

GISTS: DISSERTATIONS OF HDMC-20

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**A QUALITATIVE STUDY ON GOVT TO GOVT (G2G) CONTRACTS AND
MILITARY DIPLOMACY TO BOOST DEFENCE EXPORTS**

By

Col Dhruv Raheja

The dissertation explores how **Government-to-Government (G2G) contracts** and **military diplomacy** can enhance **India's defence exports**. The **problem statement** identifies structural challenges in India's defence exports despite multiple government initiatives, including dominance of **Defence Public Sector Units (DPSUs)**, limited **private sector participation**, complex export procedures, and insufficient **military-diplomatic coordination**. It argues that **G2G agreements**, if effectively leveraged, can provide **secure and transparent negotiations, diplomatic advantages, and increased market access**, while **military diplomacy** can strengthen strategic partnerships and create long-term defence cooperation.

The study applies **Levitt's Diamond Model** and **Soft Systems Methodology (SSM)** for its **analysis and recommendations**. It uses **qualitative research methods**, including **thematic analysis** of expert interviews and **secondary data**. The dissertation concludes with key **policy recommendations**, such as improving **G2G contract frameworks**, increasing **defence attaches' roles**, simplifying **export regulations**, ensuring **technology transfers**, and enhancing **private sector participation** to drive sustainable growth in defence exports.

Keywords: Defence exports, military diplomacy, Govt to Govt (G2G), Defence Lines of Credit (DLOC), private defence manufacturers, DPSUs, defence production, DPEPP.

**A QUALITATIVE RESEARCH ON EMERGING AFGHANISTAN -PAK
CONUNDRUM TO EXPLORE PLAUSIBLE SCENARIOS & ASSESS THEIR
IMPACT ON INDIA'S NATIONAL SECURITY**

By

Col RP Salgar

The Afghan-Pak situation continues to be a deep-rooted Geo-Pol dispute, carrying historical, Pol, & security penalties for South Asia, especially India. Unresolved border clashes, Cross-Border terrorism, & the meddling of external powers have made the region obstinately unstable. (Zajeera, 2024) This precarious relationship directly affects India, creating significant obstacles to regional peace & national security. India's security framework aspects a direct impact from the friable Afghan-Pak dynamics. Pak's strategic actions & the rise of insurgencies in Afghanistan have increased security threats, pushing India to re-examine its policies & defence strategies. (Dawn, 2022) One major crisis is the Durand Line, which Afghanistan has never officially documented, fuelling mistrust. The porous border has also allowed the free movement of insurgents, infuriating the already perilous security situation. Pak's dual role as both a partner to the US & an ally of insurgent groups has deepened regional volatility. Terrorist gps with roots in these dynamics have consistently targeted Indian interests, both in Afghanistan & at home, intensifying India's security challenges.

Keywords. Afghanistan-Pakistan Conundrum, India's National Security, Cross-border terrorism, Durand Line, Regional stability, Taliban resurgence, Humanitarian assistance, Strategic partnerships, Economic dependencies, Scenario Building Process, Geopolitical dynamics, Energy resources, China-Pakistan Economic Corridor (CPEC), Strategic depth, Tehrik-e-Taliban Pakistan (TTP), Indian strategic interests, Border management, Regional alliances, Islamic Emirate of Afghanistan, Military engagements, Terrorist networks, Natural resources, Scenario-specific strategies, Multilateral platforms, Economic resilience initiatives, Infrastructure development.

**A QUALITATIVE STUDY TO DESCRIBE THE ROOT CAUSES OF THE SYRIAN
CRISIS (2000-TILL DATE)**

by

Col Vivek Kumar

The Syrian crisis, which erupted in 2011, is deeply rooted in a combination of political, economic, and social factors that have been brewing for decades. This dissertation highlights how political repression under Bashar al Assad, including authoritarian governance, violent crackdowns and suppression of opposition, contributed significantly to the unrest. Economic disparities, driven by failed reforms, corruption, high unemployment and the severe drought of 2006-2010, further fuelled discontent, particularly among marginalised groups and youth. Social polarisation, especially sectarian divisions between the Sunni majority and the ruling Alawite elite, exacerbated tensions.

The involvement of external actors, including the U.S., Russia, Iran, Turkey, and Saudi Arabia, transformed the internal conflict into a proxy war, making resolution increasingly difficult. The rise of extremist groups such as ISIS added another dimension of violence and instability. The research also emphasises the interconnected nature of these causes, where political repression led to economic decline, social fragmentation, and external interventions that perpetuated the crisis. The dissertation suggests that any resolution must address these root causes collectively, promoting inclusive governance, social cohesion, and economic stability. The dissertation also touches on India's foreign policy stance of non-intervention and the broader geopolitical implications of the Syrian crisis.

Keywords. Political repression, authoritarian governance, economic disparity, unemployment, corruption, social polarisation, sectarian divisions, external intervention, proxy war, radicalisation, governance failure, humanitarian crisis, geopolitical interests, foreign policy and conflict resolution.

**A QUALITATIVE STUDY TO ASSESS THE PERCEIVED CONSEQUENCES OF
TERMINATION OF GORKHA RECRUITMENT ON INDO-NEPAL RELATIONS**

By

Col Dushyant H Sonawane, SM

The research study has been able to deliberate upon the evolution of Indo-Nepal relations over the years, emphasizing the last two decades or so. The swings in relations experienced in this period have been deliberated upon. The likely effects of the latest issue of the Agnipath scheme on bilateral relations have been analysed through the study of secondary data and the evolution of primary data through interviews with experts. As both governments have taken a stand to protect their interests, the researcher has attempted to assess its effect on the People to People Connect between the two nations, which will directly affect the Indo-Nepal relations. **If the recruitment is not resumed sooner, the pro-India Nepali population will fade away, which will have strategic ramifications for India.** Considering the Northern adversary's equation with the present coalition governments, it will leave no stone unturned to exploit the situation to its advantage. This will widen the gap between India and Nepal and have long-term implications. India must undertake specific active measures to regain the strategic space in Nepal and continue a strong People-to-People connect between the two nations. The recommendations evolved from the research are resumption of Gorkha recruitment, resumption of status quo of recruitment bases, active engagement with the ESM and military diplomacy. In the Economic domain, it is recommended that trade procedures are simplified, mutually beneficial infrastructure projects are undertaken and connectivity is enhanced to boost the tourism sector.

Key Words: Ind-Nepal Relations, ESM, People-to-People Connect, Agnipath Scheme, China

**A QUALITATIVE STUDY TO ANALYSE THE USE OF UAVS BY PLA FOR
SITUATIONAL AWARENESS AND ITS EFFECT ON OWN OPERATIONS IN
EASTERN LADAKH**

By

Col Nitin S Kaldate, VSM

Unmanned aerial vehicles (UAVs) have become synonymous with modern day warfare. Consequently, the Communist Party of China (CPC) has effectively demonstrated ‘Whole of-Nation Approach’ (WONA) by robust civil-military fusion in effective employment of UAVs. PLA has always focused on optimizing on UAVs to gain an advantage in an “informatized” and “intelligitized” battlefield. The current operational environment between India & China has witnessed a notable shift, particularly with the increased utilisation of Unmanned Aerial Systems (UAS) by China especially post Galwan Conflict & due to ongoing perceived perception of LAC. The Chinese military scholars have closely watched Yemen, Libyan, Syrian, Azerbaijan-Armenian and Russia-Ukraine conflicts and have learnt the lessons to transform the employment of UAVs by PLA. WTC has incorporated these lessons in integrating the UAVs in their latest Layered Border Defence Strategy since the Eastern Ladakh standoff of 2020. Therefore, Indian Defence Forces needs to prepare for fighting a multi-domain conflict based on UAVs. This demands a much-needed recalibration to enhance own capabilities & invest in cutting-edge technologies of medium and large multi-disciplinary UAVs while simultaneously enhancing resilience against various types of UAVs used by PLA. There is inevitable need to equip forward troops with hard kill & soft kill C-UAS capability. The Russia-Ukraine war has shown that, there is a need to have indigenous production capability. There is also a need to review our current Tactics, Techniques and Procedures, and induct the latest technology to be able to fight & win on the battlefield of the future.

Keywords. Situational awareness, integrated operations, capability development, Technological asymmetry, indigenization, Multi-domain warfare

**A QUALITATIVE STUDY TO EXPLORE FEASIBILITY OF EMPLOYING WOMEN
OFFRS IN COMBAT ROLE IN INFANTRY IN INDIAN ARMY**

by

Col Ankur Sharma

The study explores the feasibility of employing women officers in combat role in Infantry in Indian Army by finding out the apprehensions of Infantry regarding women officers as well as the outlook of women officers in overcoming the peculiar challenges of Infantry. The research was able to bring out on table the exact apprehensions and challenges of women officers working in Infantry which are otherwise put under a broadbrush. Women Offrs of all service brackets and various arms and services were interacted with, which brought out the change in the aspirations of today's women officers. Practical issues and peculiar requirements of Infantry as well as the aspect that not all Women Officers are physically and mentally fit for Infantry were brought out and accepted by both male and female officers. It also came out that Infantry should make its qualitative requirements for Officers which should be same for male and female officers so that equal opportunity can be afforded to all.

Keywords : Women Officers, Women Officers in Infantry, Infantry, Combat role

**A QUALITATIVE RESEARCH TO ANALYSE THE CHALLENGES BEING FACED
BY JCO / OR OF INDIAN ARMY IN THE UTILISATION OF RESERVED
VACANCIES FOR EX-SERVICEMEN IN CAPF**

By

Col Priyank Priyadarshani

Indian Army is the second largest army in terms of manpower. To maintain a youthful profile and meet the organisational constraints of pyramidal structure, soldiers retire very early in their age vis a vis their counterparts in CAPF or other Central / State Government jobs. On an average 50000 – 60000 soldiers retire every year between the average age bracket of 39 - 46. Resettlement of these soldiers who have dedicated their prime years to service of the nation is a moral obligation of Government, Society and above all the organisation to which they belong i.e. Indian Armed Forces. Based on 1979 policy guidelines, reserved vacancies in various Central Government jobs was provisioned with the aim to provide a respectable second career to ESM while harnessing their potential and skill sets for nation building. However, reserved vacancies for ESM in various Central Government organisations especially CAPF remains largely unutilized. This research delves into a more scientific approach to generate possible answers and solutions to ‘Why’ of the problem by generating relevant themes and in the process dispelling certain assumptions / myths which act as impediment in implementation of the policy guidelines. The findings reveal that lack of understanding regarding aspirations of ESM, awareness level, impetus by parent service and present norms make the implementation of the provision challenging. There is a need for synergistic and coordinated effort by all concerned agencies to enhance the response level towards the scheme. The study recommends a focused and synergistic approach towards transition rather than resettlement through a cultural change is imperative to make the scheme successful. It is also necessary to undertake systemic changes at apex level to address the concerns of CAPF as also make the job in CAPF more lucrative. The study suggests various, small, mid and long term measures to address the challenges in utilization of reserved vacancies.

Keywords: Reserved vacancies, ESM, CAPF, Awareness level, Rank parity, second career, entrance test, preparatory training, focused approach, lateral entry, 1979 policy, skillsets. Second pension, Job near home

**A QUALITATIVE STUDY ON IDENTIFYING TOP THREE AI GOVERNANCE
NEEDS IN INDIA**

By

Col Amit Sharma

AI as a technology has arrived in India both as a transformative tech and as a disruptive tech. The dissertation delves into the need of governing this technology formally through a governmental framework, so that it can be suitably utilized for the effective governance and delivery of public deliverables and at the same time is safely deployed. The study was carried out by an extensive study of viewpoints of various stakeholders in the field of AI tech which ranges from both govt and pvt entities, global tech giants, legal players and academia. AI tech need to be harnessed in the best possible manner so that while the development of AI models is not stifled, at the same time it does not carry out disruptive changes in the life of ordinary Indians.

Some challenges to the aspect of AI governance are privacy concerns, fairness of outcome concerns, digital discriminations, security concerns incl cyber security challenges, legal challenges of accountability, data manipulations, job losses, explainability and chances of catastrophic failures of autonomous systems in selected sectors. The dissertation homed on to the top three AI governance needs by qualitative and quantitative analysis.

Keywords. AI Strategy, AI for All, Privacy, Accountability, Security, NITI AAYOG, Google research paper, Privacy, Security etc

**A QUALITATIVE STUDY OF LEADERSHIP, COLLABORATION AND
SCIENTIFIC EXCELLENCE IN MISSION CHANDRAYAAN-3**

By

Col K Viswanadham

This study explores the workings and organizational structure of ISRO as an organisation, and endeavours to understand what makes this structure so conducive to be resilient, and continue to deliver success on a regular basis for the progress of our Nation. It is an attempt to study its leadership, scientific excellence and collaborative aspects to truly understand how things work within this organization and contribute towards successful completion of its high-risk ventures and projects. In the leadership aspects, the aim is to study various exemplary aspects of inclusiveness in decision making and hand holding, which was maintained in good times as well as the tough times. Collaboration within ISRO and with various external agencies such as govt depts, academia, industry, startups and other global space agencies, makes it an evolved system of cooperation which has worked wonders. In the scientific excellence domain, ISRO's unrelenting scientific innovations and robust test and review mechanisms help in maintaining the high standards of scientific achievements. This study aims to understand ISRO as an organization and imbibe certain lessons in leadership, collaboration and scientific excellence under stringent budgetary constraints, which can help the Indian Army in the long run.

Keywords: Chandrayaan-3, Collaboration, Scientific Excellence, Leadership, ISRO

**A QUALITATIVE STUDY TO ANALYSE THE LOCAL GOVERNANCE MODELS
UNDER CHOLA EMPIRE AND DRAW RELEVANT LESSONS FOR CURRENT
LOCAL GOVERNANCE STRUCTURES : A CASE STUDY OF UTTARAMERUR
INSCRIPTION**

by

Col Ashutosh Kumar

This dissertation explores the local governance model under the Chola Empire, focusing on the Uttaramerur inscription. It examines the administrative system of the Cholas, who ruled southern India from the 9th to 13th century CE. The study highlights their decentralized governance, where village assemblies (Sabha, Ur, and Nagaram) and committees (Variyams) played a key role in decision-making. The research draws parallels between Chola governance and modern Panchayati Raj institutions, emphasizing transparency, accountability, and local participation. The dissertation analyzes historical sources, interviews experts, and identifies best practices and challenges in Chola governance. It concludes that lessons from the Cholas—such as decentralized administration, participatory decision-making, and efficient revenue collection—can strengthen contemporary governance structures. The study also underscores the need for further research and recommends integrating insights from Chola governance into public administration training and policy frameworks.

Keywords: Ur, Sabha, Nagaram, Variyam, Local governance, Chola Empire, Uttaramerur inscription, Panchayati Raj, Decentralised governance

**A QUANTITATIVE STUDY TO ANALYSE THE IMPACT OF LIFESTYLE
DISEASES IN INDIAN ARMY OFFERS ON ORGANISATIONAL EFFICIENCY**

By

Col Anuj Kumar Gupta

Lifestyle Diseases are increasingly becoming the most poignant aspect to be handled by majority of the population of the world. The situation in Indian Army is even more peculiar due to varied service conditions of location for deployment. The study investigates the impact of lifestyle diseases (LSD) among Indian Army officers on organizational efficiency. The research hypothesizes that LSD negatively affects the efficiency of the organization and seeks to establish a correlation between the two. The study is based on a quantitative research design utilizing questionnaire-based surveys to gather data. The primary and secondary data sources include responses from officers posted in high-altitude areas, operational zones and peace locations, along with literature from defence management sources. A correlational study approach was adopted, employing statistical analysis tools like SPSS to assess relationships between LSD and efficiency. Various statistical techniques such as factor analysis, hypothesis testing (T-tests, ANOVA and Chi-square tests) were employed to validate findings. A random sampling technique was used, targeting officers across different operational zones with 443 valid responses analysed. The research ensures validity and reliability through a structured approach, including pilot surveys, careful questionnaire design and confidentiality measures. Ethical considerations were observed by maintaining anonymity and ensuring unbiased data collection. The findings of the research were startling where in it was seen that the officers in middle bracket of service and age were the most vulnerable owing to their increased commitment from professional front and personal front. The organisation must take deliberate view of the same and resort ways and means to offset the dilemma for increased organisational effectiveness.

Keywords: Lifestyle Diseases, Organisational Efficiency, Correlational Study, Service Conditions, Work Life Balance, Quantitative Study.

**A QUALITATIVE STUDY TO EXPLORE USE OF AI TO ENHANCE
EFFECTIVENESS OF IFF SYSTEMS EMPLOYED IN LAND OPERATIONS**

By

Col Sumit Dhagat

The dissertation explores the application of Artificial Intelligence (AI) in enhancing Identification Friend or Foe (IFF) systems for land operations, addressing critical issues like fratricide, target misidentification, and operational inefficiencies. Modern battlefields are marked by complexity, rapid shifts, and the challenge of coordinating diverse units and systems. Current IFF systems struggle with interoperability, signal disruptions, and environmental obstacles such as urban terrain and cluttered combat zones. AI technologies, including machine learning, computer vision, and multi-sensor fusion, provide innovative solutions by improving target identification, reducing errors, and enhancing situational awareness. Predictive analytics and real-time data processing enable proactive threat mitigation and quicker decision-making. Resilience against electronic warfare is ensured through adaptive algorithms, secure processing, and dynamic geofencing. Human-centric design, robust fail-safe mechanisms, and advanced training simulations ensure ethical application and human oversight. The research advocates for AI-driven standardization across platforms, operational testing, and ethical compliance to optimize IFF's efficiency, accuracy, and reliability in dynamic, high-stakes combat environments.

