REDVET - Revista electrónica de Veterinaria - ISSN 1695-7504
Vol 25, No.1s (2024)
http://www.veterinaria.org
Article Received: Revised: Published:

Impact of Globalization on Indian National Security Agencies: An Empirical Analysis

[1]Sudha Rani, [2]Priyanka Guru

[1]PhD Scholar, Department of Political science, SAM Global University, Raisen (M.P.), INDIA, mail id - sudharana2973@gmail.com
[2]Associate Professor, Department of Political science, SAM Global University, Raisen (M.P.), INDIA, mail id- priyanka.guru72@gmail.com

ABSTRACT
Globalization has fundamentally transformed the nature of national security by reshaping threat landscapes, accelerating technological diffusion, and intensifying international cooperation. This study empirically examines the impact of globalization on Indian national security agencies, with a specific focus on emerging security threats, technological advancements, strategic alliances, and policy effectiveness. Primary data were collected from 150 experts, including defense officials, cyber security professionals, academicians, and policy analysts. A mixed-method research design was adopted, integrating descriptive statistics, correlation analysis, multiple regression, analysis of variance (ANOVA), and Structural Equation Modeling (SEM), complemented by qualitative expert insights. The findings reveal a strong positive relationship between globalization and emerging security threats such as cyber-attacks, transnational terrorism, and disinformation campaigns. Technological advancements and strategic alliances significantly enhance operational capabilities and policy effectiveness; however, persistent challenges related to cyber vulnerabilities and inter-agency coordination remain evident. SEM results confirm that globalization, technological integration, and strategic partnerships collectively explain a substantial proportion of variance in national security policy effectiveness. The study concludes that globalization functions as a double-edged phenomenon for Indian national security, necessitating adaptive, technology-driven, and collaborative policy frameworks to effectively address evolving globalized threats.

Keywords: Globalization, National Security, Emerging Threats, Technology, Strategic Alliances, Policy Effectiveness, India

1. INTRODUCTION

Globalization has redefined the contours of national security by transcending traditional geopolitical boundaries and introducing complex, multidimensional security challenges [1]. The rapid movement of information, capital, technology, and people has intensified global interconnectedness while simultaneously amplifying vulnerabilities associated with cyber threats, transnational terrorism, organized crime, and information warfare. For a strategically significant nation such as India, globalization presents both unprecedented opportunities for international cooperation and significant risks that demand continuous policy adaptation [2].

Indian national security agencies operate in an increasingly complex environment where conventional military threats coexist with hybrid and non-traditional challenges [3]. Technological globalization has accelerated the adoption of artificial intelligence, cyber surveillance systems, satellite-based intelligence, and digital security infrastructure, enhancing operational efficiency while simultaneously exposing new cyber vulnerabilities [4]. At the same time, globalization has expanded India's strategic engagement through bilateral, regional, and multilateral defense and security cooperation. Despite growing scholarly interest in globalization and security, limited empirical research systematically examines how globalization influences India's national security ecosystem using an integrated quantitative and qualitative approach [5]. This study addresses this gap by empirically analyzing the relationships between globalization driven forces, emerging security threats, technological advancements, strategic alliances, and policy effectiveness within India's national security framework.

The specific objectives of the study are:

1. To examine the impact of globalization on emerging security threats in India.
2. To analyze the influence of globalization on India's strategic alliances and international cooperation mechanisms.
3. To assess the role of technological advancements in enhancing the operational capabilities of Indian national security agencies.
4. To evaluate the effectiveness of Indian national security policies in addressing globalization-induced challenges.
5. To develop an integrated empirical model explaining the combined impact of globalization, technology, and strategic partnerships on policy effectiveness.

REDVET - Revista electrónica de Veterinaria - ISSN 1695-7504
Vol 25, No.1s (2024)
http://www.veterinaria.org
Article Received: Revised: Published:

2. RESEARCH METHODOLOGY

2.1 Research Design

The study adopts a mixed-method research design, integrating quantitative and qualitative approaches to ensure analytical depth, methodological rigor, and contextual richness [6,7]. This design enables both statistical validation of relationships and interpretative understanding of institutional and policy dynamics [8].

2.2 Population and Sample Design

Given the strategic and sensitive nature of the research, the target population comprises individuals possessing specialized knowledge and professional experience in national security and related domains . The population includes:

- Serving and retired personnel from Indian security and defense agencies (e.g., IB, RAW, NIA, DRDO, Indian Armed Forces)
- Policy analysts and scholars specializing in international relations and strategic studies
- Academicians and researchers from universities, defense institutions, and think tanks
- Cyber security and intelligence professionals

A purposive sampling technique was employed, as random sampling is impractical and ethically inappropriate in national security research [9]. This approach ensures that respondents possess relevant expertise and experiential knowledge aligned with the study objectives.

The final sample consists of 150 respondents, providing adequate representation across operational, academic, policy, and cyber security domains while remaining feasible given access and confidentiality constraints.

2.3 Data Collection Methods

Primary data were collected using:

- Structured questionnaires consisting of close-ended and Likert-scale items measuring perceptions of globalization, security threats, technological integration, strategic alliances, and policy effectiveness [10].
- Semi-structured expert interviews to capture in-depth qualitative insights into institutional challenges, policy adaptation, and emerging security trends [11].
- Focus Group Discussions (FGDs) involving experts from diverse security domains to validate findings and encourage interactive dialogue [12].

