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Resilient warehouse supply chains in post-conflict economies: Evidence on prepositioning, multi-echelon inventory, and lateral transshipment

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Abstract: *Purpose*. This paper synthesizes empirical evidence on how to strengthen warehouse-centred supply chains in post-conflict economies facing damaged infrastructure, intermittent access, and volatile demand. *Methodology*. A systematic review of 15 protocol-verified empirical and simulation studies is conducted, coding contexts, warehouse interventions, and outcomes such as response time, service level/OTIF, inventory stability, delivery days, and unit logistics costs, with limited random-effects aggregation when comparable metrics are available. *Results*. Robust effects are identified for warehouse prepositioning, temporary or modular depots, lateral transshipment policies, and multi-echelon inventory control, which collectively reduce response times, increase service levels, and stabilise supply with moderate cost impacts. Digital enablers such as offline-capable warehouse management systems and energy-autonomous facilities further enhance performance under grid and connectivity failures, though quantitative evidence remains sparse. *Theoretical contribution*. The review integrates the four-R flexibility perspective with the resilience capacities of absorption, adaptation, and recovery, showing how specific warehouse design and control levers operationalise resilience in the recovery phase of humanitarian and essential goods supply chains. *Practical implications*. The paper proposes a phased implementation roadmap for practitioners in post-conflict settings, distinguishing quick wins in the first 0–3 months, network reconfiguration over 3–12 months, and longer-term investments beyond 12 months to embed digital and energy autonomy in warehouse networks.

Keywords: warehouse resilience, post-conflict supply chains, prepositioning of warehouses, multi-echelon inventory management, lateral transshipment policies, humanitarian logistics, supply chain recovery

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Sustainable Development Goals (SDGs): SDG 2: Zero Hunger; **SDG 3:** Good Health and Well-Being; **SDG 8:** Decent Work and Economic Growth; **SDG 9:** Industry, Innovation and Infrastructure; **SDG 11:** Sustainable Cities and Communities; **SDG 12:** Responsible Consumption and Production; **SDG 16:** Peace, Justice and Strong Institutions

1. Introduction

Economic recovery after the conflict requires rebuilding supply chains across transport corridors that the conflict has endangered, as well as addressing damaged infrastructure, administrative obstacles, and other challenges. Within this environment, the function is used only outside the repository; this serves as an important anchor for reaction capacity, the mechanism to re-regulate the buffer and fragmented network against uncertainty. While the location of the human logistics research device, the inventory control, and the network design for acute disasters are unique, the recovery phase imposes unique restrictions. The original scholarship was determined by proximity, excess, and time-for-time (Balcik & Beamon, 2008; Rawls & Turnquist, 2010). Later, the location of the warehouses and the study of sophisticated factors for the initial location of more achievements (Corner et al., 2013; 2015; 2018), while the integrated model jointly combined the children of A-Autoller-year to expand the coverage of the Ghanaian infrastructure with temporary depots. New work focuses on decisions under uncertainty, lateral translation, and the vulnerability of the path, which is more estimated than the reality of stabilization (Baisakaya et al., 2017; Abajari et al., 2021; Anwari et al., 2023; Korruuk et al., 2024). However, reserve synthesis focused on the recovery store is limited, with limited evidence, non-standardized matrices, and often successors. Physicians not only require optimal space in the hub, but also have an agreement to translate the initial nodes into the correct configuration, temporary songs, inventions, speeds, and controls with many eracellons. Comparing digital and energy uncertainties makes the scenario more complex, yet it involves initiatives such as offline-capable warehouse management systems and energy-autonomous locations that maintain operations during grid failure. This article consolidates verified conclusions from 15 empirical studies and interprets them through the lens of resistance, integrating absorption, adaptation, and restoration. Contexts, interventions, and results are coded to distill the effects of response time, service level, OTIF, storage, delivery days, and unit costs. The aim is to identify permanently effective interventions in conflict settings, explain their unforeseen events, and develop a phase implementation framework. Analysis and newer work on uncertainty examine how contextual factors, such as intermittent access results, shape outcomes. Thus, it addresses three questions: which interventions shorten response time, how availability affects efficiency, what resistance costs are acceptable, and whether digital or energy activators affect this compromise. This synthesis provides managerial knowledge and explains the contributions of preliminary locations, temporary songs, multi-shelving inventories, and lateral translation, offering a realistic time frame for recovery and a warehouse-based plan for durable reconstruction.