Key Words: AI, IFF Systems, Fratricide, Machine Learning, Multi-Sensor Fusion, Situational Awareness, Predictive Analytics, Battlefield Resilience

**A QUALITATIVE STUDY TO ANALYSE THE EXISTING MILITARY
INTELLIGENCE STRUCTURE FOR EFFECTIVE INTELLIGENCE
INTEGRATION BETWEEN THE THREE SERVICES**

By

Col Ajay Kumar

The dissertation, "*A Qualitative Study to Analyse the Existing Military Intelligence Structure for Effective Intelligence Integration Between the Three Services*," examines the need for a unified intelligence framework within the Indian Armed Forces. Intelligence is crucial for military operations, yet current structures function in silos leading to inefficiencies in decision-making and resource utilization. The study explores key areas such as the existing organizational framework, technological integration, operational needs, inter-service coordination and human resource training. A qualitative research approach, including expert interviews and thematic analysis highlights critical gaps in intelligence-sharing mechanisms. Findings indicate bureaucratic silos; limited adoption of AI and big data and poor inter-agency collaboration hinder operational efficiency. The study emphasizes the need for intelligence restructuring particularly as military conflicts evolve with cyber threats and hybrid warfare. The study recommends establishing a unified intelligence structure, leveraging AI for real-time threat analysis, improving coordination between services and civil agencies and enhancing joint training programs. These reforms aim to improve national security, enhance strategic decision-making and optimize intelligence resources. The dissertation underscores the urgency of intelligence modernization to ensure that Indian Armed Forces remain adaptive and effective in an increasingly complex security environment.

Keywords: Military Intelligence, Integration, Indian Armed Forces, Inter-Service Coordination, Cyber Threats, AI and Big Data, Strategic Decision-Making, Bureaucratic Silos and National Security.

**A QUALITATIVE STUDY FOR CONTEMPLATING ADAPTIVE REGULATIONS
TO LEVERAGE GENERATIVE AI FOR A POSITIVE IMPACT IN THE FIELD OF
HIGHER EDUCATION IN INDIA.**

by

Col BM Cherian

Generative AI (Gen AI) has emerged as a transformative technology reshaping various sectors, particularly education. However, the benefits are accompanied by significant challenges, including ethical dilemmas, data privacy concerns, academic integrity issues, and the perpetuation of biases. Therefore regulation of the technology is inescapable. This study focuses on understanding the **regulatory dimensions** of Gen AI by examining global best practices, analysing the ethical facets such as fairness and accountability, and optimizing benefits while mitigating risks to distil a plausible model for regulation in the field of higher education in India. The research adopts a qualitative methodology, leveraging thematic analysis to identify key themes and stakeholder perspectives. A proposed layered regulatory framework is presented in this study. At the apex, a central advisory body under the Ministry of Education would oversee AI governance, supported by regional and institutional-level policies that address local needs. Additionally, it advocates for capacity building through AI literacy programs for educators and students and collaborative efforts involving academia, industry, and government to encourage indigenous AI development. The study also underscores the importance of aligning regulations with the NEP 2020, which had envisioned a technology-driven transformation in the education sector. By addressing risks such as misinformation, dependency, and unequal access, the framework aims to create a balanced environment that cultivates innovation while safeguarding the integrity and equity of the education system.

Keywords. Generative AI, AI Regulation, Higher Education, Data Privacy, Ethical AI, India, AI Bias

A QUALITATIVE STUDY ON IMPACT OF DEFENCE SPENDING ON THE LONG TERM SUSTAINABILITY OF PAKISTAN'S ECONOMIC MODEL

By

Col Rajvinder Singh

Pakistan is facing challenges on various fronts. These include combination of low growth and high inflation, which is one of the major factors leading to the perpetuation of poverty and unemployment. The soaring inflation and widespread poverty in Pakistan has sparked public discontent amidst the media reports of shortages in basic needs like food and medicine. Despite the economic strain with a \$124.5 billion foreign debt amounting to 42% of GDP, Pakistan boosts military capabilities through major arms imports and increases defence spending by 15 % in national budget. This study explores the relationship of defence spending and long term economic stability of Pakistan by examining the impact of key macroeconomic indicators such as fiscal balance, public debt and economic growth. It aims to provide the understanding of the trade off and implications of military investments for Pakistan's economic model. As per the findings of the study, the economy of Pakistan is largely dependent on aid and the disproportionate defence spending creates opportunity costs diverting resources from economic and social development sectors. Pakistan will have to execute a strategic shift towards development driven budget allocation rather than security driven to sustain its economy in long term. Pakistan should realign its economic priorities wherein it should slowly decrease defence spending and have a focussed increase of investments in social sectors of education, healthcare and infrastructure. Pakistan needs to make institutional and financial reforms to include increasing tax base and strengthen civil government. Contrary to the narrative of Pakistan military, Pakistan can achieve economic sustainability along with maintaining its narrative of national security by embracing regional harmony and economic diversification. Embracing the recommendations as given in detail in the main document Pakistan can achieve economic resilience and sustainable development.

Keywords. Defence Spending, economic model, Public opinion, Long term sustenance, Productive sectors, Pakistan Military, Defence Allocations, Foreign aid

**A QUALITATIVE STUDY TO ANALYSE THE EFFECT OF MILITARY COUP OF
2021 IN MYANMAR ON INDO-MYANMAR SECURITY COOPERATION**

By

Col Kumar Dharmveer

Myanmar, strategically located at the intersection of South Asia and Southeast Asia, holds substantial geopolitical significance for India. The bilateral relationship between India and Myanmar has historically been shaped by shared cultural ties, a substantial land border and mutual strategic interests including border security, counter-insurgency, maritime security and infrastructural connectivity projects. The military coup of February 2021, however, has significantly altered the dynamics of Indo-Myanmar security cooperation, presenting substantial challenges and uncertainties. This qualitative study explores the impact of Myanmar's 2021 military coup on security cooperation between India and Myanmar, examining its implications on regional security and bilateral strategic engagements. Using thematic analysis of structured interviews with subject matter experts and secondary data sources, the research identified critical challenges including disruption of strategic projects like the Kaladan Multimodal Transit Transport Project and India-Myanmar-Thailand Trilateral Highway, strained border management, increased insurgency activities and regional geopolitical shifts due to enhanced Chinese influence post-coup. Findings suggest that despite operational challenges and international scrutiny, India continues to pursue a cautious and pragmatic approach, emphasizing border security, counter-insurgency measures, and stability along its shared border. The study underscores the necessity for a balanced and adaptive strategy that integrates geopolitical pragmatism with democratic ideals, emphasizing India's role as a regional stabilizing force. Recommendations include recalibrating India's strategic framework to accommodate emerging security challenges, enhancing cooperation mechanisms, and strengthening diplomatic engagements to uphold regional stability and security cooperation.

Keywords: Military Coup in Myanmar, Indo-Myanmar Security Cooperation, Regional Security Dynamics, Geopolitical Pragmatism, Counter-Insurgency, Strategic Infrastructure Projects.

**A QUALITATIVE STUDY ON EFFICIENT MANAGEMENT OF ANIMAL
CARCASSES AND SLAUGHTERHOUSE BY PRODUCTS FOR PROMOTING ONE
HEALTH CONCEPT**

By

Col Bhupender Bishnoi

This dissertation explores the challenges and opportunities in the efficient management of animal carcasses and slaughterhouse by-products in India, focusing on their impact on public health, environmental sustainability, and economic viability. Recognizing the interconnectedness of human, animal, and environmental health, the study applies the One Health framework to address these challenges. The research identifies significant obstacles, including inadequate infrastructure, weak regulatory enforcement, financial constraints, lack of awareness, and limited stakeholder collaboration. Improper disposal of animal by-products contributes to zoonotic disease transmission, environmental pollution, and resource wastage. Despite existing policies like the National Livestock Policy and guidelines from the Food Safety and Standards Authority of India (FSSAI), implementation gaps persist. Through qualitative research comprising expert interviews, the study presents actionable recommendations for improving carcass and by-product management. Key solutions include strengthening infrastructure with centralized processing units, enhancing regulatory enforcement, providing financial support, and implementing sustainable technologies like rendering plants and biogas units. Additionally, the study emphasizes the importance of multi-stakeholder collaboration and capacity building through training programs. The integration of One Health principles is highlighted as a holistic approach to mitigate public health risks, reduce environmental impact, and create economic opportunities. Cross-sector partnerships among veterinarians, public health officials, policymakers, and industry stakeholders are essential for effective implementation. This research offers policymakers evidence-based recommendations to optimize the management of slaughterhouse by-products, contributing to safer public health practices, environmental conservation, and economic growth.

Keywords: One Health, Animal By-Products, Slaughterhouse Management, Zoonotic Diseases, Environmental Sustainability, Public Health, Waste Management, Veterinary Practices, Circular Economy, Stakeholder Collaboration.

**A QUALITATIVE STUDY TO ANALYSE THE CHALLENGES AND
OPPORTUNITIES IN DEVELOPMENT OF MARINE GAS TURBINES BY THE
DEFENCE INDUSTRY OF INDIA**

By

Capt (IN) CHV Sudhakar

This dissertation is intended to analyse the challenges and opportunities involved in development of Marine Gas Turbines (MGTs) by the defence industry of India. With an assured future of next 30-40 years of high dependence on Marine GTs for Main Propulsion and Power Generation of all *IN* Frigates and Destroyers, there is a need to explore development of a MGT under home grown solutions instead of relying completely on foreign OEMs. The experience and expertise garnered by the DRDO Labs/ PSUs over the last 60 years are to be leveraged and various options including collaborative R&D effort with global OEMs of MGTs need to be explored. The status-quo philosophy of relying on M/s Zorya Mashproekt, Ukraine and M/s Proletarsky Zavod, Russia for technical support including capital repairs/ major overhaul and supply of spares is not sustainable, particularly in light of the ongoing prolonged conflict between Russia and Ukraine and the associated disruptions in Supply Chain Management of GTs and their spares. This research study is significant in the prevailing geopolitical situation, particularly the Russia – Ukraine war. The war has been on since 2022 and has imposed a compulsion on us to look for alternatives. The study is also significant in the current scenario prevailing in the country wherein ‘Atma Nirbharta’ or self reliance is being given the highest impetus by the govt. As part of this initiative, the focus is not only on increasing the self reliance but also to cut down on imports drastically. From the study, it emerged that the best model to adopt for development of an existing design of MGT through a Joint Venture between a PSU/ private firm and an OEM along with ToT. Towards this, a JV with Zorya Mashproekt of Ukraine is the most pertinent way ahead since the maximum population of MGTs in Navy’s inventory is of Zorya make. Further, a similar JV is recommended between GE, USA and HAL for development of LM2500 GT indigenously. As a medium term strategy, Navy should handhold the firm like BHEL who is investing in development of indigenous design without involvement of foreign OEM. As a long term strategy, collaboration between the academia and industry must be executed on ground at various stages of development of MGT.

Keywords: Marine Gas Turbine, Indigenous Development, Design, Manufacturing, Materials, Defence Industry, Self-Reliance in Defence and Atma Nirbharta

**A QUALITATIVE PRESCRIPTIVE STUDY ON IMPROVING MILITARY
DIPLOMACY AS A TOOL FOR ENGAGING WITH RELEVANT COUNTRIES**

by

Capt (IN) M Abhisheik Ram

As “**Brand India**” continues to make rapid strides Economically, achieving major milestones in specific sectors. Indian Diplomacy in the recent times has been more assertive and definitive, indicative of our long-term strategy and thought process As the Indian Military continues a play a pivotal role in the overall architecture of the Foreign Policy and has excelled in every task assigned to it. There is a felt need that the **military diplomacy could more employed more effectively as an important tool to engage with relevant countries**. There is also a requirement to relook at the framework of the Diplomacy and employed more effectively as Military Diplomacy has grown **as an effective tool of statecraft** and is considered an inevitable reality in Indian context. While the existing Military Diplomacy frameworks across the world have been well researched, **Indian Military Diplomacy has been identified as an area with limited research focus**.

The research focussed on enabling a **prescriptive model and enabling theory**, which can be employed with relevant countries. There is also important for military hierarchy and polity to understand **that soft power alone (training, soft loans and infra building) is of limited utility, unless long term dependencies are built in the host nation**. Using Gametheory, Nash Equilibrium and Stackelberg Equilibrium, this aspect has been recommended with suitable examples. Thus, there is growing required to make the **DPSU’s and private industry to be engaged with a definitive long-term strategy, National vision, and not just profit motive**. It is important for a **whole nation approach with more assertive and proactive military diplomacy**. Thus, **task, structures and technology roadmap was laid out to ensure we leverage every opportunity with maximum payoffs is vital**. By implementing these changes, it is important that **NSCS takes the lead with DA’s to make Military diplomacy Effective and not rely on the current Efficiency Model**.

Keywords : Leverage, Vision, Game Theory, Dependencies, Effectiveness, Whole of Nation approach, Leadership

**A QUALITATIVE STUDY TO EVALUATE IMPACT OF NATIONAL LOGISTICS
POLICY IN MITIGATING LOGISTICS CHALLENGES OF INDIAN NAVY**

by

Capt (IN) Tabish M Rizvi

The dissertation examines the impact of the **National Logistics Policy (NLP)** on mitigating logistics challenges faced by the **Indian Navy**. The Indian Navy has long dealt with issues such as complex supply chains, poor industrial base, and lack of advanced technology integration, which affect operational readiness. The **National Logistics Policy (NLP)**, launched by the Government of India, aims to address these challenges by enhancing the logistics ecosystem through digital systems, infrastructure development, and human resource management. The NLP focuses on reducing logistics costs, improving efficiency, and enhancing the Logistics Performance Index (LPI). It aims to develop a resilient, integrated logistics network by addressing gaps in transportation, warehousing, and last-mile connectivity. The **PM GatiShakti National Master Plan (NMP)** supports the NLP by promoting multimodal connectivity, including the creation of logistics hubs, cargo terminals, and ports, all of which would benefit the Indian Navy's logistics operations. A key component of the NLP is the **Unified Logistics Interface Platform (ULIP)**, which integrates digital systems across ministries, allowing for faster and safer exchange of logistics documents and improved customs processes. Furthermore, the NLP emphasizes the use of modern technologies such as drones, AI, ML, and IoT for enhanced supply chain management.

The dissertation concludes that the **Indian Navy** can benefit from the NLP's infrastructure and technology integration to enhance its supply chain efficiency and operational readiness. The Navy should implement recommendations related to digital systems, technology adoption, and modern warehousing to align with the evolving logistics landscape. In summary, the National Logistics Policy presents significant opportunities for the Indian Navy to modernize its logistics infrastructure, improve efficiency, and reduce costs, ultimately enhancing its operational capacity.

Keywords: Unified Logistics Interface Platform (ULIP), GatiShakti National Master Plan (NMP), National Logistics Policy (NLP)

**A QUALITATIVE STUDY TO ANALYSE IMPACT OF DRONE RULES 2021 AND
DRONE IMPORT POLICY 2022 ON DRONE MANUFACTURING IN INDIA**

By

Gp Capt Vipin Yadav

The dissertation examines provisions of drone rules and drone import policy and their translation into actual economic progression. There existed a gap is the difference in the perception of Indian industries and policymakers about the impact of the rules and import policy. This research aims to study the impact of drone rules 2021 and drone import policy 2022 on Indian industries towards the realization of the development of a globally competitive Unmanned aircraft production ecosystem in the country. The research findings are based on the primary data gathered through interviews with Subject Matter Experts from the Indian drone sector. To ensure data coverage from all stakeholders in the Indian drone sector, an optimal mixture of drone manufacturers, components manufacturers, anti-drone systems, and R&D firms were selected as interviewees. An inductive logic has been employed to arrive at the theory which is supported by the themes determined through thematic analysis of the transcriptions. The findings of the research suggest that there is immense growth potential in the Indian drone sector, but certain unforeseen challenges need to be addressed urgently to fully realize this potential. With rapid increase in Quick commerce in India market, Drones will surely see a new broad horizon. Establishment of a regulatory framework by government and security agencies for drone sector is clear, consistent, and comprehensive. Drone rules, Drone import policy and PLI for drone sector by the Government is aimed to promote drone manufacturing and accelerate its adoption in multiple sectors and spaces. The rules and scheme, so far, has had significant positive impact in promoting drone manufacturing in the country and has assisted multitude of MSMEs to survive and grow, which has been established beyond doubt during the research. However, to become the drone manufacturing hub of the globe by 2030, India should achieve self-reliant in drone component technology as well. The research also revealed that the present Technological Readiness Level (TRL) of the Indian drone industries are still to travel a long distance in realising the dream as envisaged by GoI for drone sector by 2030 and for making dream of Viksit Bharat 2047 a reality.

Keywords. Drone, Drone import policy, Drone rules.

**QUANTITATIVE STUDY TO ANALYSE THE EFFECTIVENESS OF JOINT
LOGISTICS NODE SERVICES IN INDIA'S EASTERN AREA OF RESPONSIBILITY**

By

Gp Capt Alap I Shah

Joint Logistics is a buzzword in the Armed Forces across the nations. Importance of the jointness in Logistics has been highlighted during conflicts and lessons learned have inspired nations to adapt to the concept. Our nation has implemented Joint Logistics Nodes in more pragmatic way to benefit all three services from its accrued benefits in peace and war. This article is a step toward a quantitative evaluation of user satisfaction by vis-à-vis services offered by the Joint Logistics Node in the Eastern Area of Responsibility. Data analysis revealed **higher user satisfaction during peacetime**, however, it highlighted the **need for end-to-end integration of the Joint Logistics Node services**. The **positive correlation of User Satisfaction with Integration** is also a key aspect derived during data analysis. This points at the emerging need for joint structures with cross-postings and joint training to effectively strengthen the Jointness and inter-service knowledge. The shared responsibility of stakeholders and top-down approach through doctrinal reforms will pave the way for the successful exploitation of the Joint Logistics Node. Implementation of this changes will pave way for smooth operationalisation of future Joint Logistics Node, strengthening of existing node, visibility of assets/ services and their purposeful sustenance in peace / war. Joint Logistics is one key uniting factor towards theaterisation exploiting strength of each service of Indian Armed Forces.

Keywords: Joint Logistics, Supply Chain Management, User Satisfaction, end-to-end integration, cross-posting, joint training, doctrinal reforms.

