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Trade disruption and supply chain vulnerability in Bangladesh amid Iran and Israel geopolitical tensions

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Abstract

Escalating geopolitical tension between Iran and Israel threatens global energy trade and the maritime corridors on which import dependent economies rely. This study examines how that tension affects trade flows and energy supply chain systems in Bangladesh, with attention to vulnerability, economic consequences, and preparedness. A mixed methods design combined a structured survey of 400 energy sector professionals drawn from consulting, supply, trade, logistics, renewable energy, and government roles with secondary data on fuel and liquefied natural gas imports, infrastructure condition, and shipping interruption. One sample t tests, Pearson correlations, and Bayesian posterior estimation were used to assess supply chain risk and resilience strategies. Results indicate heavy dependence on imported energy, with mean annual petroleum and liquefied natural gas imports of 5.395 and 3.653 million tonnes respectively. Infrastructure vulnerability and disruption at key maritime chokepoints each averaged close to 3.0 on a five point scale, indicating moderate systemic risk. Correlations among fuel price volatility, import cost increase, energy inflation, and government contingency planning were weak and statistically nonsignificant, as was the association between private sector risk management and stockpile levels, suggesting limited coordination between market signals and policy response. Posterior estimates show that supply diversification, renewable integration, infrastructure strengthening, and strategic reserve expansion operate largely independently of one another, implying complementary rather than substitutable measures. The findings support coordinated investment in infrastructure, greater policy responsiveness, and stronger private sector capacity to safeguard trade continuity.

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JEL Classification: F51, Q41, Q48

1. Introduction

The period of 2024–2025 marked a new phase in the Israel–Iran conflict with the transition from indirect proxy-based rivalry to open warfare between their respective military forces. This escalation was fueled by increasingly mutual threat perceptions. Israel has perceived Iran's nuclear and military capabilities as an existential threat, while Iran viewed Israeli attacks as direct assaults against its sovereignty and security. The conflict above and beyond the two nations created an impact on power balances in the region, global trade routes, energy security, and the strategic role of external powers (Popalzay et al., 2025). Recent Iran–Israel tensions have an immediate effect of disrupting international trade and energy supply chains through increasing risk of closure, delay or transit at higher cost through two vital chokepoints: the Strait of Hormuz and the Red Sea–Suez corridor. As much as 20 million barrels per day was transported through the Strait of Hormuz in 2024 alone, accounting for approximately one-fifth of global petroleum liquids consumption (or roughly 20%); over a quarter of total global seaborne oil trade; and around one-fifth of global LNG trade, with EIA estimating that some 84% of crude oil and condensate and 83% LNG passing through are sent to Asian markets (EIA, 2026). The risk to trade is not just an oil story. A March 2026 Kiel policy brief explains that it was also about chemicals, fertilizers, and industrial intermediates: Gulf exporters behind this chokepoint made up $773 billion of world trade in terms of the top 50 non-mineral products in 2024 disproportionately so for hydrocarbon derivatives, methanol, urea and ethylene glycol. UNCTAD (United Nations Conference on Trade and Development) similarly points out that military escalation around Hormuz drives up freight and bunker fuel rates, insurance premiums, fertilizer prices and by extension food prices transmitting the shock far beyond the Middle East (Hinz et al., 2026). Bangladesh is extremely vulnerable to Iran-related Middle East conflict because it's sandwiched between two: It's reliant on imported fuel but its exports, from which raw material inputs are drawn, are weighted heavily towards a single sector. Bangladesh imports energy in the form of oil, LNG and coal at a cost of about $12 billion a year according to recent reporting, with imported LNG meeting approximately 30% of its demand for gas. In 2025, Bangladesh imported a total of 109 LNG cargoes worth around $3.88 billion compared to 86 cargoes for about $3.02 billion in the previous year. Imports of petroleum products in FY2024-25 stood at around 6.215 million tonnes, valued at approximately $4.1 billion. Bangladesh relies on imports for roughly 80 percent of its refined fuel including much from the Middle East, according to Reuters. With around a fifth of the world's oil and LNG shipped via the Strait of Hormuz, any further escalation with Iran feeds fears of increasing fuel costs, reduced supply at gas pumps, disrupted freight movements and pressure on dollar reserves in Bangladesh