2. Literature review

Research on warehouse-centered flexibility in disrupted areas is well established in human logistics and now directly informs the recovery scheme for post-conflict economies. The normal thread is straightforward, but often underutilization is seen: warehouses are not inactive storage points; they are control points that manage time-to-service, access equity, and, when transport links are unreliable, shape the strength and demand noise. The initial contribution hired the convenience between coverage and cost as a balance under uncertainty, recognizing obstacles of fairness and risk; This framing still anchors today's decisions because it suggests that where "where" decides "how fast" and "for whom" in the first place (Balcik & Beamon, 2008). A second section determined the value of the pre-state and, in detail, the role of the front warehouses during prolonged recovery. Using a stochastic formulation and landscape analysis, research showed that the pre-element placement reaction cuts rapidly over time and reduces service levels despite irregular access, with a cost premium that should be clarified for funders and officials (Rolls and Tourns, 2010). Tantra is intuitive-the distance of the first mile and low

dependence on delicate corridors-but manager of nuances: stock rotation, shelf-life, and replenishment rules turn theoretical benefits into operational reality. Construction, empirical, and decision analysis of that argument examined whether the warehouse place really runs the options, given that planners faced fragmented governance and security concerns. Multi-criteria framework and expert-informed scoring, including classical distance and cost measures (ROH, Jung & Han, 2013), as well as frequent access, site safety, and administrative friction. These determinants are not definite inputs into the economies after the conflict, but live obstacles; permissions shift, outposts appear, and the road surface changes to week. As a result, location analysis should blend complex data with relevant decisions rather than chase spurious accuracy. A separate branch study tiers the network, with the regional hub and local depots strengthening each other. A quantitative assessment indicates that if the backhall, rotation, and governance (ROH; Petit, Harris & Burceford, 2015) layering of warehouse service levels and many ecosystems increases credibility. Flow with regional nodes buffer cross-interfaces and address administrative instability at borders; Local depots inject accountability close to demand and can be turned on or off as access improves. The point is either not, or complement: flexibility comes from orchestration. Temporary depots expand the argument that they act as movable frontline buffers. Working on small characteristics of seating and operations suggests that they can bridge the broken corridors and support phased reunion when permanent warehousing is not yet possible (Khayal, Princhanang, Pokhara & Muttu, 2015). A benefit for recovery planners is the option value: pop-up or modular warehouses allow an initial presence near demand with a lower capital outlay. Catch is integration - temporary characteristics only combine flexibility if they sit inside a ruled network with clear rotation rules, lateral triggers, and demobilization criteria. The convenience model was rebuilt to internal the goals of parallel advance flexibility in adaptation. Instead of solving the cost and bolt alone at the latter stage, recent efforts focus on coverage, risk, and equity, and on distributed solutions that can be tuned in reference (Banmy, Arimura & Asda, 2017). This matters after the conflict, as the political economy of reconstruction seems appropriate: the alleged bias in service coverage can destroy the Trust and Stall access. Models that encode minimal coverage thresholds, with “cheap”, “acceptable and defensive” interact with the priority groups. Once the stock is in place, the speed between the nodes becomes the main lever. Research on lateral transpiration introduces controlled cross-facility flows to reduce local deficiencies and rebuild inventory when routes are unexpectedly closed. Evidence indicates that permission to allow lateral moves between nearby depots increases service levels when managed transport punishment is used, especially under spatial interference (Baxkaya, Ertem & Duran, 2017). After the conflict, the networks actually experience those correlations: bridges reopen as corridors, reduce demand between corridors, and form clusters of security events. Lateral rules convert static stock into a dynamic buffer, but require vague triggers and simple execution, so operators are not paralyzed by case-by-case approval.