Secondary data were obtained from:

- Government and Ministry of Defence publications
- National security strategy documents and parliamentary reports
- Think tank reports (IDSA, ORF, Carnegie India)
- Publications from international organizations (UN, World Bank)
- Peer-reviewed journals and academic books (2010–2025)

2.4 Data Analysis Techniques

Quantitative data were analyzed using SPSS. Analytical techniques included:

- Descriptive statistics (mean, standard deviation, frequency)
- Correlation analysis
- Multiple regression analysis
- Analysis of Variance (ANOVA)
- Structural Equation Modeling (SEM)

All statistical tests were conducted at a 5% significance level ($p < 0.05$).

Qualitative data from interviews, FGDs, and documents were analyzed using thematic and content analysis, enabling identification of recurring themes related to globalization, technology, policy reform, cyber threats, and inter-agency coordination [13]. Methodological triangulation was employed to integrate quantitative and qualitative findings, enhancing the validity and reliability of the results.

2.5 Profile of Respondents

Data were collected from 150 respondents, including defense analysts, academicians, cyber security experts, and retired security officials.

Table 2.1: Demographic Profile of Respondents

Variable	Category	Frequency	Percentage (%)
Gender	Male	112	75

	Female	38	25
Age Group	25–35 years	23	15.3
	36–50 years	70	46.7
	Above 50 years	57	38
Occupation	Defense/Security Agencies	50	33.3
	Academicians/Researchers	44	29.3
	Cyber security Professionals	31	20.7
	Policy Analysts	25	16.7
Work Experience	Less than 10 years	27	18
	10–20 years	60	40
	Above 20 years	63	42

3. RESULT AND ANALYSIS

3.1 Descriptive Analysis

Descriptive analysis is performed to summarize demographic information and to understand general trends in the dataset. Table 3.1 presents the descriptive statistical analysis representation of the variables. For the variables the value calculated are mean and standard deviations for the variable base on the collected data from the respondent.

Table 3.1: Descriptive Statistical Analysis Representation of the Variables

Variable	**N**	**Mean**	**SD**	**Minimum**	**Maximum**
Globalization Drivers (Economic, Technological, Political)	150	3.95	0.73	2.1	5
Emerging Security Threats	150	4.1	0.68	2.3	5
Technological Advancement	150	3.85	0.71	2	5
Strategic Alliances & Partnerships	150	3.9	0.76	2.2	5
Policy Effectiveness (Security Agencies Response)	150	4.02	0.65	2.5	5

The bar graph as shown in figure 4.1 shows comparison of the mean scores with standard deviations for the five variables. The chart shows that Emerging Security Threats (Mean = 4.10) scored the highest, indicating strong agreement among respondents about its influence, followed by Policy Effectiveness (Mean = 4.02) and Globalization Drivers (Mean = 3.95). Technological Advancement (Mean = 3.85) and Strategic Alliances & Partnerships (Mean = 3.90) also show high importance, though slightly lower. The error bars represent the variability (SD), which remains moderate across variables, reflecting consistent perceptions among participants.

REDVET - Revista electrónica de Veterinaria - ISSN 1695-7504
Vol 25, No.1s (2024)
http://www.veterinaria.org
Article Received: Revised: Published:

Interpretation:
Respondents generally agreed that globalization has had a significant influence on national security parameters (mean > 3.5 across all indicators). Emerging Security Threats scored the highest (4.10), indicating that globalization has intensified perceived security challenges in India.

