerations. Second, the system operates through a dual configuration combining rigid internal centralization with selective and often covert external connectivity, allowing the regime to maintain essential flows despite severe sanctions. Third, spatial organization emerges as a critical dimension of control, with infrastructure and resources deliberately concentrated in politically strategic areas while peripheral regions remain structurally marginalized. Finally, the evidence points to a form of resilience that is not based on flexibility or responsiveness in the conventional sense, but rather on the institutionalization of scarcity, redundancy, and opacity as governing principles. This configuration further suggests a systemic capacity to absorb shocks through anticipatory control and enforced coordination mechanisms. Far from representing dysfunction, such characteristics collectively reveal a coherent logistical system specifically designed to operate under conditions of constraint, uncertainty, and geopolitical pressure, while continuously adapting to evolving external constraints without altering its underlying geopolitical vision.

4. Supply Chains Under Authoritarian Rule

Expecting North Korean logistics to exhibit characteristics typical of Western high-performance systems—such as trade fluidity, cost optimization, and data transparency—would be misguided. Instead, within an environment defined by extreme compartmentalization, North Korea demonstrates a notable capacity to sustain operational flows under extreme constraints in orchestrating largely invisible and covert flows. This operational effectiveness hinges on a shadow logistics network that integrates elements of a war economy, the redirection of humanitarian aid, and the strategic mobilization of the diaspora (Bermudez, 2017). Crucially, this network is designed not to drive economic growth but to support the continuity of an authoritarian regime oriented toward strategic autarky. This aligns with Jeness & Schuetz's (2021) observation that authoritarian States consistently harness logistical spaces as instruments of political power, adapting logistical practices to reinforce regime stability. Such dynamics are further reinforced by evidence that the effectiveness of external geoeconomic

pressures is significantly mediated by North Korea’s strategic responses and political priorities, underscoring the central role of target-State agency in shaping outcomes (Binbin & Lee, 2026). The militarization of supply chains enhances the system’s responsiveness to unexpected disruptions, albeit at the cost of an expansive control bureaucracy. Within this framework, performance must be redefined as systemic persistence rather than conventional efficiency. In essence, the North Korean regime has engineered conditions for what might be termed “negative” supply—a *deliberate inversion of market logic* that cultivates stability within the ambiguous interface between visible and clandestine operations (Smith, 2015). Table 2 distills the principal governance mechanisms underpinning North Korea’s logistical apparatus, illustrating how control, resilience, and political domination are sustained within an intensely coercive milieu. Logistical infrastructures thus operate as constitutive instruments of authoritarian State formation, simultaneously materializing control and reproducing political order.

Table 2. Governance Mechanisms in North Korean Logistics

Dimension	Description	Implications for logistics and governance
<i>Information control</i>	Strict censorship of communication, limited Internet access and surveillance of population flows	<ul style="list-style-type: none"> • Reinforces secrecy of supply chains • Prevents leaks and external influence
<i>Resource allocation hierarchy</i>	<i>Songbun</i> system ranks citizens politically/socially, dictating differential access to goods	<ul style="list-style-type: none"> • Creates tiered distribution networks • Prioritizes elites and military over civilians
<i>Military-first doctrine (songun)</i>	Military receives preferential resource allocation and logistical priority	<ul style="list-style-type: none"> • Ensures military readiness • Diverts resources from civilian economy
<i>Dual market system</i>	Coexistence of official State-controlled channels and tolerated informal markets (<i>jangmadang</i>)	<ul style="list-style-type: none"> • Allows controlled economic flexibility • Mitigates shortages without losing control
<i>Geographic prioritization</i>	Strategic concentration of logistical corridors near Pyongyang, key ports, and China border	<ul style="list-style-type: none"> • Enables focused infrastructure investment • Marginalizes peripheral regions
<i>Crisis-driven infrastructure</i>	Maintenance of logistical infrastructure driven by political/military imperatives, not efficiency	<ul style="list-style-type: none"> • Maintains logistics for regime stability over economic growth • Prioritizes political-military control over operational efficiency
<i>Adaptation to sanctions</i>	Development of clandestine, alternative import/export routes and self-reliance mechanisms	<ul style="list-style-type: none"> • Demonstrates logistical innovation under constraint • Ensures resilience through opacity

Source: The author.