Integration in location, inventory, and routing closes the loop between elegant seating and operational feasibility. Multi-lingual models that connect security stocks to network layouts and vehicle processes produce more stable days’ supply to the band while maintaining donor and board costs (Tawan, Abtahi, de Caprio, Hashmi & Yosefi-Zenauz, 2018). An integrated perspective is important in recovery, as bottlenecks sit at junctions: local depots can be kept full, yet truck queues at a checkpoint; curfew cuts producers’ productive hours; or failures in the energy budget generator of the cold chain. Integrated design converts that friction into a plan, rather than treating it as a pre- or post-explanation for underperformance. A vigilant strand embedded the possibility that pre-fasting warehouses or their access link to subsequent risk. Models that treat facility failure as endogenous show why excesses cannot be done: some “secure” facilities can backfire by supplying locations if they share exposure to cascading hazards (Galindo & Batta, 2013). Recovery is filled with Cascade - Bridge Specters that redirect heavy vehicles on weak roads, administrative changes that apply to transit, or rolling the flow. Structural testing of node failure and route damage reveals more genuine trade-offs between costs and coverage. Although most of the above is based on adaptation and simulation, the area has also moved towards the competition or explicit modeling of fine infrastructure. By diverting demand for road vulnerabilities and prioritizing preliminary state with side development, it has recently been determined how to protect services in important areas during daily fluctuations (Anveri, Naisih & Alinaghian, 2023). This restoration refreshes flexibility as a portfolio option for planners: Select a mix of nodes, stock levels, and side rules that maximize coverage of weak districts, which are subject to budget constraints and rise and fall throughout the journey. Furthermore, yes, priorities do not accept

the same service punishment in medical goods, cold chain items, and input cases of reconstruction; Portfolio framing explains this.

The literature also addresses a practical topic, repeatedly emphasizing that models advance when combined with an implementable regime. Studies of citing and preliminary proceedings often focus on pure data and integrated purposes, but reality is multi-actor and noisy after conflict. Records, belief in the version, and planned reviews are not only "good"; These are mechanisms that are valid for design development. Together, the evidence we attract informs several consequences about the flexible regeneration of the first route. It is assumed, but only if the rotation policies are realistic and the (Rolls & Turnalist, 2010; Galindo & Batta, 2013) is accepted. Couples with local depots provide regional hubs with a controlling mix of tier design speed and access, where rules and access are unstable (ROH, Pettit, Harris & Bersford, 2015). Temporary depots provide option value and accelerate early coverage, provided that they are integrated with permanent nodes and when there is no need (Khayal, Pradhan, Pokhare & Muttu, 2015). The lateral transmission inventory serves as an effective buffer during coordinated shaking (Baisakaya, Ertam & Duran, 2017). The integrated location-inventory-routing design stabilizes supply over time and is prudent for stakeholders (Tawana, Abtahi, Di Caprio, Hashmi, & Yusafi-Zenauz, 2018).

Meanwhile, the scope of modeling, the fundamental insight into business and fairness, and the "Why" behind "Why" (Balik & Beemon, 2008) guide the pre-situation, and there is a practical spine to many recoveries (Roh, Petit, Harris & Beresford, 2015). Essentially, some gaps induce current synthesis. Most of the evidence depends on simulation or small-area assessment; Reported effects vary with measurement options; Dispersal metrics are inconsistently published, limiting formal aggregation; And enabling layers competent warehouse systems, simple telemetry for route conditions, or basic energy autonomy for cold-chain nodes are ever modeling, even if they are in the success of the core warehouse strategies. He said, "convergence beyond methods is notable: most tracts that increase flexibility, tired pre-management, temporary depots, lateral rules, and integrated inventory-killing, adapted to day accessibility map. In short, literature provides a strong yet realistic foundation for a warehouse-first recovery agenda, treating warehouses as active sources of flexibility rather than merely as scenes.

3. Methods

This study uses a systematic evidence synthesis design to support warehouse-centered interventions in disrupted settings. No primary participants were admitted; instead, there are "units" of colleagues-reviewed studies that report quantitative results for lateral transmission in warehouse locations, pre-state, temporary or modular depots, multi-eclone inventory, and disaster or post-conference references. The material includes full texts, a complementary appendix where available, and a structured extraction template with a predetermined codebook. We discovered the central text list database and leading logistics magazines for the work of English-language from 2008-2025, examining the title/essence, and then read full texts with inclusive criteria, which is compulsory (i) a clear warehouse component, (ii) at least one comprehensive result- one comparable result-service time, service level, and stockbelituality, and stockbeliticity.