**A QUALITATIVE STUDY TO ANALYSE CULTURAL DIPLOMACY DURING THE
MAURYAN EMPIRE AND ITS RELEVANCE IN CONTEMPORARY INDIAN
FOREIGN POLICY**

By

Gp Capt Poornendu Prakash

The Mauryan Empire (321–185 BCE) represents a pivotal era in Indian history, distinguished by sophisticated statecraft, economic prosperity and an early model of cultural diplomacy. Influenced by Kautilya's Arthashastra and Ashoka's Dhamma, the Mauryan rulers used trade, alliances and ethical governance to extend their influence beyond their immediate geopolitical boundaries. Ashoka's emphasis on moral governance, non-violence and welfare finds resonance in India's contemporary global outreach efforts, including International Yoga Day, the promotion of Ayurveda, Vaccine Maitri and Buddhist diplomacy. Kautilya's strategic doctrines, including the Mandala Theory, offer valuable insights into balancing ethical statecraft with pragmatic foreign policy. India's policies, such as Neighbourhood First and Act East, reflect the Mauryan approach to regional cooperation, yet challenges persist in sustaining long-term engagement, strengthening infrastructure projects and countering rival geopolitical influences.

The research underscores the need for India to adopt a Smart Power strategy that integrates cultural diplomacy with economic and military capabilities. While India's soft power is globally recognised, its impact requires structured policies, institutional backing and greater investment. The study identifies key gaps, including the need for a comprehensive soft power strategy, better regional cooperation, enhanced budgetary allocations and a stronger digital presence. It also highlights the underutilised potential of the Indian diaspora as cultural ambassadors and the necessity of a cohesive narrative to amplify India's influence on the global stage. Lessons from the Mauryan model suggest that a fusion of ethical governance with realpolitik, strategic alignments and a well-defined diplomatic vision can strengthen India's geopolitical standing. Refining its soft power framework, integrating ethical governance with strategic partnerships and leveraging digital diplomacy will enable India to position itself as a responsible and influential global actor. By blending historical wisdom with contemporary imperatives, India can reinforce its identity as a leader in ethical and pragmatic diplomacy.

Keywords: Soft Power, Mauryan Diplomacy, Cultural Outreach, Kautilya's Arthashastra, Ashoka's Dhamma, Strategic Pragmatism, Smart Power, Foreign Policy, Regional Stability.

**A QUALITATIVE STUDY TO ANALYSE THE EFFICACY OF CSD IN ARMED
FORCES TO OVERCOME ITS FINANCIAL CHALLENGES**

By

Gp Capt KB Sharma

Canteen Stores Department is grappling with numerous challenges and is unable to meet the demands of Armed Forces personnel. Unit Run Canteens get stocked-out, within days of stock collection, forcing Armed Forces Personnel to purchase goods from civil markets at higher costs and greater inconvenience. Over the years, CSD has been trying to tide over this issue by incremental improvements in its operations. This myopic approach has given little dividends as the deeper structural and financial challenges have been ignored. Reliable and efficient CSD is essential for the defence ecosystem as it directly impacts the fund availability for welfare activities and growth of other NPFs. This article delves into CSD's underlying structures, to identify the core issues and challenges at hand. **Financial Restructuring and Strategic Modernisation Model**, has been recommended as a permanent solution. This involves financial restructuring, integration into the national e-commerce ecosystem, and technological modernisation as essential transformative reforms for CSD. By implementing these changes, CSD can be reimagined as a contemporary supply chain organisation, fulfilling its commitment to the welfare of defence personnel and meeting the evolving aspirations of its clientele.

Keywords: Canteen Stores Department, Unit Run Canteen, Financial Restructuring, Supply Chain Management, Strategic Reforms.

**A QUANTITATIVE STUDY TO ANALYSE THE PERSPECTIVE ON SPIRITUAL
HEALTH AND USE OF ALCOHOL AMONG INDIAN ARMED FORCES OFFICERS**

By

Gp Capt Sumeet Lakhvir

This study explores the relationship between Spiritual Health and the Use of Alcohol among officers in the Indian Armed Forces. It highlights the prevalent use of alcohol as a coping mechanism, which, over time, can lead to addiction, negatively impacting an officer's physical, mental, emotional health, and subsequently affecting the organization. The research examines officer's perceptions of spiritual health and alcohol use through a quantitative methodology, using surveys and statistical tools for data analysis. The findings reveal that while spiritual health perceptions are generally high, alcohol use among officers is low, with no significant demographic differences in usage. Interestingly, a weak positive correlation between spiritual health and alcohol use was observed, suggesting that other factors, like lack of social support and awareness, may influence alcohol consumption. The study also notes the potential of Alcoholics Anonymous (AA) as a rehabilitation tool, promoting spiritual growth and providing a supportive community driven approach to recovery. The research concludes that fostering a culture that supports spiritual health and offers AA based initiatives can prevent the initiation of alcohol use and aid in the recovery of affected individuals, thereby improving the overall resilience, health, and cohesion within the Indian Armed Forces.

Keywords. Spiritual Health, Use of Alcohol, Indian Armed Forces, Alcoholics Anonymous, Coping Mechanism, Social Support.

A QUALITATIVE AND DESCRIPTIVE ANALYSIS OF THE GENESIS OF MIDDLE-CLASS RAGE AGAINST MILITARY HEGEMONY IN PAKISTAN

By

Col Abhay Raj Singh Mann

The Pakistani middle class, historically viewed as a stabilizing force, is increasingly disillusioned with military hegemony due to economic hardships, political exclusion, and systemic corruption. The military's extensive control over governance and commercial enterprises has led to monopolistic economic practices, exacerbating income inequality, inflation, and unemployment. The suppression of democratic institutions and media further alienates the middle class, fuelling frustration and dissent. This research, employing qualitative thematic and content analysis, explores the socio-economic and political factors behind this growing discontent. Findings indicate that the middle class perceives the military as a self-serving entity rather than a national guardian, leading to rising unrest and potential instability. The study highlights the role of digital platforms in amplifying grievances and mobilizing movements. It provides insights into the implications of middle-class rage for Pakistan's democratic future and regional stability, with recommendations for policymakers to address governance and economic inequities to mitigate further unrest.

Keywords: Military Hegemony, Middle-Class Discontent, Economic Inequality, Political Exclusion, Civil-Military Relations, Pakistan.

**A QUALITATIVE STUDY ON DEVELOPING NON-COMMISSIONED OFFICERS
AS SCHOLAR WARRIORS FOR CONTEMPORARY AND FUTURE CONFLICTS**

By

Col Varun Rai

The warfare is undergoing a radical change both in its character and design. Technology has always been in forefront of war fighting, however in last decade, it has rapidly advanced which is visible in East Asia and Ukraine-Russia war. In this time of uncertainty, the myth of **short and swift** wars has been shattered. The future conflicts are likely to be **uncertain, technology driven and longer in duration**. In such a conflict our junior leadership will be key to victory. Officers have performed exceptionally in previous battles, however, the same cannot be proved for the NCOs. Today technology, uncertainty and duration of conflict will put the NCO to test and they are not ready. During the study it was observed that there is a **systemic problem** in dealing with capability building of NCO which ranges from poor intake level of recruits to underconfident hierarchy which does not trust NCO for leading independent operations. It is evident that the **NCO lack technical abilities, confidence, leadership skills, understanding of modern battles and critical thinking**. The present system of training and capability building requires urgent revision. Agnipath scheme can be exploited to improve the stock. Better **Professional Military Education** is the way forward to deal with the uncertain challenges, at the same time the **training structures** also need to undergo changes to incorporate technology and above all the military hierarchy need make effort to empower NCO to play active role in future wars.

Keywords: Non-Commissioned Officer (NCO), Professional Military Training (PME), leadership and training.

**A QUALITATIVE STUDY TO DESCRIBE THE CONTENTIOUS ISSUES BETWEEN
AFGHANISTAN AND PAKISTAN POST US WITHDRAWAL FROM AFGHANISTAN
AND SCOPE FOR INDIA TO LEVERAGE**

by

Col Mithilesh Kumar, SM

The bilateral relationship between Afghanistan and Pakistan has been marked by tension, territorial disputes, and geopolitical complexities. After its independence from the British Empire in 1947, Islamabad inherited territorial disputes with Kabul and New Delhi. Two of the disagreements with Afghanistan – over the Durand Line demarcation and over Pashtunistan – drove Kabul to oppose Pakistan’s membership of the United Nations. Pakistan’s desire to re-establish good relations with the United States provided Pakistan with a much-needed opportunity to collaborate with US in a decade-long proxy war against the Soviets in Afghanistan. Since 2001, Pakistan’s role in the stability of Afghanistan has been identified as more pronounced and crucial than ever because of its historic links with the Taliban, but much of its role in peace dialogues is overshadowed by mistrust at the state level between Afghanistan and Pakistan. The bilateral dynamics reflect a typical case of mutual mistrust. A range of factors have contributed to the trust deficit between Afghanistan and Pakistan. Historically, there were conflicts over the demarcation of Durand Line and over Pashtunistan, but contemporary affairs have been more affected by allegations of cross-border terrorism, Refugee Issue and numerous attacks by TTPs in Pakistani soil. This research delves into background of understanding the contentious issues between Afghanistan and Pakistan. The study has laid emphasis on describing the issues of AF-PAK post US withdrawal from Afghanistan and also includes areas for leverage for India. The research identifies that Key contentious issues between the two nations include border disputes, terrorism and extremism, water disputes, and economic competition. India, as a major regional player, has the potential to leverage the situation by adopting a strategic approach. Economic engagement, regional connectivity, diplomatic mediation, and counter-terrorism cooperation are key avenues for India's influence. By fostering economic ties, promoting connectivity initiatives, facilitating dialogue, and addressing the shared threat of terrorism, India can contribute to peace, stability, and cooperation in the region. India's ability to leverage the situation is contingent on its strategic approach and the evolving dynamics between Afghanistan and Pakistan. However, by adopting a balanced and constructive approach, India can play a pivotal role in addressing the challenges facing the region and shaping its future.

Keywords: Geopolitical Contentions, Economic Impact, Humanitarian Concerns, Strategic Shifts, India’s Opportunities.

**A QUALITATIVE STUDY TO ASSESS EFFECTIVENESS OF STRATEGIC
LEADERSHIP TRAINING IN INDIAN ARMY**

By

Col Manish Som

With the evolving nature of warfare and the increasing emphasis on joint operations, the Indian Army has recognised the need for a strategic leadership development framework that not only focuses on conventional operations but also incorporates strategic foresight. Therefore, there is a need for Indian Army to streamline a comprehensive training framework for higher leadership. The research sample constituted of senior officers of the Indian Army, NDC officers, Instructors posted with Category A Establishments and stakeholders in formulation of training philosophy. The analysis of the interviews of SMEs and Secondary data has concluded that there is a need to streamline and formalise the strategic leadership training in Indian Army focussing on essential traits and competencies required for the future battlefield. To summarise, Strategic Leadership training is required to be imparted to all officers from Colonel rank and above irrespective of their promotion in the organisation in a gradual manner.

Keywords: Strategic Military Leadership, Leadership Training, Professional Military Education, Future Operational Environment.

A QUALITATIVE STUDY TO ANALYSE THE IMPACT OF REGIONAL TRADE ROUTES ON THE FUTURE OF INDO-AFGHANISTAN ECONOMIC RELATIONS

by

Col Lalit Chandra Kandpal

The Chabahar Port and the Zaranj-Delaram highway represent vital infrastructure connecting India and Afghanistan. The study explores the challenges and opportunities presented by these routes, particularly in the face of shifting geopolitical realities. The study has used the qualitative framework to identify challenges and opportunities available to India and provides recommendation in order to leverage/mitigate the same to safeguard India's national interests in the region.

Keywords: Regional trade, Indo-Afghan economic ties, Chabahar Port, Zaranj-Delaram corridor, energy security, regional integration, spillover theory.

**A QUALITATIVE STUDY TO DESCRIBE THE IMPACT OF EXPANSION OF
BRICS ON INDIA'S REGIONAL AND GLOBAL STRATEGIC INTERESTS**

By

Col Brajendra Singh Bora

The expansion of **BRICS into BRICS+** marks a significant shift in global multilateralism, introducing both opportunities and challenges for India's regional and global strategic interests. While an expanded BRICS offers India avenues for economic diversification, trade partnerships and technological collaboration, it also brings concerns over China's growing influence within the bloc and the ideological divergence among new members. This research critically examines how BRICS expansion affects **India's diplomatic engagements, economic policies and strategic autonomy**. Through qualitative analysis the study explores India's role as a bridge between Global South nations and major world powers while recommending strategies to enhance India's influence within BRICS+. Key focus areas include institutional reforms, **economic realignment** and **balancing geopolitical alignments** to protect **India's long-term strategic interests** in a multipolar world.

Keywords. BRICS+, India's Strategic Autonomy, Geopolitical Alignments, Economic Integration, Institutional Reforms, Global South Leadership.

**A QUALITATIVE STUDY ON COMPONENTS IN PRE-COMMISSION TRG
ACADEMIES(PCTAs) DEDICATED TO DEVELOP MORALS AND ETHICS
AMONG CADETS**

By

Col Vivek Anand

Pre-Commission Training Academies (PCTAs) such as NDA, IMA and OTA play a pivotal role in shaping the moral and ethical foundation of future military leaders. While these academies emphasize discipline, leadership and operational preparedness, the effectiveness of their ethical training remains underexplored. This research examines the structured and informal components of moral and ethical education in PCTAs, including case-based learning, leadership role-playing and instructor influence. The study identifies key gaps, such as insufficient adaptation to contemporary ethical dilemmas involving cybersecurity, cross-cultural interactions and technological warfare. A qualitative approach, incorporating interviews with subject matter experts, instructors and cadets, along with a review of training curricula, reveals the strengths and shortcomings of existing ethical training frameworks. The research highlights the need for curriculum enhancements, instructor development programs and the integration of emerging technologies like AI-driven simulations and virtual reality-based ethical training scenarios. By implementing these recommendations, PCTAs can ensure cadets develop a strong ethical foundation, equipping them to navigate the complexities of modern military leadership with integrity, accountability and moral resilience.

Keywords: Military Ethics, Moral Values, Leadership Development, Ethical Decision-Making, Experiential Learning, Cross-Cultural Leadership, Professional Military Education, Virtual Reality Training, Integrity and Accountability.

**A QUALITATIVE STUDY TO CARRY OUT SWOT ANALYSIS OF EVOLVING
RELATIONS BETWEEN INDIA AND ASEAN TO PROMOTE REGIONAL PEACE
AND STABILITY**

By

Col Tushar P Jadhav

India and ASEAN share deep-rooted cultural, economic, and strategic ties that have evolved into a Comprehensive Strategic Partnership. The shifting geopolitical landscape of the Indo-Pacific, marked by China's growing influence and emerging security threats, underscores the need for enhanced India-ASEAN collaboration in Defense, maritime, and economic domains. This study employs a SWOT analysis to examine the strengths, weaknesses, opportunities, and threats influencing these relations. The findings aim to formulate strategic recommendations to strengthen India-ASEAN ties, ensuring long-term regional peace and stability. This research adopted a qualitative approach, integrating inputs from Subject Matter Experts (SMEs), literature reviews, and SWOT analysis. The major strengths identified are **Strategic Convergence** (shared interests in maritime security and regional stability), **Defense and Maritime Cooperation** (Joint exercises (SIMBEX, MALABAR, CORPAT) and platforms like ADMM-Plus), **Soft Power and Cultural Ties** and **Non-Traditional Security Cooperation** in cybersecurity, disaster response, and counterterrorism. The Major weaknesses identified are **Economic Disparities**, **Strategic Ambiguity** (ASEAN's concerns over India's security commitment), **Defense Capabilities** (Limited Indian military projection in the South China Sea) and **Bureaucratic and Institutional Challenges**. Similarly, Major Opportunities emerged are scope for **Enhanced Defense Collaboration** (Capacity-building programs, technology transfer, and joint exercises), **Economic Integration**, **Soft Power Expansion** and **Multilateral Engagement** to position India as a neutral force amidst great power rivalries. While few threats emerged are growing **China's Influence in the region**, **threat to regional security due to Great Power Rivalries**, **ASEAN's Divergent priorities on China-related policies** and **India's Domestic Constraints** (other External and Internal security issues limiting engagement capabilities). Strengthening existing Regional Security Mechanisms and Defence cooperation by building each other's R&D and defence production capabilities, Economic and supply chain Diversification, Strategic Engagement with other regional/Global Players, Enhancing regional connectivity through Infrastructure Development and Institutional Reforms should be the way forward to strengthen India-ASEAN ties and ensure long-term regional peace and stability.

Keywords: India-ASEAN Relations, SWOT Analysis, Indo-Pacific Strategy, Regional Security, Economic Integration, Maritime Security, Strategic Cooperation.

**A QUALITATIVE STUDY ON INDIA'S MARITIME SECURITY STRATEGY AND
ITS IMPLICATION IN NEAR REGION BY 2047**

By

Col Varun Sharma

India's maritime security strategy is central to its national defense and foreign policy, especially as it approaches its centenary in 2047. The Indian Ocean Region (IOR) is a critical geopolitical and economic hub, where India faces increasing challenges from China's naval expansion, regional instability, and evolving non-traditional threats such as piracy and climate change. The research examines India's efforts to enhance maritime security through naval modernization, strategic partnerships (QUAD, IORA), and economic initiatives like SAGAR and the blue economy. It highlights India's strengths in geographical positioning and naval capabilities while addressing budgetary constraints and strategic vulnerabilities. The study utilizes qualitative analysis, including expert interviews and thematic assessments, to propose policy recommendations. Strengthening regional alliances, advancing technology, and enhancing maritime infrastructure are key to ensuring India's role as a net security provider in the IOR by 2047.

Keywords: Indian Ocean Region, Maritime Security, China's Naval Expansion, Regional Cooperation, Blue Economy, Strategic Alliances, Naval Modernization.