Railways in North Korea serve less as drivers of economic development and more as powerful symbols and instruments of State authority. Beyond mere transportation, the network’s stations, warehouses, and branch lines play integral roles in the regime’s territorial control and the strategic allocation of resources throughout the country. The system’s resilience depends largely on its ability to function effectively despite significant degradation and chronic underinvestment, where maintaining continuity—not speed or efficiency—remains the overriding priority. Bermudez (2017) highlights targeted maintenance efforts focused on key railway sections near politically sensitive sites, underscoring the regime’s prioritization of power consolidation over economic modernization. Simultaneously, Kim (2022) describes a paradoxical governance structure in which local authorities are tasked with managing everyday logistical needs and immediate resource distribution, while the central government retains strict control over critical flows essential to regime stability. This dual arrangement transforms what might be perceived as structural weaknesses into deliberate political advantages, fostering a pervasive culture of opacity and controlled scarcity. Within this framework, logistics transcends its functional role, becoming a performative act that sustains and projects the enduring resilience and authoritarian strength of one of the world’s most repressive regimes.

North Korean logistics goes far beyond the simple circulation of goods; it operates as a meticulously crafted political drama where every flow and checkpoint contributes to the enactment of State power. The spatial and temporal organization of logistics networks is deliberately designed to shape a tightly controlled dictatorial reality, where visibility and opacity are carefully calibrated to serve the regime’s strategic interests. Larkin (2013)

compellingly argues that infrastructures should be viewed as “authority devices” that materialize and reinforce power relations across geographic space. Similarly, Cowen (2014) emphasizes the performative nature of supply chains, which transcend their technical functions to become coercive instruments of governance. In the North Korean context, the deliberate fragmentation between military and civilian supply chains and the rigid compartmentalization of networks play a critical strategic role by enforcing stringent control over both internal and external mobility. At the same time, these mechanisms stage a “theater” where control, concealment, and order prevail. This highly choreographed logistical system reveals a key singularity: the supply chain serves simultaneously as a symbolic lever of authority and a political language, expressed through the orchestrated management of visible and invisible flows that sustain regime power.

The North Korean logistics model—rooted in deliberate slowness and strict compartmentalization—fundamentally challenges the traditional paradigms of supply chain management, which emphasize cost efficiency, service quality, and responsiveness (see Alkayid [2025] for a recent literature review). In a global landscape increasingly shaped by energy crises, climate volatility, and geopolitical upheaval, this “*logistics of slowness*”—a notion conceptualized nearly two decades ago by Paché (2007)—provides a provocative lens for rethinking strategies not around speed, but around continuity, sovereignty, and political control of flows (Mangan & Lalwani, 2020). By deconstructing the Western fixation on instantaneous circulation, the North Korean experience invites exploration of hybrid models in which structural constraints and systemic vulnerabilities serve not as liabilities, but as foundations for resilience and adaptive governance (Sheffi, 2017). The inherent political nature of supply chain infrastructures is further underscored by Silvast & Virtanen (2024), who demonstrate how these logistical assemblages operate as instruments of power—interweaving aesthetic, material, and social dimensions. Far from representing a dysfunctional anomaly, North Korean logistics exemplifies a distinctive form of performance, deeply embedded within an authoritarian statecraft and shaped by conditions of chronic disruption. This case compels the field of logistics to expand its analytical scope and reconsider the assumptions underpinning its dominant models.

Box 4. Main Findings

The analysis of North Korean supply chains under authoritarian rule reveals a configuration in which logistics functions as a core instrument of political ordering rather than a neutral system of economic coordination. Three main findings can be derived. First, logistical performance is redefined as systemic persistence under constraint. Rather than optimizing speed, cost, or transparency, the system prioritizes continuity of critical flows through redundancy, opacity, and institutionalized inefficiency. This reframing suggests that resilience is not an emergent property but a deliberately engineered outcome embedded in governance structures. Second, the coexistence of formal State channels and informal or clandestine networks constitutes a hybrid architecture of circulation. Far from signaling institutional weakness, this duality enhances regime adaptability by allowing controlled flexibility at the margins while preserving centralized authority over strategic flows. Informality, in this context, operates as a regulated extension of State power rather than its negation. Third, logistical facilities and practices actively produce and stabilize authoritarian power relations. Through spatial prioritization, information control, and differentiated access to resources, supply chains become mechanisms for structuring territory, managing populations, and reinforcing political hierarchies. Logistics thus operates simultaneously as a material system and a performative apparatus of governance.