Table R1: Corpus characteristics and intervention mapping (k=15)

Dimension	Category	Studies (n)
Design type	Optimisation/Simulation	11
Design type	Field/Quasi-field/Mixed	4
Intervention	Prepositioning	12
Intervention	Temporary/Modular depots	5
Intervention	Lateral transshipment	4
Intervention	Multi-echelon inventory	3
Intervention	Integrated L–I–R models	3
Enablers	Offline WMS / Energy autonomy (explicit)	2
Outcome reported	Response time/time-to-serve	11
Outcome reported	Service level/OTIF	9
Outcome reported	Stockout probability/backorders	6
Outcome reported	Days-of-supply stability	4
Outcome reported	Cost per delivered unit / total logistics cost	8

Damaged or uncertain. Purely conceptual papers were excluded for lack of quantitative indicators and for duplicates. Two critics screened and coded independently; disagreements were resolved through discussion, and inter-rater agreement was monitored. The extraction captured the intervention type and granularity (regional hub vs. local depot), network topology, demand characteristics, road/access vulnerability, algorithm approach (e.g., stochastic programming, heuristic routing), and report effects. To keep results comparable, we generally replaced baseline effects where possible; when the authors reported improvements in time or service, we used log response ratios for meta-analytic compatibility, while keeping perceptions in mind. We reflected the standard matrix used in impressive tasks to make the aggregation worthwhile, for example, with reaction-time and service-tier treatment rolls and turns (2010), for east-position, with Roh, Petit, Harris, and Beresford (2015), with ecolon structure, and accompanying the road along with participation structure, parish-paron structure, and parishes. A flow of similar prisms governed the processes: identification, screening, eligibility, and integration, with reasons recorded at every stage.

Table R2: Vote-count synthesis by outcome

Outcome	k	Improved (+)	Mixed	No change	Notes
Response time	11	10	1	0	Reductions under at least one intervention
Service level/OTIF	9	8	0	1	One study showed no statistically detectable change
Stockout probability	6	4	1	1	-
Days-of-supply stability	4	3	0	1	Variability was reduced in 3 studies
Cost	8	1 (↓)	2 (≈)	5 (↑)	One decrease under integrated routing; 5 net increases

Quality assessment was made using a customized checklist that assesses data realism, model transparency, and implementation; studies of simulation and adaptation were not penalized, but the conditions of the area, sensitivity reporting, and the clarity of the rules were evaluated. We synthesized conclusions and where three or more studies are reported to estimate the approximate random effects of approximate random effects by inverse weight; The Asymmetries were Connivated with and Subgroup Partitions (High versus low road vulnerability; Lower and Medium-ion vs. Mixed Settings; Asymmeters and Agar-Type Tests When Cell Size Was Allowed; The study of weighted processes and deviations that were at the end and indicated that we have made and marked on a conservative non-compliance.

4. Results

15 eligible studies (published 2008-2024) were identified during the search and screening process. Of these, 11 used adaptation or simulation design and 4 reported areas, semi-field, or mixed empirical evidence. Mapped for six categories: Godowns (12 studies), temporary or modular depots (5), lateral transmission (4), multi-eklon inventory policies (3), integrated location-inventory-killing models (3), and disastrous time-to-time already to notice riders. (11 studies), service level/OTIF (9), stockout probability or back order (6), day-supply or inventory stability (4), and cost of units or total logistics costs (8) per delivery. Data perfection varied; of the 15 studies, 6 had available metrics (SE/SD or CI).

Table R3: Random-effects pooled summaries (where commensurate)

Comparison	Outcome	Pooled effect (relative)	k	Heterogeneity (I^2)	Notes
Prepositioning vs baseline	Response time	−0.10 to −0.20 of baseline lead time	≈5	≈55–65%	Includes Rawls & Turnquist 2010; Roh et al. 2015; Roh et al. 2018
Prepositioning vs baseline	Service level	+ single-digit percentage points	≈5	Moderate	Compatible comparisons only

The vote-account synthesis indicated directly coherent reforms to the response time and service level. Of the 11 studies on response time reporting, 10 cut under at least one warehouse-centered intervention and reported mixed conclusions in 1 scenario. Of the 9 studies on service-level/OTIF reporting, 8 reported statistically significant changes, while 1 did not. For stockout probability (K = 6), 4 studies reported decreases, 1 reported mixed results, and 1 was not important. For cost (K = 8), 5 studies showed that net growth is bound by additional capacity or by excess capacity, 2 showed neutral effects, and 1 showed a decrease under integrated routing. Among studies with day supply available (K = 4), 3 reported reduced variability, and 1 reported inadequate changes to classify.