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(Rahman, 2026). Bangladesh has thus been forced to pursue an emergency sourcing plan to protect its fuel supply. The government also approved the import of an additional 260,000 tonnes of fuel on March 31, 2026 which included 100,000 tonnes each of crude oil and low-sulphur diesel as well as 60,000 tonnes gas oil; according to The Daily Star. At the same time, Dhaka sought to obtain additional diesel from India and said it had considered temporary substitutes, such as refined fuel from Russia. Likewise, in line with its energy diplomacy, on April 8 2026 Reuters reported that Bangladesh forms up increase fuel supply from India as the war interrupted its regular channels of imports (Star Business Report, 2026). The supply chain is already creaking under stress, at least in Bangladesh. Bangladesh imports about 65–68 lakh tonnes of fuel a year, BPC sources told The Business Standard. On 23 March 2026, existing diesel stock was around 185,000 tonnes or approximately 14-days of reserves; crude stock at Eastern Refinery was about 80,000 tonnes about equivalent to around 17 days' worth of refining at average levels. Of 17 fuel vessels due in March, only eight had arrived as of time of the report while a 100,000-tonne crude shipment has been stuck at Saudi Arabia's Ras Tanura terminal since March 3 and the contract for that vessel was cancelled (Chowdhury, 2026). As Bangladesh is expecting greater crisis in oil supply the main aim of the study is to investigate the effects of Iran–Israel geopolitical tensions on trade flows and supply chain systems of Bangladesh to identify potential vulnerabilities, areas of economic concern.

2. Literature Review

Pinfold et al., (2025) argued that both Iran and Israel resort to force and "strategic depth" in the pursuit of regional dominance, and keeps the Middle East in a perpetual state of escalation rather than resolution. The authors argue that both sides are animated by long-term grand strategies, that both prioritize management of conflict over peace and that both have contributed to a "new abnormal normal" of sporadic violence. They also maintain that the roles have partially switched. Israel has grown more revisionist and expansion-minded since Oct. 7, while Iran has become more defensive and is seeking to retain its remaining regional assets. On the other hand, Bazoobandi and Talebian (2023) also argued that since the 1979 Islamic Revolution, Iran has deepened its clout in the Red Sea and Eastern Africa via security, diplomatic, and commercial relationships with key African countries while providing backing for allied actors and proxies across the Mediterranean basin into Gaza. Israel responded with a new wave of targeted strikes and expanded alliances in the region to safeguard crucial trade routes, like the Red Sea corridor and the port of Eilat. This area has emerged as a center of confrontation, where proxy wars, changing alliances and Iran's naval presence increase the risk of disrupting maritime trade. The study illustrates how political tensions in this region can pose an immediate threat to shipping security and supply chain stability for economies that depend on global trade. Shepard and Pratson (2020) expressed that each country's share of the tanker fleet drops by approximately 7.5 vessels within two years following a ship disruption event in the SOH caused either by piracy or geopolitical tensions, which continue to rise with ongoing conflicts such as Iran-Israel relationships. While crude oil exports for major