Discussion and Conclusion

This research note confirms that the question posed in the introduction—whether a country as closed and isolated as North Korea has developed distinctive logistical practices, and how these should be characterized—requires a nuanced analytical response that departs from conventional evaluative frameworks. North Korea does not perform poorly in absolute terms; rather, its logistical system is organized around distinct political imperatives centered on regime survival, control of critical supply flows, and authoritarian governance. Within this configuration, supply chain performance becomes inseparable from sovereignty preservation in contexts where efficiency and transparency are neither primary objectives nor structurally attainable. The heterodox framework developed in this article therefore extends the concept of logistical performance toward hybrid configurations marked by opacity, centralization, and selective connectivity, while still ensuring functional continuity across strategically sensitive flows, particularly in the military domain. The analytical reframing nonetheless requires normative caution, as such operational continuity is embedded within a political system characterized by coercion, ideological control, and systematically documented human rights violations, which shape both internal organization and external engagement patterns.

However, any interpretation of North Korean logistics must be situated within significant epistemic constraints that fundamentally shape what can be known with confidence. Data scarcity, institutional opacity, and State-controlled information flows limit direct empirical access and necessitate reliance on indirect indicators, secondary sources, and remote sensing techniques. The material mobilized in this study—drawn from academic literature, satellite imagery, trade reconstructions, and institutional reporting—inevitably offers a partial and mediated representation of logistical realities. Rather than being peripheral, this uncertainty is constitutive of the object itself, as logistical systems in highly closed regimes are intentionally structured around concealment, compartmentalization, and selective visibility. Consequently, analytical claims remain probabilistic rather than strictly verifiable, grounded in triangulation across heterogeneous sources. Recognizing these constraints does not diminish the validity of the analysis; instead, it clarifies the epistemological conditions under which knowledge about authoritarian supply chains is produced and highlights the necessity of methodological pluralism combining remote sensing, inference-based reasoning, and comparative analysis across structurally similar contexts.

Building on such epistemic and conceptual foundations, the implications for supply chain management extend beyond the specific case of North Korea. In increasingly unstable global environments, the assumption that agility, transparency, and frictionless circulation constitute universal benchmarks of performance becomes less self-evident. The North Korean case illustrates instead that logistical endurance can be achieved through alternative configurations grounded in strict planning, controlled opacity, and hierarchical prioritization of flows. These mechanisms suggest that resilience may depend less on real-time optimization than on the institutional capacity to stabilize essential supply chains under prolonged constraint. Consequently, operational models must integrate dimensions that remain underemphasized in dominant frameworks, including political authority, territorial fragmentation, and culturally embedded governance logics. More broadly, this case underscores that robustness emerges not only from technological sophistication or adaptive responsiveness but also from the deliberate structuring of constraints that ensure systemic continuity under stress. Seen in this light, apparently paradoxical strategies—such as reduced circulation speed or elevated inventory buffers—may acquire strategic relevance in specific high-volatility environments.

Against this backdrop, several avenues for future research emerge at both theoretical and empirical levels. First, theoretically, this study calls for a systematic rethinking of core logistical categories such as performance, optimization, and resilience through comparative frameworks that incorporate non-liberal regimes, conflict-affected territories, and structurally constrained economies. Such an approach would contribute to a post-normative logistics agenda capable of capturing heterogeneous operational rationalities beyond dominant market-based assumptions. Second, empirically, further work could investigate the concrete mechanisms governing flow circulation in closed or semi-closed systems using multi-source datasets combining satellite imagery, open-source intelligence, and humanitarian documentation. Third, a complementary line of inquiry concerns the role of informal, clandestine, and transnational logistical systems—including smuggling networks, diasporic channels, and forms of covert economic coordination—that operate alongside or beneath formal State structures. Finally, a fourth research avenue lies in interdisciplinary engagement with geopolitics, critical security studies, and infrastructure sociology, in order to better situate logistical systems within broader configurations of power and territorial governance. Ultimately, the North Korean case should not be treated as an exceptional curiosity but as an analytically generative site for developing a more pluralistic and reflexive understanding of logistics under conditions of constraint.

Acknowledgments

The author warmly thanks the anonymous reviewers of *Developing Country Studies* for their insightful and constructive comments, which greatly helped to clarify the arguments and improve the initial draft of the manuscript.

Disclosure Statement

No potential conflict of interest was reported by the author.

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