**A QUALITATIVE STUDY ON DESIGN THINKING MODELS FOR PRESCRIBING
MEASURES TO ENHANCE EFFECTIVENESS OF TECHNOLOGY ABSORPTION
PROCESS IN ARMY DESIGN BUREAU**

By

Col Gagan Singh

Enhancing effectiveness in the technology absorption process in Indian Army is critical to defence modernisation and operational readiness in an emerging hybrid operating environment. This qualitative dissertation attempts to employ design thinking framework to examine the challenges and recommend measures to enhance the effectiveness of technology absorption in Indian Army. It explores the disconnect between policy goals and realities of implementation in the process, highlighting the issues ranging from procedural bottlenecks, HR issues to procurement mindset for R&D and recommends pragmatic acceptable solutions to enhance effectiveness of entire process. The study pioneers the application of design thinking in the Indian Army and offers a scalable model for applying design thinking across diverse military domains, including operations, logistics, training and human resource management.

Key Words. Design Thinking, Soft Systems Methodology, Application, Effectiveness & Technology Absorption

**A QUALITATIVE STUDY TO EXAMINE THE NEED FOR INDIA TO DEVELOP AN
EXPEDITIONARY CAPABILITY**

By

Col Shakti K Mukund

The geopolitical landscape of the 21st century is characterised by rapid shifts in power dynamics, emerging threats, and evolving alliances. In this context, India's strategic interests extend far beyond its immediate neighbourhood, necessitating a re-evaluation of its military posture and capabilities. In global military strategy discourse, expeditionary capability is defined as the ability to deploy and sustain military forces rapidly and effectively in distant theatres of operations. However, in the Indian context, developing such a capability is linked to its national security interests and status as a preferred security partner in the Indian Ocean region.(Subramaniam, 2023). This dissertation explores whether India requires an expeditionary capability and what such a capability would entail considering the nation's unique strategic imperatives and operational environment. Additionally, provided the need does exist, it assesses the contours of such a bespoke capability for the Indian Armed forces and whether India's military capability markers align with it. In doing so, provides an insight into India's trajectory for transitioning into a major power in a multipolar world.

Keywords. Strategic requirements, operational requirements, capability development, bespoke expeditionary capability, power projection, preferred security partner, benign applications.

**A QUALITATIVE STUDY ON EFFECTIVE INFORMATION SHARING
MECHANISMS FOR THE INDIAN ARMED FORCES**

By

Col Mayank Gautam

The rapidly evolving cyber domain has significantly transformed the status of national security. It has necessitated seamless collaboration amongst civil and military agencies. In an ever-evolving digital landscape, the Indian Armed Forces have become vulnerable. They are facing myriad varieties of cyber threats at a very high velocity. It ranges from state-sponsored attacks to intrusions from non-state actors. The need for a synergized civil-military approach to counter these threats is of paramount importance. Especially when civilian agencies possess advanced technical expertise, vast data repositories, and sectoral as well as cross-sectoral insights. Effectiveness in information-sharing is crucial. It is the only way to respond against active cyber adversaries. Thereby, ensuring national defense resilience and cyber sovereignty. This research explores the effectiveness of information which is exchanged between civilian and military agencies within the cyber domain. Civilian agencies contribute critical cyber intelligence, cyber threat indicators, vulnerability analyses, malware signatures, and early warning alerts. They also, provide advisories based on the threat environment. It is then reciprocated well by the military, by providing operational intelligence, incident response strategies, and domain-specific security protocols. The effectiveness depends upon quality, accuracy, timeliness, and the context.

Keywords: Cyber Security, Information Sharing, Risk Management, Critical Infrastructure, Cyber Intelligence, Defence Cyber Agency, Computer Emergency Response Team

**QUALITATIVE STUDY TO IDENTIFY ORGANISATIONAL EFFECTIVENESS OF
DGDE**

By

Col Prashant Singh

The Ministry of Defence (MoD) is India's largest real estate holder, managing 17.31 lakh acres, with the Armed Forces and the Directorate General Defence Estates (DGDE) overseeing this vast portfolio. A critical aspect of this responsibility involves managing Old Grant Bungalows (OGBs) in cantonments, properties originally allocated for military use but now plagued by issues such as unauthorized occupation, illegal constructions, and rentals beyond lease terms. These problems stem from a combination of inadequate domain expertise, lack of accountability, rigid tenure systems, and organizational shortcomings within the Armed Forces and DGDE.

This research focuses on supervisory and management practices for OGBs, aiming to address intrinsic challenges within the Armed Forces while acknowledging the joint role of DGDE under the MoD. The study explores the roles, perceptions, and challenges of supervisory committees, including Local Military Authorities (LMAs) and Defence Estate Officers (DEOs), in ensuring compliance and curbing unauthorized activities. Adopting a qualitative, inductive approach rooted in constructivism and interpretivism, the research draws on interviews with subject matter experts (SMEs) and thematic analysis of policies from DGDE and other sources.

The scope centres on day-to-day operations, inspection protocols, enforcement efforts, and the structural barriers faced by supervisory committees, capturing their narratives to reveal operational dynamics and compliance challenges. Findings reveal that while regular inspections and pre-approval processes for renovations exist, they are hampered by resource shortages, rigid protocols, and poor inter-departmental communication.

The study proposes recommendations including technology-driven monitoring, flexible inspection protocols, stricter enforcement, and improved communication channels to enhance OGB management. This research underscores the urgency of addressing systemic and operational deficiencies to safeguard military resources, ensure regulatory compliance, and optimize land use. By amplifying the voices of those managing OGBs, it offers actionable insights for policymakers and administrators to mitigate misuse and strengthen oversight in India's defence estates.

Keywords: Ministry of Defence (MoD), Directorate General Defence Estates (DGDE), Old Grant Bungalows, unauthorized occupation, illegal constructions, Local Military Authorities (LMAs), day-to-day operations, inspection protocols, supervisory committees, technology-driven monitoring

**A QUANTITATIVE STUDY TO ANALYSE THE CAPABILITY OF RELIGIOUS
TEACHER JCOS IN DISCHARGING FUNCTION OF PSYCHOLOGICAL
COUNSELLOR IN IA UNITS AND EFFECTIVENESS OF PSYCHOLOGICAL
COUNSELLING**

By

Col Rahul Kanwar

This dissertation explores the role of RT JCOs as psychological counsellors within the Indian Army. The study aims to assess whether RT JCOs can effectively perform the duties of psychological counsellors and if this role positively impacts the psychological wellbeing of troops.

The research highlights that the Indian Army faces numerous psychological issues, including suicidal tendencies and marital discords, stemming from societal changes and technological advancements. RT JCOs are trusted by troops and hence can play a pivotal role in addressing these issues. However, their capability to serve as psychological counsellors depends on factors like education, motivation, and emotional intelligence.

The study uses a quantitative approach, employing surveys and statistical analysis to evaluate the capability of RT JCOs and the effectiveness of psychological counselling. The findings indicate that RT JCOs are capable of performing role of psychological counsellors, but there is insufficient evidence to conclude that their counselling significantly improves troops wellbeing. The study suggests enhancing the capabilities of RT JCOs through institutional means to boost psychological wellbeing of troops and operational efficiency of Indian Army units.

Keywords: Religious Teacher JCOs, Psychological Counselling, Alternate approach to Mental Health Treatment in Indian Army, Psychological issues in Indian Army, RT JCOs as Counsellors, Spirituality in Psychological Treatment of combatants.

**A QUALITATIVE STUDY ON THIRD-PARTY LOGISTICS FOR SUPPLY CHAIN
MANAGEMENT IN THE INDIAN ARMY**

By

Col Aman Taneja

This study explores the implementation and optimization of third-party logistics (3PL) in the supply chain management of the Indian Army. The research identifies operational inefficiencies, examines the potential of 3PL integration, and discusses its strategic advantages. By employing qualitative methods, the study captures insights from logistics experts and Army officials to provide actionable recommendations. Key findings highlight cost efficiency, improved operational readiness, and enhanced logistics capabilities as primary benefits, while challenges include organizational resistance and infrastructural constraints. This paper also outlines a roadmap for effective 3PL adoption in the unique context of military supply chains.

Keywords. Third-Party Logistics, Indian Army, Supply Chain Management, Operational Efficiency, Strategic Integration, Technology Integration, Military Logistics and *Atmanirbhar Bharat*.

**A QUALITATIVE STUDY TO CARRY OUT COMPARATIVE ANALYSIS OF
FRAMEWORK OF NATION-STATE VS CIVILIZATION-STATE**

By

Col Rohan Seth

The dissertation examines the fundamental differences between the nation-state and civilization-state models, analysing their historical evolution, governance structures, cultural identity, and geopolitical implications. The nation-state model, rooted in the Treaty of Westphalia (1648), emphasizes territorial sovereignty, centralized governance, and legal structures, making it the dominant model in global politics. In contrast, the civilization-state derives legitimacy from its historical continuity, cultural values, and philosophical traditions, often incorporating decentralized governance and soft power diplomacy.

The study employs a qualitative research approach, using inductive reasoning, constructivist ontology, and interpretivist epistemology. A comparative analysis is conducted between India (a civilization-state) and Germany (a nation-state) to assess the viability of these models in the contemporary world.

The findings highlight that while nation-states ensure political stability through centralized control and legal sovereignty, civilization-states leverage deep-rooted cultural cohesion and historical legitimacy to maintain unity. The study argues that as global power shifts toward multipolarity, civilization-states like India and China are redefining international governance norms.

Key challenges include the lack of a direct comparative framework, limited research on supranational organizations, and the need to explore hybrid governance models integrating aspects of both frameworks. The study recommends that India should further leverage its civilization-state identity in shaping domestic governance and foreign policy.

Keywords: Nation-State, Civilization-State, Geopolitics, Cultural Identity, Soft Power Diplomacy.

A QUALITATIVE DESCRIPTIVE STUDY ON CHINA-MALDIVES RELATIONS
AND ITS IMPACT ON REGIONAL SECURITY

by

Col Prabhjyot Singh Tur

China's deepening footprint in the Maldives has profound implications for regional security particularly in the Indian Ocean Region (IOR). While historically aligned with India, the Maldives' strategic shift towards China evident through extensive infrastructure projects, economic investments, and potential military collaborations has raised concerns over **maritime security, geopolitical stability, and the balance of power in the region**. This research critically examines the military and strategic consequences of China's increasing presence in the Maldives and its broader impact on India's security posture in the IOR.

Through **qualitative thematic analysis** of expert interviews and secondary data, the study identifies key areas of concern, brings out existing and envisaged asymmetry in naval assets in comparison to China including **dual-use infrastructure developments**, expanded Chinese surveillance capabilities, and the risk of military encirclement. The research highlights the need for India to **accelerate its maritime domain awareness, enhance tri-service integration**, and adopt a **multi-pronged counter-strategy** combining **diplomatic engagement, economic leverage, and strategic force projection**. Additionally, **indigenization** of defence production and strengthening naval assets through **whole of nation approach, self-reliant shipbuilding and technology advancements** emerge as critical imperatives.

The study underscores that India must proactively **secure its maritime interests through forward deployments, intelligence-driven naval strategy, and collaborative security frameworks**. Strengthening partnerships with **QUAD nations and regional allies** fostering **economic influence in the Maldives**, and ensuring a **robust deterrence mechanism against Chinese naval expansion** are essential for maintaining strategic equilibrium in the IOR.

Keywords: Whole of Nation approach, Maritime Security, Dual-Use Infrastructure, Tri-Service Integration, Indigenisation, Strategic Countermeasures.

**A QUALITATIVE STUDY TO DESCRIBE NEGOTIATION LESSONS FROM
MAHABHARAT THROUGH ANALYSIS OF KEY EPISODES TO DERIVE
INSIGHTS**

By

Captain Manu Paliwal

This dissertation explores negotiation strategies from the Mahabharat, analysing key episodes to derive insights relevant to modern diplomacy. Negotiation is a ubiquitous practice that shapes outcomes in various domains, including political, economic, and social spheres. The Mahabharat offers rich lessons in negotiation, both from successful and unsuccessful attempts. The study focuses on themes such as power asymmetry, ego-driven decisions, the role of dharma, emotional appeals, and relational factors. Krishna's peace mission illustrates the effective use of moral power to counter material imbalances, highlighting ethical leadership. Ego-driven decisions, like Duryodhana's refusal to compromise, are shown to obstruct rational negotiations. Dharma is depicted as both guiding and constraining, demonstrating its adaptability in balancing ethics with strategic needs. Emotional appeals and relationships significantly impact negotiation outcomes, providing insights for trust-building initiatives. The study identifies trust deficits, competing objectives, and coercive tactics as reasons for negotiation failures. It recommends integrating Mahabharat's negotiation lessons into officer training to enhance diplomatic skills, though it is limited by focusing exclusively on the Mahabharat.

Keywords: Mahabharat, Negotiation, Diplomacy, Dharma, Power Asymmetry, Strategic Adaptability.

**A QUALITATIVE STUDY TO DESCRIBE GROWING MARITIME POWER OF
JAPAN TOWARDS ENSURING REGIONAL STABILITY IN SOUTH CHINA SEA**

By

Capt (IN) PK Pandey

Japan's maritime strategy has evolved from a post-WWII pacifist stance to an assertive approach in response to regional geopolitical tensions. This study examines Japan's naval modernization, strategic alliances, and its impact on regional stability, particularly in the South China Sea. The shift is driven by China's assertiveness, North Korea's nuclear ambitions, and the reinterpretation of Article 9 of the Japanese Constitution, allowing for collective self-defense. Strengthened partnerships with the U.S., QUAD, and ASEAN nations have reinforced Japan's maritime deterrence. The Japan Maritime Self-Defense Force (JMSDF) has expanded its capabilities, integrating advanced submarines, destroyers, and aircraft carriers while enhancing intelligence-sharing and cyber defence. The economic significance of securing sea lanes, particularly energy trade routes, has further propelled Japan's naval expansion. While this shift promotes a rules-based maritime order, it also raises tensions with regional actors, necessitating a balance between military build-up and diplomatic engagement. The study highlights the need for crisis management mechanisms, multilateral security cooperation, and continued investment in emerging defence technologies to ensure strategic stability. By adopting a comprehensive approach, Japan can reinforce its role as a regional security provider without escalating conflicts.

Keywords: Japan Maritime Self-Defense Force, QUAD, U.S.-Japan Alliance, Article 9, Indo-Pacific Security, Naval Modernization, Maritime Deterrence, Freedom of Navigation.

**A QUANTITATIVE STUDY TO EVALUATE THE IMPLEMENTATION OF 3D
PRINTING TECHNOLOGY IN THE INDIAN ARMED FORCES TOWARDS
SUSTENANCE OF CRITICAL AEROSPACE INVENTORY**

by

Capt (IN) K Pradeep

Additive Manufacturing or 3D Printing is considered to be a new industrial revolution leading to less wastage, short lead times and improved supply chain efficiency. It has been observed on some occasions, that certain spares are not available due to stoppage of production by the original manufacturer, import restrictions or due to procurement delays owing to excessive cost being levied for the item. Under such situations, 3D printing can be effectively used where the minimum order quantities are smaller with faster production time. The present study focusses on the implementation of 3D printing for effective management and sustenance of critical/obsolete aerospace inventory to meet operational commitments of our armed forces. The research has successfully mapped the perceptions of armed forces personnel in a positive mindset and keenness towards adoption of 3D Printing technology in managing critical aerospace inventory. The research has also brought out various imperatives required for effective implementation of this technology.

Keywords: Disruptive technology, Additive Manufacturing, Aerospace.

**A QUALITATIVE ANALYSIS OF CHINA'S EXPANDING INFLUENCE OVER UN
AND ITS IMPLICATIONS FOR INDIA**

By

Gp Capt Arun Deswal

China's increasing influence within the United Nations (UN) has significant implications for global governance and India's strategic interests. By leveraging financial contributions, diplomatic manoeuvres and leadership positions within key UN bodies, China has systematically advanced its national interests, often at the cost of India's geopolitical and security concerns. China's use of veto power in the UN Security Council (UNSC) to shield Pakistan-based terrorists and obstruct India's bid for permanent membership in the UNSC demonstrates its strategic approach to multilateralism.

This study employs a qualitative research methodology to assess the mechanisms of Chinese influence at the UN and its consequences for India's diplomacy and security policy. It analyses China's financial leverage, leadership roles in UN agencies and its efforts to reshape global governance in line with its long-term geopolitical strategy. The research highlights China's strategic use of the Belt and Road Initiative (BRI) to create economic dependencies among smaller UN member states, strengthening its voting blocs in key UN decisions.

The findings reveal that China's growing footprint within the UN is actively shaping policies that challenge India's regional and global standing. To counterbalance China's expanding clout, India must strengthen its strategic alliances (such as the Quad), advocate persistently for UNSC reforms, expand its representation in UN leadership roles, and develop alternative economic partnerships to counter the BRI's influence.

By addressing these challenges, India can safeguard its interests within the UN and strengthen its position in the evolving landscape of global governance.

Keywords: United Nations, China, Global Governance, UNSC, Diplomacy, Geopolitics, India's Foreign Policy, Belt and Road Initiative, Veto Power, Strategic Rivalry.

**ASSESSING INDIA'S CAPABILITY TO ACHIEVE DEVELOPED NATION STATUS
BY 2047: A COMPREHENSIVE STUDY OF PER CAPITA INCOME AND INCOME
INEQUALITY**

By

Gp Capt Sachindra Singh

India's vision to achieve developed nation status by 2047, its centenary year of independence, is a monumental challenge requiring substantial socio-economic reforms. Addressing per capita income growth and reducing income inequality are central to this goal. This qualitative study integrates thematic analysis of expert interviews and secondary data to examine structural disparities and policy inefficiencies. Key findings include significant urban-rural and gender-based inequalities, gaps in education quality, and underutilization of digital transformation. The study emphasizes the importance of inclusive growth, sustainable policies, and robust public-private partnerships for long-term success. Policy recommendations and future research directions are presented to align India's aspirations with global development benchmarks.

Keywords:- Per Capita Income, Income Inequality, Human Capital, Digital Transformation, Inclusive Growth, Sustainable Development

A QUALITATIVE STUDY OF RELUCTANCE OF SSC OFFICERS OF INDIAN AIR FORCE TOWARDS OPTING FOR PC

By

Gp Capt Sukhminder Singh

Why SSC officers are reluctant for Permanent Commission ? Since the resumption of PC to SSC officers in 2019, a lot of flux has been generated in the system. While a lot has been said about the factors to make SSC more lucrative, no comprehensive study has been undertaken to study prevalence of the phenomena in SSC officers of Indian armed forces. The research attempted to qualitatively understand reasons as to why SSCOs of Aeronautical branch of IAF are not opting for PC. Further, measures that aid in arresting trend of SSCOs of AE branch of IAF opting to quit armed forces would be recommend.