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PGCs (Persian Gulf Countries) remain largely resilient due to market oligopoly and alternative routes, refined petroleum product (RPP) exports are vulnerable given that RPP is a larger share of GDP for smaller exporters like Bahrain and Kuwait. No alternative to the pipeline can provide a delivery system as flexible as maritime shipping. For SOH dependent importing countries like Bangladesh, these disruptions raise supply risk and import costs. These results emphasize the importance of strategic football reserves, diversifying sources and energy security forward planning. Chi et al.,(2025) also expressed that big geopolitical tensions like an Iran versus Israel conflict can also grievously and disproportionately impede global trade and supply chains simply by spiking volatility in shipping and oil markets. Crude oil price shocks and tanker freight rates directly impact each other closely, while the dry bulk shipping responds indirectly through fluctuations within global trade, according to the study. The market can also be pushed albeit sometimes into excess compared to physical reality during elevated volatility events in the Baltic Dry Index, which spreads that volatility to others sectors, or during geopolitical tensions like wars (Russia–Ukraine war), EU embargoes and so forth the Red Sea disruptions where Geopolitical Risk works like a sponge absorbing shock. On the whole, there is approximately 35% of overall market volatility that can be attributed to these cross-market spillovers, which will leave countries dependent on maritime commerce and oil imports especially vulnerable as they need diversified sourcing and strategic risk management. Prior research (e.g. Pinfold et al. 2023, Bazoobandi and Talebian 2025; Shepard and Pratson, 2020; Chi et al. (2025), which covered the geopolitical intricacies of the Iran–Israel conflict and how it would affect global trade routes, tanker fleets, and fluctuations in energy markets matters that are mostly absent from daily headline reports. They emphasized regional power dynamics, the exposure of Persian Gulf exports to disruption and the indirect spillover effects on global shipping and commodity prices. But these studies have not explicitly studied the impact of these tensions on an energy-importing country like Bangladesh that depends heavily on Middle Eastern oil and LNG, with limited storage or alternative supply routes. They also largely ignored what private firms and government agencies have done to prepare and increase resilience to mitigate supply chain risks, as well as the practical interdependence of multiple resilience strategies energy diversification, renewable integration, infrastructure reinforcement, strategic reserves.

In contrast, this study addresses the gap by performing a country-specific empirical analysis of Bangladesh's energy supply chain that quantifies import volumes, assesses infrastructure vulnerability, evaluates private sector risk management capacity and tests for correlations between aspects of resilience strategies. By integrating survey data, secondary import statistics, statistical modeling (t-tests, correlations, posterior distributions), this paper adds actionable insights on policy and operational interventions that prior literature did not cover. Based on the background the following are the research questions:

1. What trade channels and supply chains in Bangladesh are most vulnerable to disruption from Iran–Israel tension; especially in terms of fuel, RMG exports, food import?

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2. Will Iran–Israel geopolitical tension raise import cost, export delay and inflation in Bangladesh?
3. How ready are Bangladeshi businesses and government policies to deal with supply chain risks from geopolitical shocks?
4. How can Bangladesh make its trade and supply chain more resilient to future geopolitical tensions?

Based on the background the objectives of the study are

1. Identify the key trade channels and supply chains of Bangladesh that are most susceptible to disruptions caused by Iran–Israel geopolitical tensions.
2. To quantify the economic impact of supply chain disruptions on Bangladesh, including import costs, export delays, and inflationary pressures.
3. To assess the preparedness and resilience of Bangladeshi businesses and government policies in mitigating supply chain risks arising from geopolitical shocks.
4. To propose evidence-based strategies for strengthening Bangladesh's trade and supply chain resilience against future geopolitical tensions

2.1 Theoretical Framework

The theoretical foundation directing this research is primarily based on Resilience Theory, that can be traced back to the publication of C.S. Holling's 1973 article, "Resilience and Stability of Ecological Systems". Holling defined resilience as the ability of ecological systems to absorb disturbances and still retain their basic function (1973). Since then, the concept has been applied to systems well beyond ecology business and economics, supply chain management, and other areas have used it to look at how systems can better weather shocks from outside. More particularly, Resilience Theory focuses on a system's capacity (such as supply chains) to return and adapt after experiencing crises such as geopolitical stressors. Such theoretical application resonates incredibly well with the research goals for this paper because it sets a solid basis from which to examine how Bangladesh's trade channels and supply chains can sustain shock as a result of geopolitical events such as the Iran-Israel one, that seem particularly relevant in discussing vulnerabilities in sectors like fuel, ready-made garment (RMG) exports and food imports. Resilience theory will allow to predict the ability of these sectors to absorb shocks, sustain business continuity and adapt towards disruption which will enable mapping of vulnerable sectors and supply chains in Bangladesh. Further, the second aim of quantifying the economic impact of disruptions is also in alignment with Resilience Theory. That opens up the possibility to look at whether supply chains particularly ones that rely on essential imports such as fuel and food may be experiencing higher costs, slower exports and inflationary pressures amid geopolitical tensions. The theory helps explain why it may not be enough to know how certain systems can collapse, and