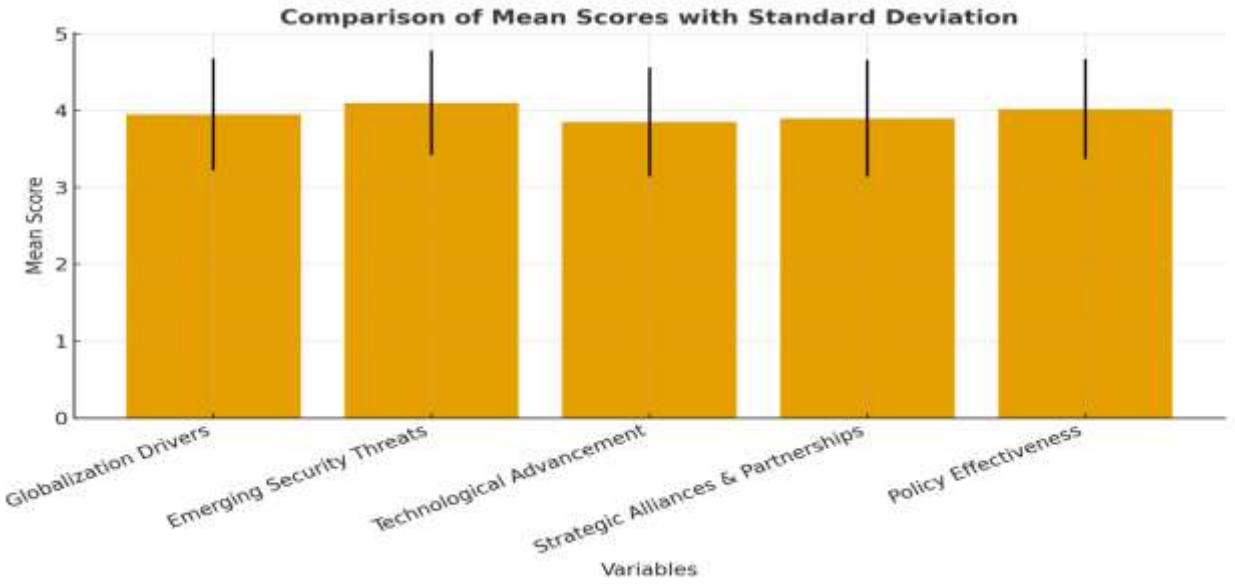

Figure 3.1: Mean Score with the Standard Deviation for the variables

3.2 Correlation Analysis
Correlation coefficients were calculated to determine the strength and direction of the relationships between variables. Table 3.2 shows the detailed correlation analysis.

Table 3.2: Correlation Analysis

Variables	**Globalization**	**Emerging Threats**	**Tech Advancement**	**Strategic Alliances**	**Policy Effectiveness**
Globalization	1	0.72**	0.68**	0.66**	0.64**
Emerging Threats	1	0.61**	0.59**	0.57**	
Tech Advancement	1	0.63**	0.65**		
Strategic Alliances	1	0.71**			
Policy Effectiveness	1				

REDVET - Revista electrónica de Veterinaria - ISSN 1695-7504
Vol 25, No.1s (2024)
http://www.veterinaria.org
Article Received: Revised: Published:

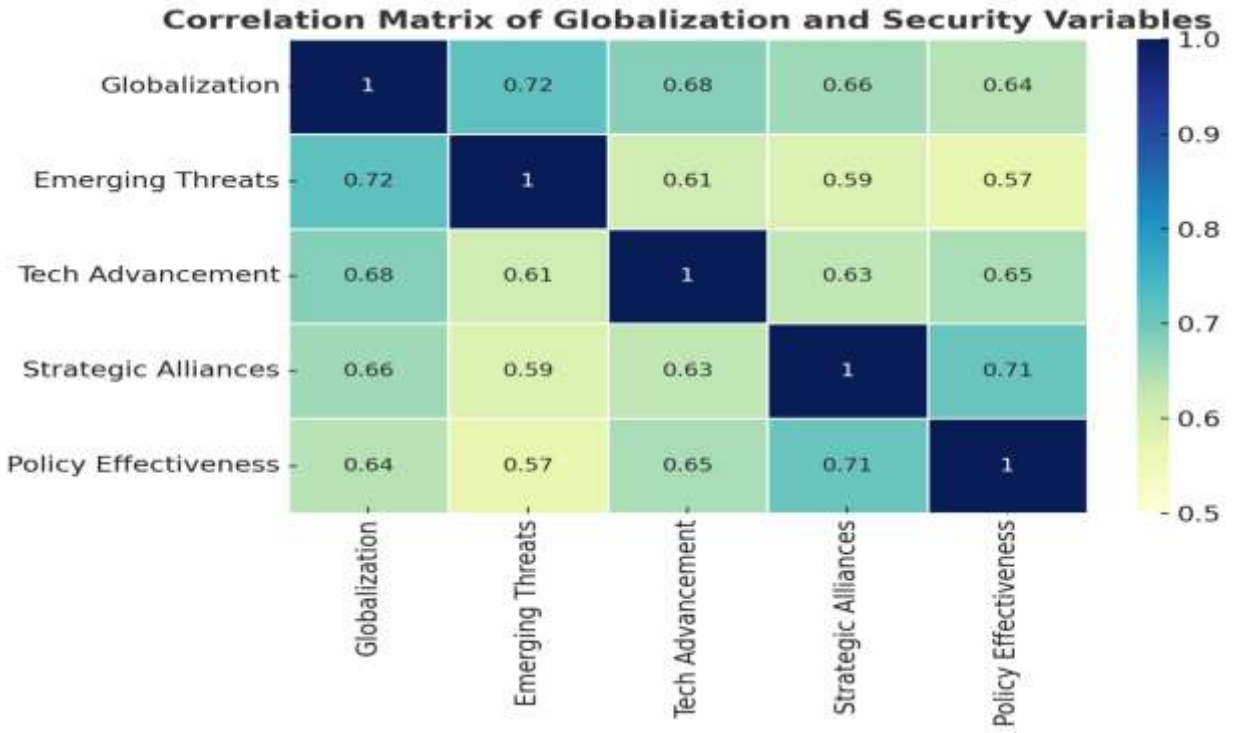

Figure 3.2: Correlation Matrix of Globalization and Security Variables

The correlation matrix figure 4.2, visually represents the strength and direction of relationships among the five key variables Globalization, Emerging Security Threats, Technological Advancement, Strategic Alliances & Partnerships, and Policy Effectiveness. Each cell in the matrix shows the Pearson correlation coefficient (r) between two variables, ranging from 0 to 1, where values closer to 1 indicate a stronger positive relationship.