Random-effects aggregation was performed only when five or more studies reported a low-baked percentage change or a convertible log reaction ratio. For pre-state effects on the response time, the pool central trend indicated a decrease in the order of one to two tenth base lead time (range approximately 0.10–0.20), with moderate disparity (in mid-60s in mid-60s). Studies contributing to this pool included Rolls and Tournquist (2010), ROH, Petit, Harris, and Bersford (2015), and ROH, Shin, and SEO (2018), with two later studies and two later matrices. For service levels, a random-effect summary in a compatible comparison indicated positive changes in the single-point limit; Asymmetry was again medium. The funnel-plot inequality tests were the cell-shaped indecisives below the traditional threshold.

Used subgroup analysis pre-specified intermediaries. In characteristic settings, such as high road vulnerability (4 studies with clear indices or proxy indicators), the average reaction-time improvement under pre-state was smaller than in low-vulnability settings; in between, the variance increased and the confidence interval widened. In lower and medium-or-ore geography vs. mixed settings with widespread eastward spread, central trends in service-level changes were overlaps. Where competent layers were clearly present (offline WMS and/or generator/solar autonomy; 2 Studies), measures of time-to-service cuts and stock availability fell to each distribution-friendly end; Inadequate N prevents different pooling.

The results of the temporary or modular depot (K = 5) were summarized as pre-post or landscape contradictions: four studies reported a low time to service in the initial recovery stages relative to the network without the temporary depot; When the options to complete the access obstacles dominate, they reported a neutral effect. The location of the temporary depot for accessibility measures (eg, Lynn, Batta, Rogerson, Blatt & Flainigan, 2012) reported cuts in larger times than such calibration. Lateral transpiration (K = 4) was associated with low stockout probability and mixed effects in three studies; all four increased transportation charges, with magnitudes not comparable across designs. Multi-ocolon inventory policies (K = 3) cut the supply of days in two studies and cut neutral results in one.

An integrated location-inventory-routing model (K = 3) reported more stable days' supply and, in two cases, a cost of neutrality relative to a purely location-operated baseline; Heterogeneity and Divorqueness Denominators limited formal pooling (see Tawna, Abtahi, Di Caprio, Hashemy, and Yusafi-Zenauz, 2018). The study includes the apparent destruction or failure of the pre-Tainat nodes (e.g., Galindo and Batta, 2013) and the documentation of the broader performance band in the landscape output, which was recorded as a range rather than a pool. Sensitivity and holiday-one-out diagnostics did not alter directional conclusions in the pool summaries; however, the missing dispersion data in most studies remained a binding obstacle.

5. Discussion

Results point to a clear pattern: the warehouse-centered periodically shorten the service and stabilize the availability in the recovery stages, but they do so through various channels and with different cost structures. Prepositioning continuously reduced time and increased service levels. It aligns with classic insights that distance and exposure drive reaction performance, yet our synthesis still shows the effect when corridors are narrow or stop abruptly. It is compatible with multi-level designs that have been reported as a hedge at the time of treatment of the discovery roll and further shares of the turnquist, and reported by ROH, Petit, Harris, and Beresford, where regional hubs and local depots strengthen each other rather than compete. In short, it holds the old message, but in post-stone situations, it matters more because instability pays proximity every day, not only in rare peaks.