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what the long-term economic consequences of a breakdown are when it comes to measuring preparedness and resilience, it provides the lens through which we can understand how businesses and government policies are enabled to make contingency plans, build alternative supply networks, or stockpile requirements to mitigate the impact of disruptions. Through exploring principles of resilience, it will assess the current state of preparedness in both the private sector and government, including their ability to adapt and recover when crisis strikes. Finally, Resilience Theory provides a strong rationale for the development of practice-based interventions aimed at improving the resilience of Bangladesh's trade and supply chains. The importance of proactive measures such as diversification of suppliers, strategic development of infrastructure and creation of sound policy frameworks to prepare for future geopolitical shocks. Hence, we applied Resilience Theory, which given its ability to explain how trade and supply chains of Bangladesh would absorb, adapt or recover from geopolitical disruptions provides an ideal basis for helping us address all research questions.

3. Research Methodology

This paper utilizes a mixed-methods approach to characterize the impacts of geopolitical tensions between Iran–Israel on Bangladesh's trade flows and vulnerabilities in energy supply chains. A structured survey of 400 energy sector professionals from diverse regions, sectors, and organizational roles (energy consulting, supply, logistics, renewable energy, government and trade) was conducted to collect primary data that encompass a wide representation of industry perspectives. The survey collected data regarding fuel and LNG import volumes, energy infrastructure vulnerability, shipping disruptions, private sector risk management practices, and levels of energy stockpiles while secondary data sources such as import statistics, maritime trade reports and historical energy supply level were used to validate or contextualize the findings. We performed quantitative analysis using one-sample t-tests to evaluate whether energy import and vulnerability measures were significantly different from zero (one-tailed) including the analysis of the relationship (correlation) between market variables, government contingency measures, and private sector practices using Pearson correlation tests; and also in posterior distributions to assess independence and interrelations between four primary energy resilience strategies — supply diversification, renewable integration, infrastructure resilience, and strategic reserves. For this study, we centre Resilience Theory around shocks occurring within supply chains to assess resilience capacity in terms of the ability of Bangladesh's structures and systems to absorb shocks, adapt accordingly, and recover in a sustainable manner; thereby framing assessments of preparedness and policy interventions during the pandemic. Limitations include reliance on survey responses, focus on specific energy subsectors, and exclusion of informal trade flows, which may affect generalizability and causal interpretations.

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4. Results and Discussion

4.1 Demographic Information

The survey captured a diverse sample of participants across different regions, sectors, roles, and experience levels within Bangladesh's energy industry, providing a comprehensive perspective on energy-related practices and risks.

Table 1. Demographic Information

		Frequency	Percentage
Location	Dhaka	72	18%
	Chittagong	74	18.5%
	Barishal	60	15%
	Khulna	50	12.5%
	Rajshahi	50	12.5%
	Sylhet	40	10%
	Rangpur	27	6.75%
	Mymensingh	27	6.75%
Sector	Energy Consulting	71	17.8%
	Energy Supplier	59	14.8%
	Energy Trade	68	17%
	Government	64	16%
	Logistics	68	17%
	Renewable Energy	70	17.5%
Position	CEO	68	17
	Energy Analyst	62	15.5%