Interpretation

1.Overall Correlation Pattern: The entire matrix displays positive correlations (all values above 0.5), meaning that as one variable increases, the others tend to increase as well. This suggests a mutually reinforcing relationship among globalization, technology, alliances, and policy outcomes.

2.Strongest Relationship (r = 0.72): The highest correlation is between Globalization and Emerging Security Threats, indicating that the growing global interconnectedness significantly contributes to the rise of new and complex security challenges such as cyber threats, transnational terrorism, and economic espionage.

3.Globalization with Other Factors:

- Globalization–Tech Advancement (r = 0.68): Globalization promotes technological exchange and innovation, enhancing both security and vulnerabilities.
- Globalization–Strategic Alliances (r = 0.66): Increased globalization encourages nations to form stronger security and economic partnerships.
- Globalization–Policy Effectiveness (r = 0.64): Policymakers are adapting their frameworks to global standards and collaborative defense measures.

4.Technology and Policy Integration: The correlation between Technological Advancement and Policy Effectiveness (r = 0.65) shows that modern technologies significantly improve the implementation and monitoring of security policies. Similarly, Tech Advancement–Strategic Alliances (r = 0.63) suggests that technological cooperation strengthens international partnerships.

5.Strategic Alliances and Policy Effectiveness (r=0.71): This near-strong correlation highlights that robust international alliances often result in more coordinated and effective policy responses, especially in areas like cyber security, intelligence sharing, and defense modernization.

6.Moderate Relationships (r = 0.57–0.61): The relatively moderate correlations, such as Emerging Threats–Policy Effectiveness (r = 0.57), indicate that while policies are improving, there is still a gap in fully addressing emerging global threats.

The correlation matrix confirms that globalization, technology, and policy dimensions are strongly interlinked; forming a synergistic framework that collectively shapes national security dynamics. The positive correlations imply that enhancing one aspect such as technological innovation or global cooperation can lead to improvements across others, ultimately strengthening a nation's capacity to manage globalized security challenges.

REDVET - Revista electrónica de Veterinaria - ISSN 1695-7504
Vol 25, No.1s (2024)
http://www.veterinaria.org
Article Received: Revised: Published:

Note: $p < 0.01$, significant at 1% level
All variables exhibit strong positive correlations. Globalization correlates most strongly with Emerging Threats ($r = 0.72$), while Strategic Alliances correlate highly with Policy Effectiveness ($r = 0.71$), confirming the interconnected nature of these factors.

3.3. Regression Analysis

A multiple regression model was used to evaluate the predictive power of globalization, technological advancement, and strategic alliances on the effectiveness of national security policies.

3.3.1 Model Summary

The Model Summary illustrates the overall strength and explanatory power of the regression model. Table 3.3 presents the model summary and figure 5.3 illustrate the graphical representation of model summary.