Qualitative research methodology was adopted as it best suited to understand the mental models of SSC officers and look beyond what is already conceived perception that SSC officers have to be used to create the necessary “peel effect” so the requisite “pull effect” for PC Officers can be created. Unstructured interview of AE SSC officers belonging to three sub-categories mentioned above as well as Structured interviews by sending them open ended questionnaires. Thematic data analysis using NVIVO software has been carried out to codify data collected. This data was subjected to various operations/ representations and to draw relevant inferences.

Four key themes emerge for our main research question i.e., Organisational Factors and Perceived lack of respect in the organisation are the two leading themes for SSC officers not opting for PC. This means that most of the SSC officers feel that there are inherent systemic deficiencies that are propelling them to quit the organisation. Additionally, themes of job satisfaction and work life balance too surface as other (non-dominant but important) themes. On a closer look these themes form a part of Herzberg’s two factor theory of hygiene factors and motivation factors. This implies that there are factors that are demotivating officers (organisational and perceived lack of respect) and there are hygiene factors that lead to increased dissatisfaction amongst young officers (job satisfaction and work life balance).

Outcome of the research has highlighted prevalence many factors in the domain of hygiene factors and motivators of two factor theory. Impact of this research can only be realised if Air HQ takes due interest in findings of the research and is open to applying systemic changes. It is submitted that studies for making SSC more attractive have been undertaken earlier as well. However, their recommendations are yet to be implanted. This indicates lack of seriousness towards addressing the problem. All three service have evolved different ToE for SSCOs. It is essential that common grounds can be worked out to avoid feeling of being shortchanged amongst SSCOs.

Keywords. SSC, PC, Herzberg’s two factor theory, hygiene factors, motivational factors, Terms of Engagement.

**A QUALITATIVE STUDY TO ANALYSE EFFICACY OF BALAKOT TYPE
AIRSTRIKES IN THE FUTURE BY IAF**

By

Gp Capt Shuaib Ahmed

The Balakot airstrike on February 26, 2019, not only marked a significant escalation but a major change in the Indo-Pak conflict, showcasing a bold use of air power to target terrorist infrastructure across the Line of Control (LoC) in the adversary's territory. This operation conducted by the IAF, raised certain pertinent questions about the long term efficacy of similar kind of airstrikes in achieving broader security objectives and influencing change in adversary behaviour. Although a lot of research have been undertaken in understanding the Nuclear Deterrence and Whether strategic space exists for conducting similar strikes in future under the shadow of Nuclear Overhang. Those research have been done in piece meal and does not come out with a comprehensive and an all encompassing approach to conduct similar kind of strikes by managing the escalation matrix. This study clearly establishes that Balakot-type airstrikes are both plausible and necessary in order to respond to cross-border terrorism and to manage the nuclear overhang in the future. Success, however, will depend on an integrated strategy that combines precision technology, intelligence superiority, narrative control and strong political leadership. Although they cannot end terrorism, conventional strikes are an important element of cost imposition, signaling intent and maintaining deterrence. Utilizing these operations in a balanced manner, India would be able to maintain its Internal Security while handling the asymmetric conflict in full view.

Keywords: Precision technology, Intelligence superiority, Narrative control and Strong political leadership.

**A MIXED METHOD STUDY TO ANALYSE IMPACT OF HEAT WAVES ON
ECONOMICALLY WEAKER SECTIONS OF DELHI NCR AND PROPOSE
MITIGATION STRATEGIES IN THE CONTEXT OF CLIMATE CHANGE &
NATIONAL SECURITY**

by

Group Captain Rashmi Dimri

Rising global temperatures due to climate change have intensified the frequency and severity of heat waves, posing serious environmental and socio-economic challenges. In densely populated urban cities like Delhi, these extreme heat events disproportionately impact Economically Weaker Sections (EWS), who have limited resources to adapt and mitigate their exposure. This mixed-method study integrates quantitative and qualitative analysis to examine the economic and operational repercussions of heat waves on EWS communities. By uncovering key vulnerabilities, the study seeks to formulate targeted mitigation strategies that enhance resilience, ensuring both climate adaptation and national security preparedness in an era of escalating environmental stressors.

Keywords: Climate Change, Heat Waves, Delhi NCR, EWS, Work Efficiency, Economic Impact, National Security, Mitigation Strategies

**A QUANTITATIVE STUDY TO ANALYSE THE IMPACT OF OPTIMIZING GEM
PROCUREMENT IN AFMS: AN ANALYSIS OF KEY CHALLENGES AND THEIR
IMPACT**

By

Col Radhika Kumar

Government e-Marketplace (GeM) has been mandated as the primary procurement portal for all government agencies, including the Armed Forces Medical Services (AFMS). Despite its advantages in cost-effectiveness and transparency, several barriers hinder the optimal utilization of GeM for medical equipment procurement. These include a lack of trained personnel, resistance to change from traditional procurement methods, inadequate IT infrastructure, quality assurance issues, compliance challenges, and ineffective after-sales services. This research aims to identify these barriers, analyze their impact on procurement efficiency, and propose solutions to enhance procurement efficacy.

The study follows a quantitative research methodology using a cross-sectional design. Data was collected through structured surveys from procurement personnel within the AFMS. Analysis was conducted using Jamovi software, incorporating factor analysis, reliability tests, and hypothesis testing through t-tests and ANOVA. The findings indicate significant gaps in procurement training and awareness of GeM policies, leading to inefficiencies and delays in procurement processes.

To address these challenges, the study recommends regular and structured training programs on procurement and GeM functionalities, improvement in IT infrastructure, enhanced communication channels between buyers and GeM authorities, and stringent quality control mechanisms. Addressing these barriers will improve procurement efficiency, ensuring timely availability of medical equipment and enhancing the operational readiness of AFMS.

Keywords: Government e-Marketplace (GeM), Procurement Efficiency, Training, IT Infrastructure, Quality Control, AFMS, Public Procurement.

**A QUALITATIVE STUDY TO DESCRIBE THE CHALLENGES IN UTILISATION
OF ALLOCATED FUNDS FOR CAPITAL ACQUISITION PROJECTS OF THE
INDIAN ARMY**

By

Col Ankur Kaushal

The efficient utilisation of allocated funds is critical for the successful execution of Capital Acquisition Projects in the Indian Army, given the strategic importance of these projects in bolstering national security. The issue of underutilised funds in Capital Acquisition Projects is a persistent problem for the Indian Army, even with the growing defence budget and strategic imperatives. In addition to impeding operational preparedness, this problem also raises questions about organisational inefficiencies and procedural bottlenecks in the defence acquisition structure. This qualitative research examines the present allocation process and the various factors which affect the utilisation of funds. By identifying systemic inefficiencies, procedural bottlenecks and vendor related issues, the article highlights areas which merit urgent attention. The article also emphasises the importance of aligning financial planning with operational priorities to enhance fund utilisation and ensure defence preparedness.

Keywords. Acquisition Process, Capital Acquisition Projects, Indian Army, Allocated Funds, Challenges, Defence Public Sector Undertakings, Vendors, Ministry of Defence.

**A QUALITATIVE STUDY TO ANALYSE THE IMPLICIT INVOLVEMENT OF IRAN
IN THE ISRAEL-HAMAS CONFLICT AND ITS IMPACT ON REGIONAL
SECURITY**

by

Col Sandeep Dhankar

The Israel-Hamas conflict represents a critical juncture in Middle Eastern geopolitics, characterized by entrenched rivalries and strategic ambitions. This qualitative study, rooted in primary and secondary data, explores Iran's implicit role in the conflict, focusing on how its financial, military and ideological support for Hamas aligns with its broader regional objectives. The research uncovers the mechanisms through which Iran uses proxies like Hamas to sustain conflict cycles, disrupt alliances and escalate regional instability. Key findings emphasize the reinforcing feedback loops such as Iran's military and financial aid bolstering Hamas's operational resilience and provoking retaliatory dynamics that amplify the conflict's systemic impacts, including humanitarian crises and geopolitical polarization. The study provides critical insights into Iran's role as a catalyst for regional escalation.

Keywords. Iran, Israel-Hamas conflict, proxy strategy, Middle East geopolitics, regional instability, Axis of Resistance, military and financial support, strategic alliances, regional destabilization, humanitarian crises, economic destabilization, causal loop analysis, global power rivalries, peace-building, conflict escalation.

**A QUALITATIVE STUDY TO EVALUATE THE EFFICACY OF INDIAN MILITARY
DIPLOMACY IN HADR OPERATIONS**

by

Col Sukinder Guleria, SM

The Indian Armed Forces are integral to conducting HADR operations in the SAARC & Southeast Asian region, providing vital disaster relief and contributing to regional stability. However, there has been a lack of comprehensive evaluation of the efficacy of these operations in terms of military diplomacy. This research was aimed to examine how HADR operations conducted by the Indian military influence diplomatic relationships with neighbouring countries and enhance India's soft power. Additionally, the study also explored the necessity for regular joint HADR exercises with the armed forces of friendly foreign countries to maximise diplomatic benefits and operational effectiveness. The findings of Research underscore that India's HADR missions are an effective tool of military diplomacy, enabling it to project soft power, strengthen strategic partnerships and reinforce its role as a regional stabiliser. However, to enhance the efficacy of military diplomacy through HADR, India must promote regional self-reliance by fostering capacity building initiatives in neighbouring nations. Develop pre-disaster diplomatic agreements to address political sensitivities and sovereignty concerns. Evolve HADR missions from immediate crisis response tools to long-term strategic mechanisms for regional transformation. Conduct regular Joint HADR exercises to enhance interoperability, trust and operational readiness, positioning India as a key player in regional military diplomacy and disaster preparedness. Addressing above systemic gaps, India can further consolidate the diplomatic dividends of its HADR efforts and solidify its position as a global leader.

Keywords: interoperability, HADR operations, Military Diplomacy, diplomatic relationships

**A QUALITATIVE DESCRIPTIVE STUDY ON OBJECTIVES, MODELS &
EFFECTIVENESS OF MILITARY DIPLOMACY**

By

Col Manmath Deora

Military diplomacy has emerged as a **pivotal instrument of statecraft, facilitating strategic engagement, security cooperation and geopolitical influence**. This study critically examines the **military diplomacy models adopted by the USA and China**, extracting key lessons that can be applied to enhance India's approach, particularly in its immediate neighbourhood. While India has made considerable diplomatic strides, its military diplomacy remains underutilized and requires a strategic recalibration in light of evolving global power dynamics. Through a qualitative research methodology, this study engages subject matter experts, including senior military officials, diplomats and think-tank analysts, to assess existing frameworks and identify actionable insights. Using thematic analysis, key areas of improvement such as **multilateral engagement, deeper defence cooperation with ASEAN and Indian Ocean littoral states and strengthened military partnerships with Africa have been highlighted**. The study further underscores the necessity of **integrating soft power elements, bolstering defence capacity-building initiatives and ensuring seamless synergy between military and foreign policy objectives**.

The research contributes valuable insights into the effectiveness of military diplomacy as a foreign policy tool while acknowledging inherent constraints such as the broad scope of the study, a limited sample size and time constraints. The findings recommend a refined military diplomacy strategy that extends beyond traditional alliances like the Quad, fostering deeper regional security cooperation and proactive engagement. Additionally, the study **advocates for a structured approach that aligns India's defence initiatives with its broader diplomatic goals, ensuring long-term strategic advantages**. The recommendations outlined aim to position India as a formidable player in regional security and global military diplomacy, enhancing its strategic posture in an increasingly complex geopolitical environment.

Keywords. Military Diplomacy, Strategic Engagement, Capacity Building, Soft Power, Regional Security, Defence Cooperation.

**A STUDY TO ASSESS ECONOMIC IMPACT OF ISRAEL MILITARY OFFENSIVE
ON GAZA'S HOUSING SECTOR AND PROPOSE A FRAMEWORK FOR
RECONSTRUCTION MECHANISM**

By

Col Sumit Prem Bishnoi

The dissertation assesses the economic impact of Israel's military offensive on Gaza's housing sector and proposes a structured reconstruction framework. The conflict, initiated on 07 Oct 2023, led to the widespread destruction of Gaza's housing infrastructure, with over 300,000 homes either destroyed or severely damaged. As housing is a crucial pillar of Gaza's economy, this devastation has triggered severe financial losses, disrupting local businesses, employment, and community structures. Using a qualitative research approach, the study gathers insights from subject matter experts in conflict economics, urban planning, and international relations. Data was collected through structured interviews and extensive secondary research, analysed using thematic and content analysis techniques. The findings highlight the urgent need for a comprehensive and sustainable reconstruction mechanism. The proposed framework includes the establishment of an Apex Body to centrally coordinate rebuilding efforts, ensuring transparency, efficient resource allocation, and avoidance of bureaucratic inefficiencies. This body would work in collaboration with international donors, local governance structures, and private sector stakeholders to create a streamlined approach to housing redevelopment.

Key aspects of the framework emphasize sustainable construction by incorporating eco-friendly materials, recycled rubble, and earthquake-resistant designs. Renewable energy solutions, such as solar-powered housing units, are proposed to reduce dependency on external power sources. Additionally, the framework recommends legal reforms to clarify land ownership disputes, ensuring smooth reconstruction without future conflicts over property rights. The study underscores the necessity of international collaboration, where partnerships with organizations like the United Nations and World Bank can provide financial and technical support while mitigating geopolitical barriers.

Keywords : Economic Impact, Housing Sector, Reconstruction Framework, Sustainable Development, Apex Body, Displacement Crisis, Renewable Energy, Legal Reforms, International Collaboration, Conflict Economics.

**A QUALITATIVE STUDY ON IMPLICATIONS OF CHINA'S ANTI-SATELLITE
CAPABILITY ON INDIA'S SPACE-BASED ISR INFRASTRUCTURE**

By

Col Kanishk Chauhan

The increasing militarisation of space has made anti-satellite (ASAT) capabilities a critical concern for national security, particularly in the context of India's space-based Intelligence, Surveillance, and Reconnaissance (ISR) infrastructure. China's advancements in ASAT technologies—including kinetic kill vehicles, co-orbital systems, cyber warfare, directed energy weapons and electromagnetic attacks—pose a direct threat to India's ISR satellites, such as Cartosat, RISAT, and GSAT. This study analyses China's ASAT arsenal and its implications for India's strategic autonomy, operational preparedness, and national security.

Through qualitative research involving expert interviews and extensive literature review, the dissertation identifies key vulnerabilities in India's ISR infrastructure, including limited satellite redundancy, nascent Space Situational Awareness (SSA) capabilities and lack of manoeuvrable systems. The study highlights the risks of potential space conflicts escalating into broader military confrontations and contributing to regional instability.

To counter these threats, the research proposes a multi-pronged approach involving the development of indigenous ASAT capabilities, enhancement of SSA systems, investment in resilient satellite architectures and strategic partnerships with global space powers. It also emphasizes the importance of advocating for international treaties to regulate ASAT testing and prevent the weaponisation of space. Establishing a unified space command is recommended as a crucial step toward ensuring coordinated space security operations.

This research underscores the urgency for India to adopt proactive defence measures in space to protect its ISR assets, maintain strategic deterrence and secure its role in the evolving space security landscape.

Keywords: Anti-Satellite (ASAT), Intelligence Surveillance and Reconnaissance (ISR), Space Situational Awareness (SSA), Satellite Security, Strategic Space Defence.

**A QUALITATIVE STUDY ON IMPLICATIONS OF CHINA'S ANTI-SATELLITE
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Keywords: Anti-Satellite (ASAT), Intelligence Surveillance and Reconnaissance (ISR), Space Situational Awareness (SSA), Satellite Security, Strategic Space Defence.

**A QUALITATIVE STUDY ON EFFECTIVENESS OF THE DMA FOR
FORMULATION OF MILITARY STRATEGIES**

By

Col Digvijay Singh

The creation of *office of DMA the post of CDS* on 01 Jan 20 are *one of the greatest reforms in the civil-military set-up of India* and this is a '*not to be missed*' opportunity. The creation of the DMA has for the first time given an opportunity to the armed forces to participate at the apex structure with responsibility directly to the polity. The focus has been not only to bring in synergy, but also to bring in greater efficiencies, work culture, focus and processes by which the nation should benefit. While the organisation has been created, however the *initial charter allocated to the DMA has not given big outcomes*. Also in last four years, not much research has been carried out in this area, though many scholarly articles and papers in various journals, magazines or newspapers have been written by think tanks. While many think tanks in their own capacity have shown the DMA office effective for civil military paradigm, however there is no scientific research carried out to find out effectiveness of DMA for strategy formulation for Indian Military. This research has endeavoured and attempted to enlighten service personnel, service veterans, affected bureaucracy and academic scholars regarding the transformation taking place in the civil-military arena of the country. Also, some *way ahead strategies* have been recommended as the office of DMA has matured now for the last four years. One of the major recommendations is creation of *structures which are truly joint in nature like Joint Military Operations Branch, Joint Intelligence Branch, Joint Operations Logistics Branch*, which need to come up to support the idea of a theatre command.

Keywords: Strategy Formulation, Role of DMA, Jointness, Integrated Theatre Commands, Chief of Defence Staff (CDS), Capability Development and Civil Military Relations/ Fusion.