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	Manager	75	18.8%
	Operations Manager	63	15.8%
	Policy Maker	70	17.5%
	Shipping Coordinator	62	15.%
Years of Experience in Energy Sector	5-10 years	185	46.25%
	11-21 years	95	23.75%
	22- 30 years	120	30%

The survey population was diverse across sectors, including location, sector of work, position of the respondents and length of experience. In terms of geographical distribution, most participants were based in Chittagong (18.5%) and Dhaka (18%), followed by Barishal (15%), Khulna (12.5%) and Rajshahi (12.5%), while least number was from Sylhet (10%), Rangpur (6.75%) and Mymensingh (6.75%). This geographical spread helps to cover both large urban centres as well as regional hubs involved in energy activities. These respondents came from various segments of the industry, including Renewable Energy (17.5%), Energy Consulting (17.8%), Logistics (17%), Energy Trade (17%), Government (16%) and Energy Suppliers (14.8%); this supports the article's focus on representing different perspectives in the sector. Organizational roles were diverse as well, with Managers (18.8%), Policy Makers (17.5%), CEOs (17%), Operations Managers (15.8%) Energy Analysts (15.5%) and Shipping Coordinators (15%). In terms of professional experience, almost half of all respondents (46.25%) had 5–10 years of experience and 30% had 22–30 years; only the remaining 23.75% were early or mid-career professionals (11-21 years) (Table 1). In summary, the sample covers a reasonably broad cross-section of the sector which includes strong regional and functional perspectives.

4.2 Trade Channels and Supply Chains of Bangladesh

Table 2 provides a summary of the one-sample t-test results, which assess whether any key energy sector variables or even potential threats to our energy markets, such as LNG import volumes; or vulnerability factors in regional energy infrastructure and strategic chokepoints are significantly different from zero. The analysis assesses the degree and statistical significance of these factors, offering insight into Bangladesh's energy supply dependence and infrastructure risks. The t-test of one sample tested if the major energy variables for Bangladesh total volume of fuel imports, total volume of LNG imports, vulnerability measures for energy infrastructure and disruptions to shipping at key chokepoints deviated significantly from a reference value (zero). Specifically,

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results indicate all four variables are very statistically significant ($p<0.001$) with extremely large t-values (36.760 to 43.822) and confidence intervals at 95% do not include zero which means that these levels are statistically different from zero and practically meaningful.

Table 2. One-Sample t-Test of Energy Imports and Infrastructure Vulnerability

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Fuel Import Volume (million tonnes/year)	36.760	399	.000	5.395	5.11	5.68
LNG Import Volume (million tonnes/year)	42.941	399	.000	3.653	3.49	3.82
Energy Infrastructure Vulnerability (1-5)	43.822	399	.000	2.978	2.84	3.11
Shipping Disruptions in Key Chokepoints (1-5)	42.109	399	.000	2.920	2.78	3.06

Petroleum imports averaged 5.395 million tonnes a year and liquefied natural gas imports 3.653 million tonnes, underscoring Bangladesh's heavy dependence on imported energy. Energy infrastructure vulnerability was scored as 2.978 and shipping disruptions in major chokepoints as 2.920 on a 1–5 scale, suggesting that both energy systems resilience and maritime transport reliability present moderate systemic risk.

These results are consistent with the literature. Bazoobandi and Talebian (2023) remind us that Iran's strategic manipulation of critical maritime channels can increase supply chain risk for import-reliant states. According to Shepard and Pratson (2020), interruptions in the Strait of Hormuz directly correlate with tanker arrivals, fuel availability, and ship prices, which is consistent with moderate-high vulnerability displayed in the t-test findings. Similarly, Chi et al. (2025)

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demonstrate that political tensions increase energy market volatility, which substantiates the significance in fuel and LNG imports.

4.3 The Economic Impact of Supply Chain Disruptions on Bangladesh

Table 3 shows the Pearson correlation coefficients between the key energy market variables in Bangladesh such as fuel price volatility impact, total import cost increases, government energy contingency plan and interrelationship of energy inflation.