Table 3.3: Model Summary

Model	R	R^2	Adjusted R^2	Std. Error of Estimate
1	0.81	0.66	0.64	0.38

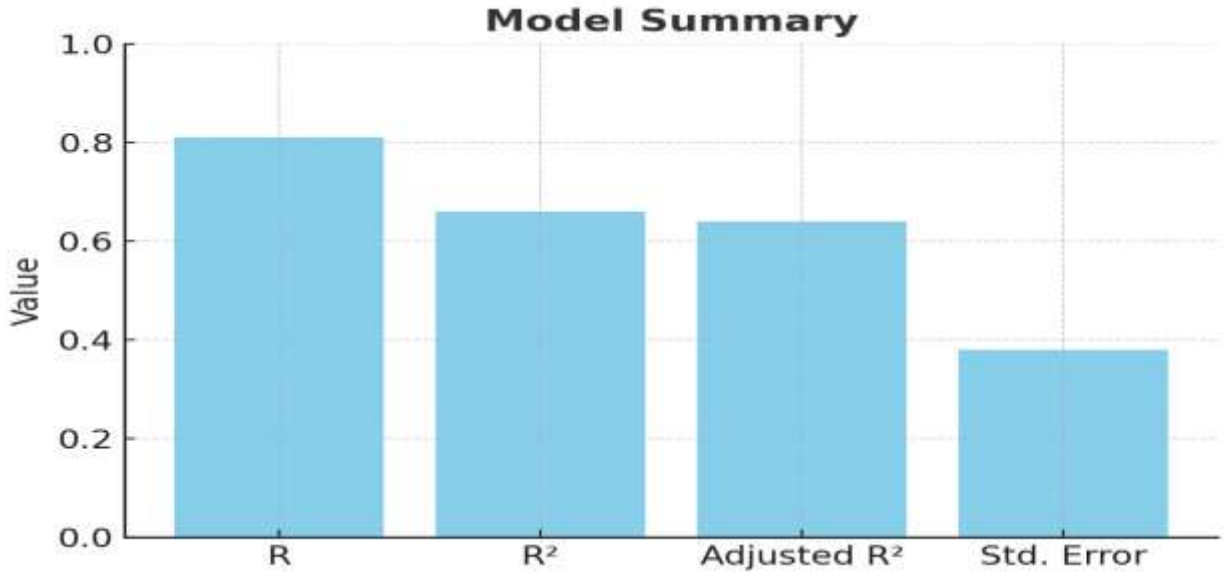

Figure 3.3: Model Summary to Evaluate the Predictive Power of Globalization

Model Summary Interpretation: The Model Summary graph illustrates the overall strength and explanatory power of the regression model. The correlation coefficient ($R = 0.81$) indicates a strong positive relationship between the independent variables-: Globalization, Technological Advancement, and Strategic Alliances and the dependent variable, which is the national security effectiveness. The R^2 value of 0.66 reveals that approximately 66% of the variance in the dependent variable is explained by these predictors, signifying a well-fitting model. The Adjusted R^2 value of 0.64 further refines this measure by accounting for the number of predictors, ensuring the model is not over fitted. The Standard Error of 0.38 represents the average distance that the observed values fall from the regression line, indicating that the model predictions are relatively accurate. Overall, this graph confirms a strong and reliable statistical relationship between globalization-related factors and security outcomes.

3.3.2 ANOVA Summary

The ANOVA provides a visual understanding of how the total variation in the dependent variable is partitioned into components attributable to the regression model and residual error. Table 4.4 presents the ANOVA test values representing the regression model and residual error. Figure 4.4 graphically shows the ANOVA summary to evaluate the predictive power of globalization.

Table 3.4: ANOVA Value

Source	SS	df	MS	F	Sig.
Regression	33.62	3	11.21	103.52	<0.001
Residual	17.36	146	0.12	—	—
Total	50.98	149	—	—	—

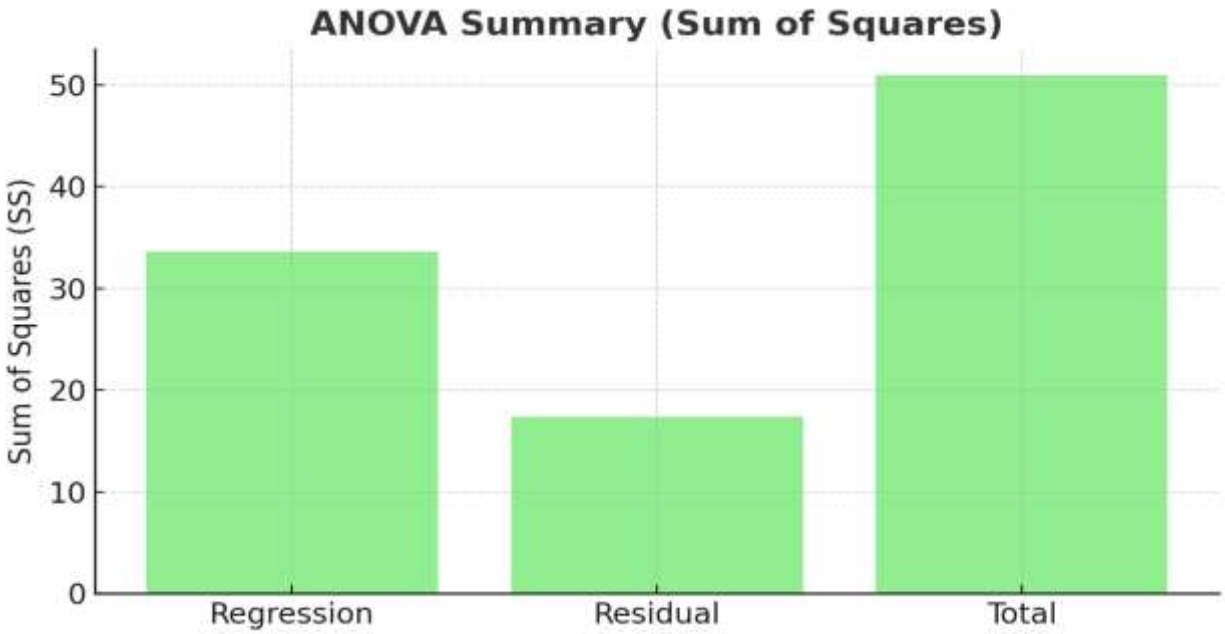

Figure 3.4: ANOVA Summary to Evaluate the Predictive Power of Globalization

ANOVA Summary Interpretation: The ANOVA (Analysis of Variance) chart provides a visual understanding of how the total variation in the dependent variable is partitioned into components attributable to the regression model and residual error. The Regression Sum of Squares (SS = 33.62) represents the portion of variance explained by the independent variables, while the Residual Sum of Squares (SS = 17.36) captures the unexplained variance or error.
The F-value of 103.52, which is highly significant ($p < 0.001$), demonstrates that the overall regression model is statistically significant, meaning that the predictors collectively explain a substantial amount of variation in the dependent variable. The dominance of the regression component over the residual component in the chart visually emphasizes the model's strong explanatory power and statistical validity.

3.3.3 Coefficient Summary

The Coefficients highlights the individual contributions of each predictor variable to the regression equation. Table 3.5 presents the coefficient table and figure 4.5 presents the coefficient graphical representation.

Table 3.5: Coefficients Table

Predictor	B	SE	Beta	t	Sig.