**A QUANTITATIVE STUDY TO ANALYSE THE EFFICACY OF LEADERSHIP
CURRICULUM OF SENIOR COMMAND COURSE AT ARMY WAR COLLEGE**

By

Col Ashish Bajpai

This study examines the effectiveness of the Senior Command Course by analysing the relationship between Perceived Effectiveness of Leadership Training (PE) and Self-Reported Leadership Behaviour (SRLB) among middle-level military officers. Using Adaptive Leadership Theory as the conceptual framework, the research employs a correlational design with a structured questionnaire to measure cognitive, affective, and behavioural perceptions of training effectiveness, alongside emotional intelligence, organisational justice, ongoing development, and strong character as leadership behaviour indicators. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) validated the measurement model, while one-sample t-tests assessed whether officers perceived the training as effective and reported behavioural improvements. Pearson's correlation ($r = 0.642$, $p < 0.001$) confirmed a significant positive relationship between training perception and leadership behaviour, reinforcing that officers who rate training as effective are more likely to apply learned leadership skills. The study highlights the need for enhanced emotional intelligence training, scenario-based learning, and post-course reinforcement to maximise leadership development outcomes.

Keywords: Perceived Effectiveness of Leadership Training, Self-Reported Leadership Behaviour, Adaptive Leadership, EFA, CFA, One-Sample t-tests, Pearson's Correlation

**A QUANTITATIVE STUDY TO EVALUATE THE EFFICIENCY AND
EFFECTIVENESS OF CPWD MODEL FOR MAINTENANCE OF MARRIED
ACCOMMODATIONS IN INDIAN ARMED FORCES**

By

Col Mohit Dhingra

The maintenance of married accommodations in the Indian Armed Forces is a critical welfare imperative, directly influencing the **morale, resident satisfaction** and **operational readiness** of service personnel. Despite its pivotal role, the Military Engineer Services (MES) has been plagued by inefficiencies—**delayed complaint resolution, substandard service quality** and **outdated maintenance mechanisms**. This study critically examines the Central Public Works Department (CPWD) maintenance model, renowned for its **structured, technology-driven** and **resident-centric** approach. Through quantitative analysis, including **survey driven correlation studies** and **factor analysis**, the research highlights CPWD's superior performance in **complaint resolution efficiency, response times** and **infrastructure sustainability**. The findings advocate for a strategic overhaul of MES's maintenance framework, emphasizing **digital transformation, preventive maintenance integration, centralized complaint handling** and a shift from **cost-driven (L1) tendering to quality-focused contracting**. By adopting CPWD's best practices, MES can enhance infrastructure longevity, improve service accountability and significantly uplift the welfare of military personnel. This dissertation presents a blueprint for modernizing MES, ensuring efficient, transparent and high-quality maintenance solutions that align with the evolving needs of the Indian Armed Forces.

Keywords: CPWD Maintenance Model, Military Engineer Services (MES), Resident Satisfaction, Preventive Maintenance, Complaint Resolution, Digital Platforms, SEWA App, Maintenance Efficiency, Infrastructure Longevity.

**A QUALITATIVE RESEARCH TO ANALYSE THE IMPACT OF PLA'S
AEROSPACE FORCE ON SECURITY OF INDIA (DESCRIPTIVE)**

By

Col Samar Sirohi

Space missions, integration of niche technologies, re-organisation of the Peoples Liberation Army Strategic Support Force (PLASSF) into Aerospace Force (ASF) in Apr 2024, further emphasises the unchanging fact that space capability remains a key defensive and offensive strategic tool for China. It is assumed that China's Aerospace dominance is being effectively engaged by India through effective geopolitics and investments in space capability; reducing the security implications on India. The creation and re-organisation of ASF favourably impacting border surveillance capability, missile programmes, space/ counter-space capabilities has the potential to irrevocably change the strategic/ regional security dynamics. If the imbalance in the Aerospace continues, it will lead to widening of the capability gap and enhanced threat to India and it's National Interests in the Region.

The research work studies China's Space Capabilities in general and PLA Aerospace Force in particular along with it's impact on India over multiple strategic domains. To progress the research work, a Qualitative Research strategy was adopted. Secondary data on the Aerospace and Space capabilities of China and India, it's significance in regional dynamics and impact on India was gathered. The researcher has proposed that short term strategies in the complex space and aerospace domains with long gestations can only be achieved through collaboration with other space powers and by integrating existing technologies with civilian space industries. The research further proposes certain policy recommendations to include evolving National Space Policy 2023, implementing the National Space Security Doctrine, enhancing Inter-Agency Coordination, Collaboration with Space Powers, focus on Civil Military Fusion (CMF) etc. Also, as part of long term strategy it has proposed prioritization of aerospace development as key National Security Objective, Integrated Command and Control Structures, national investments in Counter Space and Defensive Capabilities.

Keywords. PLA, Aerospace Force, Capability, China, India, Security Impact, Civil Military Fusion, Policy, National Security Objectives for Aerospace.

**A QUANTITATIVE STUDY TO ANALYSE THE IMPACT OF MANIPULATION OF
INFORMATION AND SPREAD OF MISINFORMATION AS A COGNITIVE
WARFARE TOOL ON THE USER COGNITION**

By

Col Kuldeep Singh

The globalisation of societies primarily achieved through exploitation of internet and social media, has improved business functioning and one to one or one to many connectivity. However, the addiction, over reliance and lack of digital information literacy about secretive technologies of social media and online platforms has also created many vulnerabilities which are being exploited in the Cognitive warfare domain. Through use of various obnoxious technologies such as Device Fingerprinting, Attention Tracking Technologies (ATT), Echo Chambers, Filter Bubbles, Generative Large Language Multi Models, Lang Chains, Change Data Capture (CDC) etc, the user data is analysed to understand biases/ opinion/ feelings of individuals/ societies and a hyper-modulated and personalised content (misinformation and manipulated information) is re-presented to the user. The quantitative analysis was carried out to ascertain the user awareness of such subtle technologies of social media platforms and their impact on cognition (perception, behavior and decision making). The research revealed that though the user does have very little and basic understanding as to what social media can do, however, once it comes to collection, analysis and manipulation of their data, they are generally clueless as to how these technologies achieve this and are equally ignorant about their impact. Without understanding of how Social Network Analysis (SNA), ATT, Echo Chambers, Filter bubble type of technology/ tactics work, the user is vulnerable to becoming part of networks where content is carefully crafted and tailored to provoke emotional responses or reinforce pre-existing beliefs. The responses affirmed that users being part of society are wired for social proof. The responses highlighted that the information or misinformation overload, lack of time with user and the confusion warfare makes user rely on sponsored belief and reduces their critical thinking capabilities, and thus becoming easy target for cognitive warfare. The user needs to be made aware of and educated towards this secretive way of functioning of social media platforms so as to guard self/ family/ organisation/ society from potential harm.

Keywords: Social Media Platforms, Background secretive technologies of social media platforms, Digital information literacy of user, Impact on perception, behavior and decision making.

A QUALITATIVE STUDY TO ASSESS THE EFFECTIVENESS OF UNITED NATIONS RELIEF AND WORKS AGENCY FOR PALESTINE REFUGEES IN THE NEAR EAST (UNRWA) IN THE ONGOING ISRAEL-HAMAS CONFLICT

by

Col Pankaj Kumar Upadhyay

The study evaluates the effectiveness of the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) in providing humanitarian aid during the Israel-Hamas conflict, focusing on operational challenges, funding issues, and stakeholder perceptions. The Israel-Hamas conflict has caused a severe humanitarian crisis in Gaza with widespread displacement, economic collapse and lack of basic services. UNRWA, established in 1949 is responsible for providing essential services such as education, healthcare and social support to Palestinian refugees, but it faces significant challenges including security threats, restricted access, political pressures and funding shortfalls. The study employs a qualitative methodology using secondary data and interviews with six subject matter experts (SMEs). Key findings highlight that security risks, limited access and logistical issues impede aid delivery, while financial instability due to dependence on voluntary contributions affects UNRWA's capacity to sustain operations. The study also identifies that stakeholder perceptions of UNRWA's neutrality are mixed with accusations of bias from both Israel and Hamas impacting its credibility and funding. The study recommends diversifying funding sources, enhancing operational flexibility, strengthening stakeholder engagement to reinforce neutrality and improving coordination with other international agencies. Limitations include the ongoing and dynamic nature of the conflict, restricted access to UNRWA staff and political biases in available literature. The study concludes that while UNRWA plays a critical role in providing humanitarian aid, addressing funding, operational, and neutrality issues are essential to enhance its effectiveness in conflict zones.

Keywords: Israel-Hamas Conflict, United Nations Relief and Works Agency for Palestine Refugees in the Near East, Humanitarian Aid, Operational Challenges, Funding Issues, Stakeholder Perceptions.

**A QUALITATIVE STUDY TO UNDERSTAND PLA OPERATIONAL LOGISTICS IN
TIBET AUTONOMOUS REGION**

By

Col Anuj Kumar

The study analyses the operational logistics of the PLA (Army) in the Tibet Autonomous Region (TAR) to assess its logistical strengths, vulnerabilities and strategic implications for India's border security. The need for this research arises from the PLA's growing military infrastructure in TAR, its ability to mobilize forces rapidly across high-altitude terrain and the necessity for India to adapt its logistics to counterbalance these developments. The broad objective is to examine the PLA's logistical capabilities, identify critical vulnerabilities and recommend strategic measures for India's military logistics to enhance operational readiness along the Northern Borders. The research assesses PLA's logistical infrastructure, mobility, centralized logistics framework and integration with civilian infrastructure, enabling sustained combat readiness in extreme high-altitude conditions. It evaluates PLA's extensive road (G219, G318 highways), rail (Qinghai-Tibet Railway) and air networks (dual-use airfields in Lhasa, Ngari, Shigatse), underground storage depots, UAV based resupply and AI-driven logistics management. A key focus is on PLA's logistical deployments and build-up across areas opposite Eastern Ladakh, particularly in Ngari Prefecture, including Rudok, Gar, and Shiquanhe, where forward logistics hubs and pre-positioned supplies enable rapid mobilization. Key infrastructure such as Ali-Kunsha Airport, logistics depots in Shiquanhe and Gar and high-altitude roads connecting forward locations to the hinterland significantly strengthen PLA's operational reach. The study identifies vulnerabilities, such as extreme environmental constraints, high-altitude operational challenges and over-reliance on centralized logistics hubs, which could be exploited in a conflict scenario. Using thematic analysis with NVivo software, the study evaluates the strategic implications for India, emphasizing the need for infrastructure upgrades, decentralized logistics hubs, enhanced road-rail-air connectivity, integration of military and civilian logistics and greater adoption of UAVs, AI and real-time logistics tracking to counter PLA's advantages. It further underscores the importance of Indian logistics developments in Eastern Ladakh, including expansion of airfields in Nyoma, better road networks to Daulat Beg Oldie (DBO), and improved forward supply chain resilience. The findings conclude that while the PLA's logistical architecture provides a significant operational edge, its centralized nature poses risks and India must adopt a multi-pronged strategy to enhance logistical resilience and preparedness along the northern borders.

Keywords. PLA Logistics, Tibet Autonomous Region, Eastern Ladakh, High-Altitude Warfare, Infrastructure Development, Centralized, Decentralized Logistics, Strategic Implications.

**A DESCRIPTIVE STUDY TO ANALYSE THE ISRAELI APPROACH IN
ACCORDANCE WITH “PRINCIPLES OF WAR” NAMELY SELECTION AND
MAINTENANCE OF AIM, CONCENTRATION OF FORCE, FLEXIBILITY AND
INTELLIGENCE.**

By

Col Sunil Kumar Udeck

The **Israel-Palestine conflict** is a deeply entrenched territorial dispute driven by historical, religious, and political factors, **resulting in persistent violence, multiple wars, and deep-seated mistrust**. The Hamas attack on Israel on October 7, 2023, highlights the risks posed by an uncontrolled territory that enables strikes against the Israeli state. This *research examines the Israeli Armed Forces’ strategy in Gaza through the lens of key Principles of War viz Selection and Maintenance of Aim, Concentration of Force, Flexibility, and Intelligence*. These principles serve as the foundation of military strategy, shaping operational objectives, resource allocation, adaptability, and the long-term sustainability of military efforts. By analysing their application in Israeli military operations, this research offers critical insights into how Israel seeks to achieve its overarching objectives in a volatile and evolving battlefield. Key findings emphasize that for any Nation engaging in armed conflict, *having a clear, achievable politico-military aim is essential*. The *failure to maintain a well-defined strategy aligned with terrain and enemy resistance comes at great peril*. The ongoing conflict reaffirms the principle that *concentrating force at decisive points is critical to military success*. It also amply highlights that success in modern warfare depends on the ability to *evolve viable strategies, recalibrate plans, and innovate tactics in response to dynamic and unpredictable battlefield conditions*. The conflict has also revealed that while superior intelligence remains a decisive factor in conventional warfare, *countering unconventional adversaries requires integrating advanced methods such as predictive analytics and socio-cultural insights to bridge intelligence gaps effectively*.

Keywords. Israel Hamas Conflict, Principles of War, Selection and Maintenance of Aim, Concentration of Force, Flexibility, Intelligence

**A QUALITATIVE STUDY TO ASSESS THE TRANSITION FROM BUILT TO
PRINT TO BUILD TO SPECIFICATIONS IN DEFENCE MANUFACTURING**

By

Col Arjun Popli

This dissertation examines India's evolving defence manufacturing strategy, focusing on the transition from the traditional Built-to-Print (BTP) approach to a more dynamic Build-to-Specifications (BTS) model. Historically, India's defence production relied on blueprints and imported technologies under BTP, which, while effective for immediate needs, limited indigenous innovation and design capabilities. The shift to BTS emphasizes performance-based specifications, indigenous design and cutting-edge technology integration in line with the Government's Atmanirbhar Bharat initiative. This strategic pivot aims to reduce dependency on imports, bolster domestic R&D, and stimulate technological self-reliance.

The study traces the evolution of the sector; from its colonial roots and state-driven manufacturing to post-liberalisation reforms such as 'Make in India' that opened up private sector participation and encouraged international collaborations. Despite significant policy reforms like increased FDI limits and the Strategic Partnership Model, challenges remain. These include limited R&D investments, skill deficits, infrastructural constraints, and complex procurement processes that slow innovation and technology absorption.

Using a qualitative research design anchored on six in-depth interviews with key stakeholders from government, industry and defence establishments, the study identifies four main themes i.e Transition to BTS, Precision Manufacturing & Skill Development, Strategic Alliances & Ecosystem Development and Technological Transition & Absorption.

Based on these insights, the dissertation recommends clearer and more stable procurement processes, increased funding for domestic R&D, improved access to testing facilities and stronger strategic alliances. It also advocates for a shift towards value-based procurement models and enhanced policy frameworks to foster a cohesive, innovation-driven defence manufacturing ecosystem.

While the research provides valuable insights into the challenges and opportunities of transitioning to BTS, it also acknowledges limitations such as a small sample size and potential biases from the selected stakeholder groups. The study concludes by suggesting that a synergistic approach involving government, industry and academia is essential to achieve a robust, self-reliant defence sector, positioning India as a global leader in defence manufacturing.

Keywords: Built-to-Print (BTP), Technological Absorption, Make in India, Build-to-Specifications (BTS)

**A QUALITATIVE CASE STUDY TO ANALYSE THE REASONS FOR THE
SIGNIFICANT RISE OF THE VIJAYANAGAR EMPIRE UNDER RAJA KRISHNA
DEVA RAYA**

By

Capt (IN) AK Desai

The Vijayanagar Empire which flourished in Southern India from the 14th to the 17th century stands as one of the most remarkable empires in Indian history. Under the rule of Raja Krishna Deva Raya (1509–1529), the Empire attained unprecedented heights and reached at its zenith. Despite him ascending to the throne under very turbulent and challenging circumstances, his successful reign of two decades marked an era of consolidation and unification of South India under one rule, for the first time. The Empire's prosperity and stability attracted a diverse range of merchants, scholars, artists and travellers like Domingo Paes and Duarte Barbosa. However, the Empire witnessed a crushing defeat in the Battle of Talikota (1565) from the military alliance of the Deccan sultanates which lead to its rapid decline. This research study attempts to identify various facets of Krishna Deva Raya's reign particularly the military, diplomatic, economic and administrative aspects and offers a comprehensive view of India's one of the most formidable empire's journey to its peak. The research is of historical nature and pertains to a topic that has acquired much traction in the recent years due to its immense significance. This research study systematically analyses reasons for the significant rise of the Vijayanagar Empire under Raja Krishna Deva Raya and derive relevant lessons for modern India's strategic leaders.

Keywords. Vijayanagar Empire, Raja Krishna Deva Raya, History of South India, *Krishnadevaraya*, Deccan Sultanates, Gajapatis.

**A QUALITATIVE COMPARATIVE STUDY OF INDIAN DEFENCE
SHIPBUILDING YARDS, TOWARDS MEETING THE MARITIME SECURITY
NEEDS OF THE NATION VIS-À-VIS GLOBAL STANDARDS**

By

Capt (IN) Vikram Singh

India's maritime security depends on a robust naval fleet supported by an efficient and self-reliant defence shipbuilding industry. Despite advancements, Indian defence shipbuilding faces challenges such as time and cost overruns, technological dependence and outdated infrastructure. These inefficiencies directly affect India's maritime readiness and strategic autonomy. This study analyses the capacity of Indian defence shipyards to meet maritime security needs and compares them with global standards. Through qualitative research, including expert interviews and thematic analysis, the study delves into technological gaps, infrastructure bottlenecks and procurement inefficiencies. Case studies of major projects like the Scorpene submarines and Kolkata-class destroyers have been undertaken to establish the lacunae. Further, analysis of global leaders like China and South Korea revealed that successful nations leverage advanced automation, efficient project management and robust public-private partnerships. Accordingly, the study recommends modernization of infrastructure, enhancing technology transfer, and developing skilled manpower to bridge these gaps. Achieving self-reliance in defence shipbuilding is essential for national security. This research provides actionable insights for policymakers and industry stakeholders to strengthen India's maritime capabilities and align with global best practices.

Keywords: Indian Defence Shipbuilding, Maritime Security, Time and Cost Overruns, Global Standards, Infrastructure Modernization, Public-Private Partnerships, Technology Transfer.