Table 3. Correlations of Energy Prices, Costs, Inflation, and Contingency Plans

		Fuel Price Volatility (%)	Import Cost Increase (%)	Energy Inflation Impact (1-5)	Government Energy Contingency Plans (1-5)
Fuel Price Volatility (%)	Pearson Correlation	1	-.012	.063	.027
	Sig. (2-tailed)		.815	.211	.589
	N	400	400	400	400
Import Cost Increase (%)	Pearson Correlation	-.012	1	.049	.043
	Sig. (2-tailed)	.815		.328	.387
	N	400	400	400	400
Energy Inflation Impact (1-5)	Pearson Correlation	.063	.049	1	.007
	Sig. (2-tailed)	.211	.328		.882
	N	400	400	400	400
Government Energy Contingency Plans (1-5)	Pearson Correlation	.027	.043	.007	1
	Sig. (2-tailed)	.589	.387	.882	
	N	400	400	400	400

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The assessment identifies the strength and directionality of relationships between these factors to evaluate links between dynamics in the market and policy responses as well as economic impacts. None of the correlations are statistically significant at conventional levels (i.e., all p-values > 0.05). For example, fuel price volatility is very weakly negatively correlated with cost of imports increase ($r = –0.012$, $p = 0.815$) and only weakly positively associated with energy inflation impact ($r = 0.063$, $p = 0.211$) and government contingency planning measures ($r = 0.027$, $p = 0.589$). In an identical fashion, import cost increase correlates weakly and non-significantly with energy inflation impact ($r = 0.049$, $p = 0.328$) and government contingency plans ($r = 0.043$, $p = 0.387$). Even the energy inflation effect shows a near-zero correlation with government contingency plans ($r = 0.007$, $p = 0.882$).

In Summary, the results illustrate that exchange rate variability is an independent shock from diesel fuel prices and/or energy-related inflation (for which we have no data) for this dataset, as reflected by trivial symmetric correlations with Government contingency planning. This means that governmental interventions are not tailored to react to temporary market volatility, or these energy shocks appear suppressed via alternate pathways such as private sector risk management and source supply diversification or not observed at all in line with arguments made by Shepard & Pratson (2020) and Chi et al. (2025)

4.4 Preparedness and Resilience of Bangladeshi Businesses and Government Policies

Table 4 describes the relationship between energy season risk management in the private sector and organizational energy stockpiling levels, determining whether firms' risk-cutting practices correlate to their energy reserve levels. There was a very weak, non-significant correlation ($r = 0.017$, $p = 0.737$). This means that the amount of risk management practices that private sector firms take like preparedness for supply disruptions, supplier diversification and contingency measures although relevant in terms of energy operations, is not directly linked to the amount of energy reserves held. In other words, just because firms are more active in risk management does not mean they hold a higher inventory of energy resources. Similar to those studies, this finding is consistent with the literature that suggests energy resilience depends on more than just physical stores. For example, Shepard & Pratson (2020) highlight how stockpiling is not always the solution for private sector energy resilience and it may be somewhat determined by strategic sourcing, flexible logistics and operational planning. Similarly, Chi et al. (2025) further point out that energy-importing countries or organizations mitigate geopolitical and supply chain risks through diversified supply chains, contractual safeguards, and hedging in markets measures which reduce the need for large stockpiles. This data indicate that although stockpiling is one measure of energy security Bangladeshi private-sector businesses seem more inclined to adopt other strategies for successful adaptation as a core component of their risk management, reflecting the complexities of maintaining resilience in regional supply chains under variable conditions.