Temporary and modular depots were used in most studies, taking advantage of the early stage. It is not surprising; they act like movable buffers. What is new is the sensitivity to sit on quality: when the temporary depots were located with clear access to the metrics, the lack of time was significant when the ad-hoc heuristics were used, resulting in Lynn, Batta, Rogerson, Blatt, and Flon. The lateral transshipment reduced the risk of stockouts at the cost of additional transport work that doctors actually had to handle. The numbers are modest, but they are consistent: allow controlled cross-flow and let local deficiencies fade more quickly. In networks where road failures are localized, the mechanism seems particularly valuable, as it recently pre-PRERECDs models that embed the demand for road vulgarity and priority. Multi-Acolon inventory policies reduced supply-day variance in most comparable cases. This is less important than the theoretical proximity as a practical stabilizer for field teams: the warehouse's smooth profile reduces firefighting and the need for frequent emergency supplementation. Integrated position -ement -formulation - formulation - the stable supply with cost neutrality in two of the two studies was reported; while the proposals differ, the direction supports the managerial claim: prevent hidden storage with routes. In connection with the permission of layers, some studies clearly mention offline storage systems or energy autonomy, showing better performance in terms of time and availability. Funging cannot be caused here, but moderation is thought out: Digital delicacy and energy uncertainty otherwise dilute the advantages of sound warehouses. Many follow the consequences. First, the advantages of flexibility are derived from bundles, not isolated strategies: Forward nodes Plus provides a formula of temporary compositions supported by simple side rules, a model of fast services, and low warehouses. Secondly, it should be the subject of justice and lack of coverage; in this way, politically sensitive goals are reduced to cutting proposals, as argued by early reviews such as Balcon and Beamon. Third, the administration is a demonstration driver. The results were placed in a clean trigger for lateral tricks, a rotation policy for pre-born supplies, and demobilization criteria for temporary compositions; where the procedures were unclear, the benefits decreased. The boundaries were angry with these claims. The corpus combines simulation with evidence for Little Namun; the dispersion data often disappear, limiting meta-lingua accuracy, and assessing the publication's deformity is difficult. The definition of boycott differs (cost vs. OTIF; cost of disguise on the leaf sheet), so some conversions depend on conservative beliefs. The arrears are also uncertain: several proposals have been tailored to specific geographical or commodity mixtures. Finally, the competent layers decreased; the digital and energy states depend on it, but the evidence is thin. For politics and practice, the route is practical. To set the baseline, use the tier pre-ate to re-perform temporary songs, allow side transmission according to simple sound rules, and, from the beginning, tie the inventory for routing. If possible, strict places with offline-current WMS and basic energy autonomy. Two research priorities are established: permission to impact on the association, which enables standardized size and growth reports, and a more calibrated area assessment that clearly captures access and management dynamics. This is a place where it can be converted into a repetitive book for recovery from promising models to strengthen future work.

6. Conclusion

This review shows a consistent formula in odd settings: interventions focused on warehouses-POs after availability improves the availability of time, although each liver works through a separate operating channel and cost. Forwarding anchor: This tightly compresses response time and improves service level. Temporary or modular warehouses accelerate initial re-entry when permanent facilities

are not yet viable, while lateral transmission reduces local shortages when access is limited. The inventory policy with more ecolone reduces the daily offer and reduces fire struggles, and integrated design with integrated pattern-dentors systematically stabilizes the flow without inflating costs. Enable layers to increase these effects in PWM and basic energy autonomy. Simply put, flexibility is based on volumes, not only repair.

Management evidence supports the path of practical adoption. Using a regional hub to absorb volatility, combine it with local compositions for proximity, and allow simple, audible side movements between nearby places. Continue the temporary depot at an alternative price during the first renewal window, subject to apparent mobility rules. Connect the objectives to obstacles from the beginning, not later. Apparently, coded coverage and justice; in this way, politically sensitive goals are transformed into transparent design parameters rather than publishing a compromise after Hawk. The management of public affairs depends more on geometry: triggering rules for lateral transmission, rotation policy for transfer stocks, and minimal data within the favorable limits observed in standard literature.

The boundaries affect the power of these claims. The body combines simulation with small or radii; metrics often disappear, which limits metaback-inflammatory accuracy and introduces distortion in detection from small studies. The definitions of the outcomes are different and force the level of service, OTIF, and the cost of conservative conversions between the disuner. External validity is uneven: Many studies are designed for specific geographical areas, commodity classes, or safety arrangements. Finally, the digital and energy conditions - although operational - are at best rarely clearly modeled.

Future research should prioritize standardized impact size and variability to enable a preliminary logistics evaluation protocol and a cumulative synthesis. Experiments with calibrated fields and semi-illusions require measuring the dynamics of access, the prohibition on walking, and checkpoint friction in the middle warehouse. The study should allow layers to allow co-blue. WMS, telemetry, and power autonomy-tak are determined by the volume rather than their moderating effects. The portfolio analysis captures the price of “flexibility costs” in goods (e.g., medical goods in the cold chain vs. reconstruction inputs) to help decision-makers choose viable packages given budget constraints. Finally, the force for the node and the corridor’s failure should be tested as a primary objective, with simple operating triggers that doctors can actually run. Together, these steps move the area toward a network of flexible warehouses in subsequent recipes for compositions of repetitive, audited, promising designs.

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Conflicts of interest

The authors declare no conflict of interest.

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