**A QUALITATIVE STUDY ON ROLE OF CHOLA NAVY IN ENSURING THEIR
MARITIME DOMINANCE IN INDIAN OCEAN REGION**

By

Capt (IN) P Kiran Kumar

The Chola dynasty, which ruled over large parts of South India from the 9th to the 13th centuries, is feted for its maritime prowess that established its dominance across South East Asia and in the Indian Ocean Region (IOR). The expansion of Chola empire up to Srivijaya empire is primarily associated with the requirements of trade and preventing undue taxation on the Chola traders. In all such accounts, the role played by the Chola Navy has not been documented very well and needs to be understood thoroughly. The subject has been studied extensively from an academic point of view in that historians and researchers have commented upon the manner in which Cholas had enhanced their influence over vast ocean regions of Indian Ocean. Understanding the manner in which the Cholas controlled or dominated the sea space in an era where technology was limited and knowledge of the seas was passed on by word of the mouth as well as limited records, would provide the modern day theorists and planners a ready reckoner for templating the *IN* maritime doctrine. This is because, the geography and the circumstances are eerily similar to what existed between the 9th and the 13th centuries. We need to understand our maritime legacy thoroughly to ensure that the valuable lessons learnt through the enhancement of maritime influence in the Chola era are not lost. The emphasis on protection of strategic choke points, hybrid model of commercial shipping, logistical support for military operations, spreading cultural influence are all valuable lessons that must be emulated by modern day planners.

Keywords: Maritime, Influence, Cholas, Expeditions, Security, History, Trade, Merchant Guilds, Navy

**A QUALITATIVE STUDY (DESCRIPTIVE) OF JOINT LOGISTICS SUPPORT
FORCE (JLSF) IN CHINESE ARMED FORCES**

By

Gp Capt Pankaj Upadhyay

China's People's Liberation Army (PLA) is one of the world's largest and most advanced military forces, undergoing extensive modernisation under the Central Military Commission (CMC) and the Chinese Communist Party (CCP). A key aspect of this transformation has been the establishment of the Joint Logistics Support Force (JLSF) to enhance operational efficiency and sustain military operations across various terrains. However, significant opacity exists regarding its organisational structure, operational capabilities and strategic impact. Given that theaterisation and joint logistics in the Indian Armed Forces are still in their early stages, analysing the strengths and weaknesses of the JLSF could provide valuable insights for India's military logistics integration and jointness. This research seeks to explore the formation, evolution and strategic implications of JLSF, offering a comprehensive understanding of its role within the PLA.

Keywords: Joint Logistics Support Force in Chinese Armed Forces, Logistics Functions, Org Structure, Evolution, Integration & Jointness, Strengths and Weaknesses.

**A QUALITATIVE STUDY TO ANALYSE THE EFFECTIVENESS OF
MERCENARIES IN OPERATIONS CARRIED OUT IN RUSSIA UKRAINE WAR**

By

Gp Capt Gaurav Bhatnagar

Mercenary forces often operating as Private Military Companies (PMCs) have played a critical role in the Russia–Ukraine conflict performing combat, reconnaissance, and logistics support tasks. Their specialized skills in urban warfare and rapid-deployment operations can make them appear more effective than regular militaries in certain niches. However, challenges such as loyalty issues, command-and-control complexities, and questions over legal accountability often undermine their long-term value. Through qualitative research, including thematic analysis of open-source reports and interviews with subject-matter experts, this study gauges the actual operational impact of mercenaries in the Russia–Ukraine War. It reveals that while mercenaries can serve as force multipliers and offer plausible deniability to state actors, their involvement heightens ethical and legal dilemmas. Consequently, the strategic benefits they provide must be weighed against risks of undisciplined behavior, human rights violations, and the erosion of state control. By synthesizing battlefield outcomes and expert insights, the research highlights that mercenaries’ true effectiveness depends on robust oversight, proper integration with regular forces, and adherence to international norms. Ultimately, policy recommendations stress the need for clearly defined legal frameworks, better regulation of PMCs, and comprehensive strategies that consider both short-term tactical gains and long-term regional stability.

Keywords: Mercenaries, Private Military Companies, Wagner Group, Russia–Ukraine War, Operational Effectiveness, Strategic Objectives, Ethical Considerations.

**A QUALITATIVE STUDY TO ANALYSE THE ROLE AND EFFECTIVENESS
OF THE INTERNET GOVERNANCE FORUM IN THE INDIAN CONTEXT**

By

Gp Capt Karthikeyan

The Internet presence in the lives of people has been making a difference and has now been considered a fundamental right. With this ever-increasing usage of the internet, the evil side of the internet also emerges alongside the good side of it. There is an emergent requirement to regulate the usage of the internet through governance to ensure all the elements using the internet do so safely and efficiently. In the internet domain, the ownership of the nation is a debatable question as the origin of data can be from anywhere in the world and it will get routed to a user through multiple nation-states. This therefore transcends the political boundaries of a nation-state but should they be allowed to undermine the sovereignty of the nation-state? The Internet is being used by various individuals, organizations, and government bodies. Each has varied concerns on its usage and sometimes a conflicting concern. For instance, individuals are concerned about privacy while the Government considers it as a tool for vigilance to ensure social order is maintained. Both views can be conflicting and what is the extent of allowance to be made requires governance. The dynamic nature of Internet capabilities further makes it ever challenging to regulate and, in most situations, the regulation may be just able to catch up with this change. Governance can be defined as a framework of rules and regulations formulated for certain processes, functions, or transactions in an organization. Internet Governance Forum (IGF) was formed in 2005 to be a forum to encourage discussions by multi stakeholders at a common platform without making the outcomes binding on participating members. The IGF started functioning from 2006 onwards and has been active since then at the global level. The subject of research here is “has the IGF met the intended role and was effective in Indian context?”. The research indicated that the IGF role was being met significantly and it was effective in its role for introducing the laws. However, the organization's awareness and functioning would be even better with increased participation of internet users through enhanced presence on social media and educational institutes across the country. Further, the lack of framework to assess the task achievement makes it difficult to focus the resource to address mandatory area of governance. A framework to measure the task achievement is important.

Keywords: IGF, Internet, Governance, Multi Stakeholder

**A QUANTITATIVE STUDY ON INNOVATION CAPABILITY OF INDIAN DEFENCE
INDUSTRY TOWARDS DEVELOPMENT OF AN INDIGENOUS AERO-ENGINE**

By

Gp Capt Gulshan

India has not been able to develop an aero-engine for its domestic combat aircraft programs. It relies on imported General Electric (GE) engines. Subject Matter Experts cite Research and Development (R&D) facilities and lack of metallurgy as the roadblocks. Addressing these challenges would enable resolution of the issue. However, addressing R&D and metallurgical challenges alone may not be the only solution. Unless innovation capabilities exist to produce innovations by exploiting various technologies, the present impasse may not be overcome as was evident from the Kaveri engine program, wherein more than sufficient R&D and metallurgical technologies also could not overcome the impasse. Continued focus on addressing the technological issues alone while neglecting the innovation capabilities may result in making the indigenous aeroengines a distant dream and delay the self-reliance of the nation in this niche technology possessed by only a handful of nations. Towards this end, this study explored the innovation capability of Indian Defence Industry to address the challenges being faced holistically. The research has holistically brought to the fore that there is sufficient evidence to suggest that “Existing level of Technology Absorption Capability and R&D Capability of Indian Defence Industry would result in development of an Indigenous Aeroengine” based on the near objective sentiment of all the stakeholders. The study also lends objectivity towards assessing the viability of ToT route to expedite the process of aeroengine development so as to make the nation self-reliant in this critical Air Force technology. It has also highlighted the existing innovation capabilities of Indian Defence Industry to produce innovations by exploiting various technologies.

Keywords: combat aircraft, General Electric (GE) engines, Kaveri engine program, Indian Defence Industry, Indigenous Aeroengine

**A QUALITATIVE STUDY TO CARRY OUT COMPARATIVE ANALYSIS OF
MILITARY EFFECTIVENESS IN INDIA AND SOUTH KOREA**

By

Gp Capt Trilok Sharma

The military recruitment model of a nation plays a crucial role in shaping its defence capabilities, economic sustainability and societal structure. **India** follows an **all-volunteer military model**, focusing on professionalism and long-term service, while **South Korea** employs a **conscription-based system** to ensure a steady inflow of personnel due to persistent security threats. This study provides a comparative analysis of these models based on operational effectiveness, economic impact, societal influence and strategic adaptability.

The research identifies key strengths and challenges of both systems. **South Korea's conscription model ensures rapid mobilization** but comes with high retraining costs and workforce disruptions. **India's volunteer system fosters a professionalized, adaptable military force** but requires significant financial investment for recruitment and retention. The findings highlight that while **conscription fosters national unity and immediate readiness**, an **all-volunteer force offers long-term cost efficiency and technological adaptability**.

The study concludes that both systems have unique advantages depending on national security needs. **A hybrid approach, integrating elements of both models, could offer a balanced solution to contemporary military challenges**. The insights from this study can aid policymakers in refining military recruitment strategies to optimize national defence effectiveness and economic sustainability.

Keywords. Conscription, Volunteer Army, Operational Effectiveness, Economic Sustainability, Strategic Adaptability, Societal Impact.

**A QUANTITATIVE STUDY OF GAP BETWEEN TRAINING AND SKILL
PARAMETERS OF JUNIOR PARAMEDICS IN THE ARMED FORCES**

By

Surg Capt K Pradeep Shankar

Medical profession is older than humanity, as the basic tendency to take care of the hurt and the weak amongst their own is witnessed in all living creatures, putting a supreme responsibility on those who attend to others. The paramedics being the first responders for almost all medical/ surgical casualties, especially the emergencies form a crucial part of the medical team. In all probability, our Father of Nation – Mahatma Gandhiji, drew the inspiration of non-violence from his days as a Nursing Assistant in the British Army. The junior paramedics of Armed Forces are deployed at remote locations many a times with restricted access to healthcare facilities. Therefore, this segment of our healthcare professionals needs to be competent at all times and in all situations. A gap was perceived to be present between the knowledge that the paramedics possess (training imparted/ knowledge gained) and what they apply in their fields of work (skills imbibed/ knowledge applied). However, post an in-depth study and analysis of the entire situation, the gap though established to be present is very minimal and not critical. The instant study further opens up a specific realm of possibilities for reforms and improvement in the healthcare system of AFMS. It brings out the different aspects of the gap between training imparted and competency/ skills imbibed among paramedics of Army/ Navy/ Air Force, which can be smoothened out with the adoption of recently promulgated NCAHP Act, 2021. The functional efficiency of paramedics at work directly boosts the morale of the troops, be it in peace time or war time. The gaps get filled up within a few years as the paramedics gain first-hand experience under expert supervision and undergo multiple courses of training, including the many specialisations, thus providing a high class of healthcare to the dependent clientele as well as reducing mortalities and morbidities.

Keywords: Paramedics, Training, Competency, Skills, Skill set, NCAHP Act.

**A QUALITATIVE ANALYSIS OF RUSSIAN EFFORTS TO OVERCOME WESTERN
SANCTIONS AND APPLICABILITY IN THE INDIAN CONTEXT**

By

Col Abhishek Sharma

Russia has been subjected to a barrage of Western Economic Sanctions as a consequence of its Special Military Operation (SMO) in Ukraine. However, its economy appears to be growing despite the sanctions and there seems to be no impact on its willingness to prolong the special military operation in Ukraine against all western expectations and defying prevalent theories on the effectiveness of Economic Sanctions. The efficacy of Russian diplomatic, economic, fiscal and trade initiatives in overcoming concerted western efforts to sanction its economy seem to be only partially explained by prevalent Economic Sanction Mitigation Theories as well. India, on the other hand, had undergone a coercive sanctions regime for pursuing our nuclear tests in 1998 which impacted our economy significantly. To pursue an independent foreign policy, financial sovereignty and freedom from economic coercion is a must. The Russian success was hinged on strategies modelled around export diversification, energy diplomacy, domestic production, alternate partnerships and usage of multiple financial platforms. Learning from them, diversified trade partnerships, energy security and multilateral engagements emerge as strategies worth emulating in our context.

Keywords. Russia, western sanctions, de-dollarisation, economic sanctions, India, financial sovereignty, mitigation measures, geopolitical strategy.

A QUANTITATIVE STUDY TO MEASURE SATISFACTION LEVEL OF SSC OFFICERS WITH THE TERMS OF ENGAGEMENT (10+4 YEARS) OF SSC ENTRY OF THE INDIAN ARMY

By

Col Rakesh Yadav, SM

Short Service Commission (SSC) officers form an integral part of the Indian Army, contributing significantly during their limited tenure. Despite their crucial role, they face several challenges, primarily centered around job security, career progression, and post-service opportunities. The (10+4 years) engagement model, introduced in 2006, has had a profound impact on SSC officers, particularly during their mid-career phase when financial and personal responsibilities are at their peak. Though the SSC scheme was initially designed to address officer shortages and optimize pension costs, many SSC officers seek Permanent Commission (PC) as a means to secure their future. However, the limited availability of PC slots has led to widespread dissatisfaction, leaving any officers uncertain about their long-term career prospects.

This research delves into the satisfaction levels of SSC officers, examining how various factors such as service tenure, gender, and entry types influence their experiences. The study follows a quantitative approach, employing a cross-sectional research design with data collected from 653 officers through structured questionnaires. Statistical tools, including JAMOV software, one-sample T-tests, ANOVA, and Chi-square tests, were utilized to ensure accurate analysis and validation of findings.

Key findings reveal that while many SSC officers find initial job satisfaction, mid-career uncertainties and limited career growth options often lead to frustration. Additionally, job insecurity remains a critical concern, affecting officers across all ranks and service backgrounds. The study highlights the urgent need for structural improvements in the SSC model, including better career progression pathways, financial security measures and well-defined resettlement programs to ease the transition into civilian roles.

To address these pressing issues, the research recommends a restructured engagement model, increased PC opportunities, the introduction of robust career transition programs and financial reforms such as pro-rata pensions or inclusion in the National Pension System (NPS). Implementing these recommendations would help boost morale, enhance job security, and ensure that SSC officers remain a motivated and future-ready force within the Indian Army.

Keywords. SSC Officers, Job Satisfaction, Job Insecurity, Career Progression, Permanent Commission, Second-Career Support, Resettlement Programs and Flexible Tenure Models.

**QUALITATIVE STUDY ON RASHTRIYA RAKSHA UNIVERSITY: IS IT
ACHIEVING ROLE OF INDIAN DEFENCE UNIVERSITY**

By

Col Ashwani Sudyal

The Rashtriya Raksha University (RRU), established in 2020 was envisioned as India's premier national security institution filling the void left by the **stalled** Indian Defence University (INDU). However, questions persist about whether RRU can achieve the comprehensive aims of INDU, which was intended to develop military leadership, advance strategic research and foster international defence collaboration. This study disparagingly evaluates RRU's **mandate, strengths and limitations** while comparing its role to INDU's vision. The findings divulge structural and strategic gaps in RRU's alignment with INDU's objectives, highlighting the urgent need for a dedicated institution like INDU. Recommendations emphasise redefining RRU's role, bridging existing gaps and fast tracking INDU's establishment to secure India's defence education priorities.

Keywords: Rashtriya Raksha University (RRU), Indian Defence University (INDU),

**A QUALITATIVE STUDY TO ANALYSE ORGANISATIONAL ASPECTS AT
TACTICAL LEVEL OF INFORMATION SHARING ARCHITECTURE IN ARMED
FORCES**

By

Col PKK Babubhai, SM

The effectiveness of modern war faring armed forces now heavily depends on the ability to gather, process, and disseminate real-time information to multiple levels of command and domains at such speed. With the increasingly complex and diverse nature of operations, there is an overwhelming need for an information-sharing structure that is both secure and resilient in the face of a more advanced future. This is due to the growing reliance on sophisticated technologies such as AI, machine learning, real-time data analytics, and autonomous systems. All these technologies demand interoperability and communication between different platforms and agencies to achieve effective and coordinated action. However, even with such technological achievements, armed forces frequently find that key tactical-level organizational hurdles impede the complete realization of an optimal information-sharing infrastructure. Research revealed key insights giving out **Organizational Barriers, Cultural Challenges, Resource Constraints, Technological Integration, Cybersecurity Problems, Leadership Role, Training and Awareness, Functional Obstacles and Future-Readiness** as the key issues hindering seamless and robust information sharing architecture amongst armed forces. Having understood the root causes at the end of research certain key recommendations which have emerged to holistically address the issue of achieving secure, robust & futuristic information sharing architecture in Armed Forces in a comprehensive manner are **Organizational Changes, Cultural Transformation, Resource Sharing, Technological Improvements, Cybersecurity Enhancements, Leadership Development, Comprehensive Training Programs and Operational Improvements**.

Keywords: Tactical-level organizational barriers, Secure communication systems in armed forces, Technological integration and interoperability, Organizational structures in military units, Information-sharing architecture, Military systems integration, Command structure, Organizational culture, Technological adoption, Future-proof information systems, Data analytics, Strategic agility.

**A QUALITATIVE STUDY TO DESCRIBE THE ASYMMETRIC OPTION
AVAILABLE TO IA IN THE CYBER DOMAIN TO COUNTER PLA**

By

Col Kulbhushan Sambyal

Despite extensive research on cyber warfare affecting military operations, pragmatic asymmetric strategies for the Indian Army (IA) remain underexplored, especially against a superior technological adversary like China. Most studies focus broadly on cyber warfare, lacking an India-centric perspective. Given the People's Liberation Army's (PLA) technological edge, India must adopt innovative strategies beyond traditional cyber defenses. The study explores non-traditional, actionable cyber options to help the IA neutralise PLA's advanced capabilities despite resource and infrastructure constraints.

Keywords. Cyber Warfare, Asymmetric Strategies, National Security, AI & Quantum Technology, Reforms, R & D, Innovation, Cyber Hubs, Cyber Exercises, Public-Private Collaboration, International Partnerships.

**A QUALITATIVE STUDY TO UNDERSTAND THE DYNAMICS OF POWER
CONTESTATION BETWEEN THE USA AND CHINA TO GAIN DOMINATION IN
SOUTH SUDAN**

By

Col Deepak Kumar Deswal

South Sudan, the world's youngest nation, has become a battleground for geopolitical rivalry between the USA and China. While the USA emphasizes democratic governance, human rights, and sanctions-based diplomacy, China follows a policy of non-interference in internal matters, prioritizing economic investments, particularly in the oil and infrastructure sectors. This study aims to explore the convergence and divergence of their interests and assess its impact on South Sudan's stability, development, and governance.