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Table 4. Correlation Between Private Sector Risk Management and Energy Stockpiles

		Private Sector Energy Risk Management (1-5)	Energy Stockpile Levels (Months)
Private Sector Energy Risk Management (1-5)	Pearson Correlation	1	.017
	Sig. (2-tailed)		.737
	N	400	400
Energy Stockpile Levels (Months)	Pearson Correlation	.017	1
	Sig. (2-tailed)	.737	
	N	400	400

4.5 Strategies for Strengthening Bangladesh's Trade and Supply Chain Resilience

In this table, we outline the posterior distributions of pairwise correlations between four key energy strategies diversifying supply, integrating renewable energy technologies into existing energy systems, strengthening critical infrastructure resilience to disasters and human-made shocks strategic expansion of reserves, providing resorts for businesses during a temporary pause and their modesmeanvariance95% credible intervals in order to assess the relationships and overlap between these measures.

Table 5 shows posterior distributions for the two key energy strategy measures of diversification of the sources from which we derive our energy supplies, renewable energy integration and resilience improvement for an overall system in terms of infrastructure design as well as planned expansion of strategic reserves. Mode, mean, variance and 95% credible intervals for each pairwise correlation are displayed with reference priors (c = 0).

Most of the correlations are weak and often cover zero with their 95% credible intervals, indicating weak or no association between these strategies. To illustrate, diversification of energy supply sources have a mean correlation of 0.063 with infrastructure resilience enhancement and near-zero correlations to renewable integration (–0.030) and strategic reserves (0.024). Integration of renewable energies shows weak negative correlation with infrastructure resilience (−0.081) and slight positive correlation with strategic reserves (0.093). Infrastructure resilience improvement and strategic reserves expansion explain a weak negative correlation (–0.086). Collectively, this

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suggests that respondents consider the different strategies to be relatively independent from each other, rather than highly interrelated.

Table 5. Posterior Distributions of Pairwise Correlations among Energy Strategy Measures

			Diversification of Energy Supply Sources (1-5)	Renewable Energy Integration (1-5)	Enhancing Energy Infrastructure Resilience (1-5)	Strategic Energy Reserves Expansion (1-5)
Diversification of Energy Supply Sources (1-5)	Posterior	Mode		-.030	.063	.024
		Mean		-.030	.063	.024
		Variance		.002	.002	.002
	95% Credible Interval	Lower Bound		-.127	-.034	-.074
		Upper Bound		.068	.160	.122
	N		400	400	400	400
Renewable Energy Integration (1-5)	Posterior	Mode	-.030		-.082	.094
		Mean	-.030		-.081	.093
		Variance	.002		.002	.002
	95% Credible Interval	Lower Bound	-.127		-.179	-.003
		Upper Bound	.068		.015	.190
	N		400	400	400	400

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Enhancing Energy Infrastructure Resilience (1-5)	Posterior	Mode	.063	-.082		-.087
		Mean	.063	-.081		-.086
		Variance	.002	.002		.002
	95% Credible Interval	Lower Bound	-.034	-.179		-.183
		Upper Bound	.160	.015		.010
	N		400	400	400	400
Strategic Energy Reserves Expansion (1-5)	Posterior	Mode	.024	.094	-.087	
		Mean	.024	.093	-.086	
		Variance	.002	.002	.002	
	95% Credible Interval	Lower Bound	-.074	-.003	-.183	
		Upper Bound	.122	.190	.010	
	N		400	400	400	400

a. The analyses assume reference priors (c = 0).

It is consistent with the literature that explains energy resilience strategies are multi-dimensional and complementary but not perfectly correlated. (Shepard and Pratson, 2020; Chi et al. (2025): These tools, including diversification, renewable adoption, infrastructure resilience and strategic reserves are like different tool sets that can be used to minimize risk each addressing a unique issue in a vulnerable supply chain. These low correlations indicate that enhancing one strategy for instance, renewable integration does not necessarily provide a boost to other strategies, which underscores the importance of contributing and complementary policies in developing comprehensive resilience in energy systems.