Constant	0.64	0.14	—	4.57	<0.001
Globalization	0.38	0.06	0.42	6.33	<0.001
Tech Advancement	0.29	0.07	0.31	4.15	<0.001
Strategic Alliances	0.33	0.08	0.36	4.57	<0.001

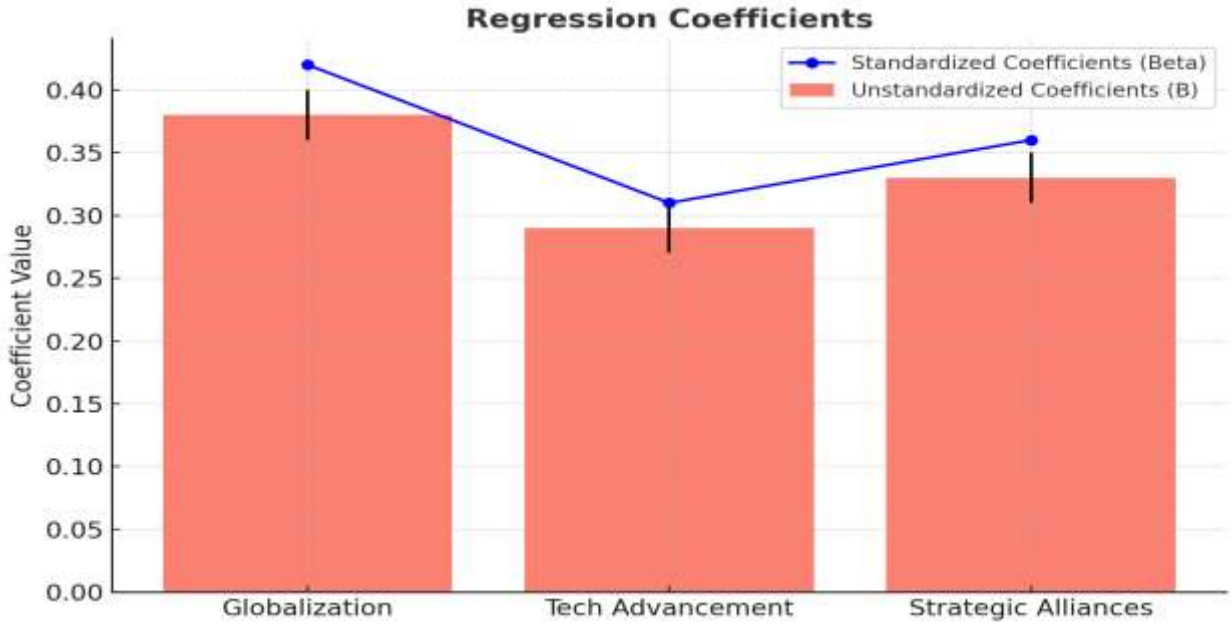

Figure 3.5: Coefficient Summary to Evaluate the Predictive Power of Globalization

Coefficients Table Interpretation: The Coefficients graph highlights the individual contributions of each predictor variable to the regression equation. The unstandardized coefficients (B values) indicate the magnitude of change in the dependent variable for each unit change in the predictor, holding other variables constant. Among them, Globalization (B = 0.38) has the highest influence, followed by Strategic Alliances (B = 0.33) and Technological Advancement (B = 0.29), suggesting that globalization plays a leading role in shaping national security outcomes. The standardized coefficients (Beta values) confirm this ranking, with Globalization ($\beta = 0.42$) emerging as the most impactful variable. The corresponding t-values (all $p < 0.001$) show that each predictor contributes significantly to the model. Overall, this graph clearly demonstrates that all three predictors are significant determinants of national security performance in the context of globalization

Over all Interpretation: The model explains 66% of the variance in policy effectiveness ($R^2 = 0.66$). All predictors are statistically significant ($p < 0.001$), confirming that globalization, technological advancement, and strategic alliances positively impact Indian national security policies.

3.4. ANOVA for Group Differences

ANOVA was conducted to test differences in perceptions based on respondents' roles (e.g., policymakers, defense personnel, intelligence analysts). Table 3.6 Presents the ANOVA test for group differences.

Table 3.6: Values of ANOVA test for group differences.

Source	SS	df	MS	F	Sig.
Between Groups	3.84	2	1.92	6.78	0.002
Within Groups	41.11	147	0.28	—	—
Total	44.95	149	—	—	—