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4.6 Discussion

The core findings are stated below:

1. The one-sample t-test indicates that Bangladesh's fuel and LNG import volumes differ significantly from zero, with average petroleum imports of 5.395 million tonnes/yr, whilst the figure for LNG is 3.653 million tonnes/yr This highlights the country's heavy reliance on foreign sources of energy, which makes it vulnerable to blockages in global trade and regional clashes.
2. Vulnerability of energy infrastructure, and disruption to shipping at key chokepoints were rated about a 3 on a scale of 1–5 reflecting moderate systemic risk. The findings underscore the vulnerabilities of Bangladesh's energy supply chains to operational and service terminations in any key maritime routes like Strait of Hormuz.
3. The relationships between fuel price volatility, import cost increase, energy inflation and government contingency plans were analysed using no correlation result using Cramer test. This indicates that policy actions are not responsive to volatilities and energy shocks could be absorbed through other ways such as alternative private sector adjustments or supply diversification.
4. Most notably, private sector energy risk management was poorly but not significantly associated with energy stockpile levels ($r = 0.017$, $p = 0.737$). This suggest firms' risk mitigation practices, like contingency planning and supplier diversification, do not directly translate to physical stockpiles, highlighting other strategies for resilience.
5. Other results (posterior analysis of diversification, integration of renewable energy sources to the grid, infrastructure resiliency and strategic reserves) were mostly weakly correlated (often including zero). It indicates that respondents think of these strategies as largely independent, indicating a need for complementary and coordinated work to improve resilience across the energy system.

4.7 Recommendations

Based on the findings the recommendations are given below:

1. The diversification of energy import sources is extremely crucial for Bangladesh as a means to avoid the dependence on only few foreign suppliers, which makes the country more vulnerable in times of regional conflicts and trade disruptions.
2. Investing in robust energy infrastructure and developing contingency plans for key chokepoints, including alternative transport routes, should alleviate operational and shipping challenges.

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3. Energy policies enacted by the government must be more responsive to market changes, with controls in place that respond proactively to price spikes and supply disruptions.
4. Neither findings of this research, nor any modelling results should stop firms from supplementing upon good risk management practices with tangible measures (for example stockpiled commodities, or safeguarded contracts) to increase resilience at a level beyond that which one can simply plan for.
5. A coordinated approach should be taken to ensure that energy diversification, renewable integration, infrastructure resilience and strategic reserves collectively reinforce the overall stability of Bangladesh's energy system.

4.8 Limitations

There are limitations to this study that should be noted. It only focuses on the Iran–Israel geopolitical tensions and its impingements in Bangladesh so cannot be extrapolated to any other workings of conflict or region. Second, most of the work used secondary data sources and survey responses from actors in the energy sector, which are unlikely to capture informal trade flows or any private sector contingency practices. Focuses on fuel, LNG and energy infrastructure in the study while other sectors, especially ready-made garment exports and food imports are not studied enough. Weak associations or not-significant relationships were found in some statistical analyses such as correlations and t-tests, minimizing strong causal conclusions. Finally, a considerable portion of resilience strategy evaluation relies on survey-based snippets which may not completely incorporate their operational, real-world efficacy or implementation difficulties.

5. Conclusion

This study identifies the key vulnerabilities to Bangladesh's trade and supply chains within geopolitical tensions between Iran–Israel. The results show Bangladesh vulnerable to potential disruptions, cost escalation and delays in its energy supply due to the country's heavy dependence on imported fuel and LNG amid moderate systemic concerns in its energy infrastructure as well as important maritime chokepoints. The analysis suggests that private sector risk management practices and government contingency measures, though relevant, are not necessarily rendered in physical stockpiles or transferable to immediate supply chain risk mitigation. Finally, an assessment of resilience strategies suggests that diversification of energy sources, renewable energy integration, infrastructure strengthening and strategic reserves are measures that are relatively independent from each other, reinforcing the call for coordinated and complementary strategies. In conclusion, the study highlights an urgent need for Bangladesh to pursue a multi-pronged strategy that incorporates infrastructure investment, policy responsiveness and strategic planning into efforts aimed at improving trade resilience in order to protect supply chains against geopolitical shocks.

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