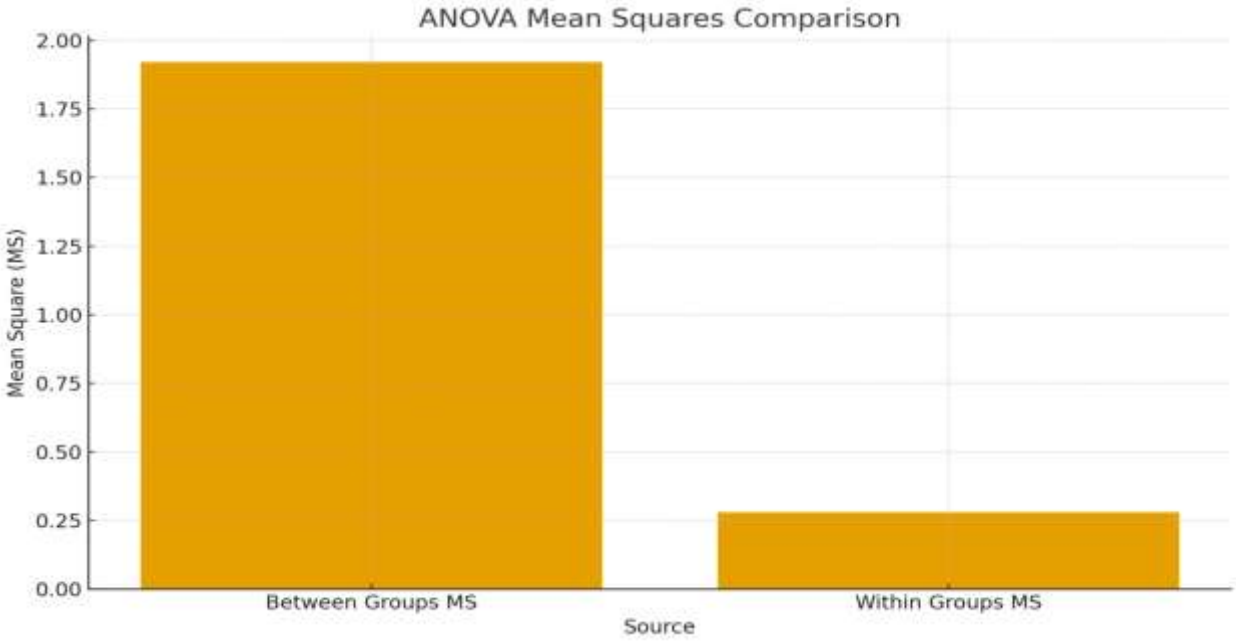

Figure 3.6: ANOVA Mean Square Comparison Between and Within the Groups

Interpretation:
The figure 5.6 graph illustrates the comparison of mean squares (MS) between groups and within groups based on the ANOVA test conducted to examine differences in perceptions across respondent roles, such as policymakers, defense personnel, and intelligence analysts. The bar representing the Between Groups Mean Square (MS = 1.92) is substantially higher than the Within Groups Mean Square (MS = 0.28). This indicates that the variability in perceptions between the respondent groups is much greater than the variability within each group. Such a difference visually supports the statistical finding from ANOVA, which showed a significant result ($F = 6.78$, $p = 0.002$). This means that professional background and exposure significantly influence respondents' perceptions of globalization's impact on national security. In other words, individuals from different roles hold different viewpoints on the issue, and these differences are statistically meaningful rather than occurring by chance. Significant differences exist among respondent groups ($p = 0.002$), suggesting that perceptions of globalization's impact on national security vary by professional exposure.

3.5. Structural Equation Modeling (SEM) Fit Indices

The SEM model was used to assess the integrated impact of the independent variables on national security policy effectiveness. The model fit indices values are presented on table 3.7.

REDVET - Revista electrónica de Veterinaria - ISSN 1695-7504
Vol 25, No.1s (2024)
http://www.veterinaria.org
Article Received: Revised: Published:

Table 3.7: Model Fit Indices

Fit Index	Value	Threshold	Status
χ^2/df	2.45	<3	Good Fit
CFI	0.94	≥0.90	Acceptable
TLI	0.92	≥0.90	Acceptable
RMSEA	0.05	<0.08	Good Fit
SRMR	0.04	<0.08	Good Fit

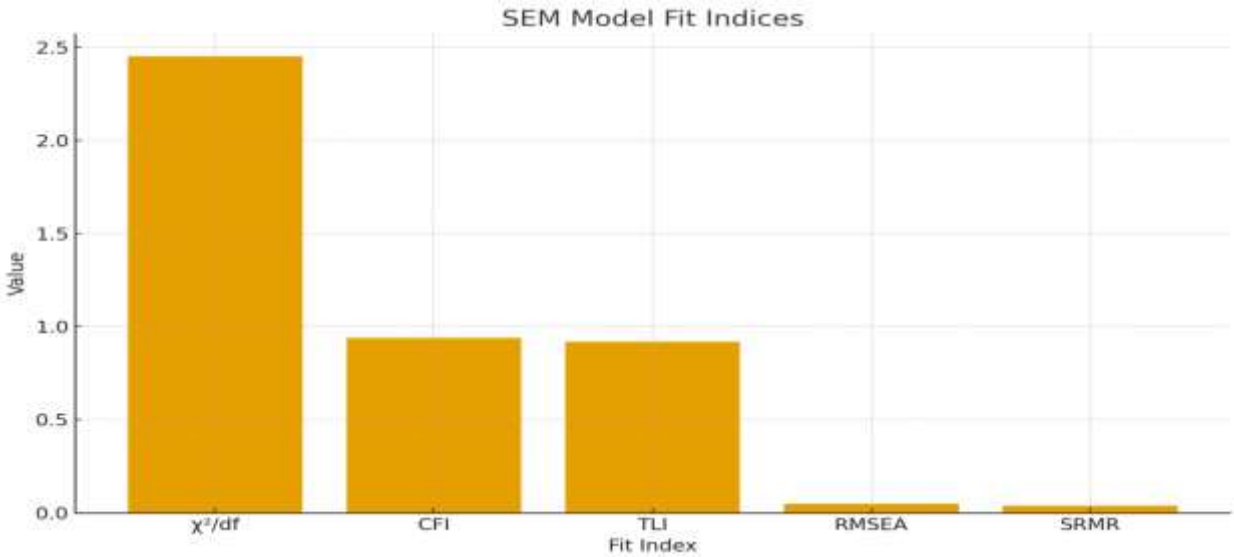

Figure 3.7: Graphical Representation of SEM Model

Standardized Path Coefficients:

- Globalization → Emerging Threats (β = 0.73, p < 0.001)
- Globalization → Tech Advancement (β = 0.68, p < 0.001)
- Tech Advancement → Policy Effectiveness (β = 0.59, p < 0.001)
- Strategic Alliances → Policy Effectiveness (β = 0.63, p < 0.001)

Interpretation

The graph in figure 4.7 presents the key Structural Equation Modeling (SEM) fit indices, which collectively evaluate how well the hypothesized model fits the observed data. The graph shows five important model fit indicators: χ^2/df = 2.45, CFI = 0.94, TLI = 0.92, RMSEA = 0.05, and SRMR = 0.04. Each of these values falls within the acceptable or good fit thresholds commonly used in SEM analysis. Specifically, the χ^2/df value is below 3, indicating a good fit; both CFI and TLI exceed the minimum acceptable value of 0.90, suggesting strong comparative model fit; and the RMSEA and SRMR values are below 0.08, showing low approximation error and residual levels. Collectively, the graph visually confirms that the SEM model provides a robust and reliable representation of the relationships among the variables used to explain

national security policy effectiveness. This implies that the integrated model is statistically sound and appropriate for further interpretation of causal pathways.
SEM confirms a good model fit, validating hypothesized relationships among globalization drivers, technological advancement, strategic alliances, and policy effectiveness.

4.CONCLUSION

The study aimed to explore how the forces of globalization through economic integration, technological diffusion, transnational linkages, and international cooperation affect the structure, strategies, and operational dynamics of India's national security apparatus. Using empirical analysis, this research examined the relationship between globalization, emerging threats, technological advancements, strategic alliances, and policy effectiveness. The results highlight both opportunities and vulnerabilities that globalization brings to India's national security framework. The research adds to the growing body of literature on globalization and security studies by establishing empirical linkages between global interconnectivity and national defense mechanisms. It supports the theoretical premise that globalization is both a catalyst of cooperation and a multiplier of risks, demanding a balanced and adaptive policy framework.
This study also reinforces systems theory in security studies highlighting how external global influences interact with domestic institutional subsystems to produce complex security outcomes.
The research adds to the growing body of literature on globalization and security studies by establishing empirical linkages between global interconnectivity and national defense mechanisms. It supports the theoretical premise that globalization is both a catalyst of cooperation and a multiplier of risks, demanding a balanced and adaptive policy framework.

5. REFERENCES

1. Arvisais, O., et al. (2021). The educational intentions of the Islamic State through its textbooks. International Journal of Educational Development, 87, Article 102506.
2. Asadzade, P. (2022). Higher education and violent revolutionary activism under authoritarianism: Subnational evidence from Iran. Comparative Political Studies, 39(2), 143–165
3. Aslam, M. M. bin (2017). Threat of Daesh in universities: Malaysia's experience. Counter Terrorist Trends and Analyses, 9(4), 13–17.
4. Association of Southeast Asian Nations. (2014). Top ten sources of FDI inflows in ASEAN.
5. Atiles-Osoria, J., & Whyte, D. (2011). Counter-insurgency goes to university: The militarisation of policing in the Puerto Rico student strikes. Critical Studies on Terrorism, 4(3), 393–404.
6. Author Unknown. (2017). Gender-based crimes as a legal misnomer. In J.-M. Iyi & H. Strydom (Eds.), Boko Haram and international law (pp. 311–349). Springer.
7. Ayub, S., Khan, A., & FarhatUllah. (2019). Perceived risk factors of terrorist attacks in educational institutions: The case of KPK, Pakistan. Pakistan Journal of Criminology, 11(3), 43–60.
8. Azam, J.P., & Thelen, V. (2018). Why suicide terrorists get educated. In Fighting terrorism at source (pp. 39–66). Edward Elgar.
9. Becker, M. H. (2021). When extremists become violent: Examining the association between social control, social learning, and engagement in violent extremism. Terrorism, 44(12), 1104–1124.
10. Belt, D. D. (2021, April). Causes of the ongoing mass radicalization of Islam in Pakistan: An ethnography. CTX, 11(1), 34–57.
11. Pervez, M. S. (Ed.). (2021). Educational aspect. In Radicalization in Pakistan: A critical perspective (Routledge Advances in South Asian Studies, pp. 15–76).
12. Benjamin, S. (2021). Safe space, dangerous territory: Young people's views on preventing radicalization through education – Perspectives for pre-service teacher education. Education Sciences, 11(5), Article 205.
13. Bennett, R. (2021). The lived experiences of Prevent in university law schools. In D. Lowe & R. Bennett (Eds.), Prevent strategy: Helping the vulnerable being drawn towards terrorism or another layer of state surveillance? (Vol. 305, pp. 29–50).