The research adopts a qualitative methodology, using interviews with Subject Matter Experts (SMEs), military personnel with UN experience, and South Sudanese officials to capture firsthand insights. Key findings of the research highlight that while both nations share an interest in stability, their approaches to engagement with South Sudan differ significantly. The USA's strategy aims to promote governance reforms and humanitarian aid, whereas China focuses on economic leverage without political interference. This competition affects regional stability and South Sudan's internal governance dynamics.

The study recommends a balanced approach for South Sudan to navigate this power contestation by diversifying its economic partnerships, strengthening governance institutions and fostering regional cooperation. This research contributes to understanding global power dynamics and informs policy on geopolitical engagements in fragile states.

Keywords. South Sudan, USA, China, Power Contestation, Influence, Resource Control, Non-Interference Policy, Sanctions, Infrastructure, Democratic Reforms, Governance Reforms, Humanitarian Aid, Human Rights.

**US SPACE FORCE: A QUALITATIVE STUDY TO EXAMINE ITS STRATEGIC
ROLES AND OPERATIONAL EFFECTIVENESS**

By

Col Rahul Gupta, SM

The establishment of the United States Space Force (USSF) in 2019 marked a significant shift in military strategy, recognizing space as a contested warfighting domain. Created to safeguard U.S. national security interests and maintain technological superiority, the USSF faces multiple strategic and operational challenges. While it has achieved notable advancements in space situational awareness, cybersecurity and satellite-based surveillance, the force struggles with role overlaps with NASA and the USAF, gaps in rapid satellite deployment and increasing cyber threats from adversaries like China and Russia. Despite investments in defense infrastructure and collaborations with allied forces and private companies, inefficiencies in coordination and long-term strategic planning hinder its effectiveness. The study highlights the USSF's growing role in global space security while underlining critical areas requiring reform, including a clearer division of responsibilities, enhanced cybersecurity frameworks, and improved rapid response capabilities. The militarization of space, driven by emerging threats and technological advancements, necessitates a balanced approach that ensures resilience while fostering international cooperation. By addressing these challenges and leveraging strategic partnerships, the USSF can refine its operational effectiveness and maintain its role as a leader in space defense and security.

Keywords: United States Space Force (USSF), situational awareness, cybersecurity, satellite-based surveillance, technological advancements

**A QUALITATIVE STUDY TO PRESCRIBE INDIA'S MILITARY OPTIONS IN
RESPONSE TO CHINESE INVASION OF TAIWAN**

By

Col Ashish C Thomas

There is an ever-present Chinese threat to regional peace and security, when it comes to its neighbours and actors in dispute with it. Chinese actions and political signalling throws up several questions for key players in the Indo-Pacific region, as to how might China respond to any given sit. Given Indian interests in the Indo-Pacific, with a substantial flow of its trade running through the South China Sea and India's own ongoing boundary dispute with China, as well as its status as a key member of the Quadrilateral Security Dialogue, makes India a key player. It is therefore imperative that India has a well-formulated response options matrix and execution mechanisms in the event of any type of contingency involving Taiwan. The aim of this dissertation is to provide actionable recommendations for policymakers to navigate this complex scenario effectively. It seeks to answer different facets to the problem such as, to prescribe the most viable military options for India to support Taiwan's defensive efforts and contribute to regional stability while minimizing the risk of escalation into a broader conflict and also suggest ways and means to optimize India's own military capabilities to respond to a conflict against China in future. The sum and substance of this research points towards actions such as India being primarily focussed towards a peaceful resolution of the conflict using its leverages in the DIE-T paradigm and India exercising all possible non-mil leverages to avoid a sit of conflict between China and Taiwan. Any military action by India should be restricted along well-defined areas of India's borders with Tibet, or in the Indian Ocean. These actions should be dictated by the sole aim of protecting India's sovereign territory, including its territorial waters and its exclusive economic zone from inadvertent/ planned ingress. India should be able to devise a middle path, such as in the Russo-Ukraine conflict, where India would be justified in providing logistic and armament sp to Taiwan, US, Japan, South Korea, Philippines and other South East Asian nations, who seek our assistance, without being seen as a formal ally.

Keywords :- Military Options, PLA, Balancing, DIE-T, Capb Building, Strategic Autonomy

**A QUALITATIVE STUDY ON SAUDI ARABIA IRAN RECONCILIATION AND
IMPLICATIONS FOR INDIA**

By

Col Aatif Irfan Momin

Middle East or West Asia is a geostrategic landscape mired in uncertainty and volatility. Its geography nestled between the Europe, Russian Federation and Asia, overlooking the IOR, coupled with its energy resources make it arguably the most pivotal region on the globe. India has manifold interests in the region ranging from its diaspora, ever growing economic energy requirements, neighbourhood security, trade, access to Europe and Central Asia, and sea lanes of communications. Saudi Arabia and Iran have been the leading players through the past century in the Middle East region, intense rivalry to recent rapprochement. This document presents a qualitative study exploring the reconciliation between Saudi Arabia and Iran and its implications for India's regional security interests. The roles of external actors like the US, China, and Russia in facilitating the reconciliation, along with internal domestic factors needs no emphasis. The study examines how this evolving relationship influences regional dynamics, energy security, and connectivity corridors. Ultimately, it assesses the implications for India's strategic interests, considering challenges like China's growing influence and the need to balance relations with various regional powers. The analysis aims to provide insights and recommendations for India to effectively navigate this changing geopolitical landscape. The document recommends constantly studying developments in the Middle East region, given the fluid and dynamic alignments and intertwined interests of various actors. It also suggests that the complex nature of Iran and Saudi Arabia relations needs to be patiently and cautiously observed, and that measures to enable **India to protect its interests** in the region through the **prism of Iran-Saudi relations** should be studied in detail.

Keywords: Iran – Saudi Arabia relations, recent reconciliation, implications for regional security, India interests in **Middle East, India and Iran, India and Saudi Arabia**

A QUALITATIVE STUDY TO ANALYSE THE SECURITY IMPLICATIONS OF SINO-MYANMAR RELATIONS FOR INSURGENCY IN INDIA'S NORTHEAST

By

Col D Sreeramkumar, AC

This study examines the strategic implications of Sino-Myanmar relations on insurgency dynamics in India's Northeast. The region, characterised by diverse ethnicities and challenging terrain, shares porous borders with Myanmar and China, making it vulnerable to cross-border threats. China's growing influence in Myanmar through initiatives like the Belt and Road Initiative (BRI) and the China-Myanmar Economic Corridor (CMEC) is outwardly framed as economic development but carries covert strategic intent. Myanmar's ongoing ethnic conflicts and its inability to exert control over large parts of its territory further amplify these challenges, as Ethnic Armed Groups (EAGs) maintain linkages with Indian Insurgent Groups (IIGs). The findings highlight how China's economic and military leverage in Myanmar and the region's historical and geopolitical complexities directly/indirectly impact India's security landscape. By addressing these dynamics, the article identifies key recommendations for mitigating threats, strengthening regional stability, and fostering a proactive, multidimensional response to counter the evolving challenges.

Keywords. Sino-Myanmar Mil Coop and Its Regional Impact, Shared Ethnicity, & Insurgency Enablers.

**A QUALITATIVE ANALYSIS OF EFFECTIVENESS OF PRIVATE INDUSTRY IN
FOSTERING INNOVATION IN DEFENSE PRODUCTION IN INDIA**

By

Col Vivek Bandal

India is one of the leading defence importers in the world and constitute about 11% of the global imports, particularly due to the nascent Indian Defence Production Sector. However, the situation is undergoing significant transformation due to rapid policy adjustments, particularly in its approach to integrating private industry. The significance of private industry in defence production is widely acknowledged, as it plays a pivotal role in meeting the operational requirements of defence forces in developed nations like the United States. Private industry and academia collaboration is a cornerstone of Research and Development (R&D) in the developed nations, serving as a catalyst for innovation and the creation of advance defence technologies. By integrating cutting-edge solutions, private firms not only strengthen domestic defence capabilities but also bolster export potential, positioning their nations as global players in the defence market.

Considering these successes, this study focuses on the role of private industry in driving R&D and innovation to enhance India's defence exports. The study aims to identify the gaps in latest policies and efforts of the Government of India and explore strategies that can replicate the successes of other nations while addressing India's unique challenges, ultimately fostering a self-reliant and competitive defence ecosystem. The research highlights that supportive government policies, such as the DAP 2020 and 'Make in India' initiatives, enable private sector innovation. However, barriers such as regulatory complexities and limited risk-sharing mechanisms persist.

The study contributes to policy discourse by providing qualitative insights into the interplay between private industry and government initiatives. It also identifies actionable strategies to enhance India's defence innovation and export capabilities. Strengthening public-private collaborations, simplifying regulatory processes and incentivizing risk-sharing are key recommendations.

Keywords: Defence innovation, private industry, public-private partnerships, defence production, defence exports, India, government policies.

**SOCIAL MEDIA USE IN NARRATIVE MANAGEMENT: A QUALITATIVE STUDY
OF ISRAEL- HAMAS CONFLICT 2023-24**

By

Col Jaspreet Singh

In the ongoing **Israel-Hamas conflict**, social media has emerged as a powerful instrument to build favourable narratives. This research has studied the Gaza war to showcase effects of social media discourses and has **generalised the outcomes** for the contemporary conflict arena. **Three-pronged** evaluation of data establishes the ubiquitous nature of social media making the conflicts **transparent & democratised**. The medium has **far reaching** effects on global opinions that shape policy. The exploitation of this vital information space effects conflict termination. The repository of knowledge created is utilised aptly to **propose an apex structure** for Indian Armed Forces for management and conduct of such operations in conflict.

Keywords: Narrative, bias, opinion, moderation, discourse, hostage, artificial intelligence (AI), sympathy, brutality, shape policy.

**A QUALITATIVE STUDY ON RELEVANCE OF MINI AND MICRO UAS IN AIR
WARFARE IN VIEW OF DEVELOPMENT OF C-UAS TECHNOLOGY**

By

Col Satinder Khola

Unmanned Aerial Systems (UAS) has been into the military domain for long, however their usage and concept of deployment in warfare has taken a significant turn in recent years. The recent conflict of Nagorno-Karabakh, Russia-Ukraine war and campaign in Afghanistan, Iraq, Libya and many such battlefields have highlighted the relevance of UAS in a contested air space. However, the present day UAS have certain vulnerabilities that have not been exploited by the existing nascent Counter Unmanned Aerial Systems (C-UAS) architecture. As the capabilities of UAS keep increasing, the need for C-UAS has become increasingly critical. The dissertation analyses the likely future of UAS and their growing capabilities that will make an impact on the air warfare. The study indicates that the C-UAS technology being developed and fielded by various countries including the advancement made by Indian industries will have an effect on the efficacy of UAS in air warfare. The findings show that the UAS will not have the same impunity as enjoyed by them at present because of the emerging technologies in the Counter UAS systems. The competition between UAS and C-UAS systems will depend upon which component of this loop have an upper edge in terms of technological advantage i.e the UAS or the C-UAS technology. The same also indicates, based on the themes received from subject matter experts that there would therefore be an operational need at all levels (national to strategic to tactical levels) to improve on the development of C-UAS technology.

Keywords: UAS, C-UAS, Russia Ukraine war, Conflicts, Technology, military, warfare, aerial, defence,

**A QUANTITATIVE STUDY TO ANALYSE THE INFRASTRUCTURE AND
LOGISTIC REQUIREMENTS FOR INDUCTION OF ELECTRIC VEHICLES IN
FIELD STATIONS OF THE INDIAN ARMY**

By

Col Prabhakar Kumar

The sustainable initiative of the Indian Army to induct Electric Vehicles (EVs) in field stations faces considerable challenges owing to inadequate infrastructure & logistic preparedness to include number of charging infrastructure, limited specialized repair facilities, and a shortage of trained personnel, which would adversely impact operational efficiency and logistics preparedness of the organization. This quantitative study, based on a survey of 415 respondents, evaluates the current state of infrastructure and logistic readiness using statistical analyses, content analysis and systems approach. Findings reveal significant gaps in charging arrangements, maintenance capabilities, and overall preparedness, necessitating a phased approach to EV induction. The study emphasizes the need for augmenting infrastructure development, integration with renewable energy sources, and specialized training programs to enhance operational efficiency and effectiveness. It further recommends that deploying EVs in selected locations in different sectors with existing infrastructure can serve as pilot projects before wider implementation. Additionally, establishing dedicated repair workshops, ensuring spare parts availability, and improving inventory management are recommended to support long-term sustainability. The research highlights that a strategic roadmap involving coordinated efforts between IA, different central and state government organizations academia and industry stakeholders is essential for successful EV integration. Addressing these challenges will enable the IA to establish a resilient EV ecosystem, reducing dependency on fossil fuels while enhancing energy security and aligning with national sustainability objectives.

Keywords: Electric Vehicles (EVs) , charging infrastructure, specialized repair , renewable energy sources, specialized training, long-term sustainability, EV integration

**A QUALITATIVE STUDY TO ANALYSE THE STATUS OF DIGITAL EDUCATION
IN INDIA WITH SPECIAL EMPHASIS ON THE IMPLEMENTATION OF DIGITAL
EDUCATION IN THE TRI SERVICE TRAINING INSTITUTES**

By

Col Hemant Rana

Digital education has transformed teaching methodologies, making learning more engaging, inclusive, and accessible. It plays a pivotal role in bridging educational gaps, especially in shaping military reforms under Indian Army's Vision@2047. This study examines its impact on premier Tri-Service institution like CDM and DSSC which are responsible for training officers who will shape the future of the Armed Forces. Despite strong digital infrastructure, platforms, and leadership support aligned with Digital India initiatives, a lack of clarity in COSC directives on digital education persists. A structured roadmap is essential for seamless implementation. While instructor training programs exist, student engagement and motivation remain critical. Standardized digital proficiency benchmarks will enhance training effectiveness. Key challenges include continuous modernization of infrastructure, a digital divide between technical and non-technical officers, and cybersecurity constraints limiting optimal internet use. Addressing these through strategic reforms and policy shifts will ensure sustainable digital transformation in military education.

Keywords: Army's Vision@2047, educational gaps, Tri-Service institution, CDM, DSSC

**A QUALITATIVE STUDY TO DESCRIBE THE CHALLENGES IMPOSED BY
GREY ZONE WARFARE ON INDIA'S NUCLEAR DETERRENCE STRATEGY IN
THE 21ST CENTURY**

By

Col Narendra Patiyal

India's nuclear deterrence strategy, rooted in its doctrine of No First Use (NFU) and credible minimum deterrence, faces unprecedented challenges in the evolving security landscape of the 21st century. The emergence of Grey Zone Warfare, a blend of conventional, unconventional, cyber, economic, and information warfare below the threshold of full-scale war, has complicated traditional deterrence frameworks. Adversaries increasingly exploit ambiguity, asymmetric tactics, and non-attributable aggression to erode India's strategic posture without triggering a nuclear response.

This study explores how Grey Zone threats, ranging from proxy conflicts and cyber intrusions to economic coercion and disinformation campaigns, impacts India's nuclear deterrence. It evaluates whether India's current nuclear doctrine and force posture remain effective in addressing these evolving threats. The research underscores the need for doctrinal adaptability, cross-domain deterrence, and integrated strategic planning to maintain credible deterrence in the face of sub-conventional aggression.

The study lays emphasis on recalibration for incorporating cyber and space deterrence, hybrid conflict response mechanisms, and enhanced intelligence capabilities to reinforce India's deterrence credibility. By addressing these challenges proactively, India can ensure its credible deterrence strategy remains robust and effective against adversaries leveraging Grey Zone tactics.

Keywords :- India's Nuclear Deterrence, Grey Zone Warfare, No First Use (NFU), Asymmetric Warfare, Strategic Stability, Cross-Domain Deterrence.

**A QUALITATIVE STUDY TO INDIA'S ARCTIC POLICY TO EXPLORE
POTENTIAL PARTNERSHIPS WITH ARCTIC COUNCIL MEMBERS
PERTAINING TO ECONOMIC INTERESTS AND ENVIRONMENTAL CONCERNS
IN THE ARCTIC CONTEXT**

By

Col Aditya Kumar, SM

The Arctic Circle encompasses roughly 14.5 million square kilometres, comprising the Arctic Ocean and territories of Canada, Denmark (Greenland), Finland, Iceland, Norway, Russia, Sweden, and the United States (Alaska). Despite its severe conditions, the Arctic is essential to the global climate system and harbours substantial economic resources, making it a region of considerable strategic and geopolitical importance. As the effects of climate change escalate, the Arctic is undergoing rapid transformations, presenting both opportunities and challenges for the global community. This research delves into to critically assess the appropriation of India's Arctic policy and examine its objectives and priorities in forming partnerships with Arctic Council members, especially concerning economic and environmental matters. This study has demonstrated that though scientifically engaged in Antarctica since 1981, Arctic has managed to remain outside India's mental map . All that is required from the government is sophisticated diplomatic tools to help India take it's "tender steps" in the Arctic and enable its participation in all matters "Arctic", as a responsible stakeholder. Utilising its experience of scientific endeavours , India can embolden its participation in the Arctic with the ultimate objective of gaining access to Arctic energy. The singular most important theme emerging throughout this research is that, in order to have a secure access to the Arctic energy resources, it is essential to have an Arctic strategy in place by putting the Arctic Policy in motion. In-depth analysis of the various opportunities and challenges that the Arctic poses, has been condensed as a "Roadmap of India's Arctic Diplomacy" in the form of a List priority wise, and ranges from short to long term. More importantly, these core focus areas have been identified such that they promote a cooperative approach, provide a sustainable model for development, and ultimately help India gain access to the Arctic energy.

Keywords: Geopolitics and International Relations, Environmental Policy and Climate Change, Global Governance and Multilateral Diplomacy, India's Arctic Policy, Arctic Council Partnerships, Geopolitical Strategy, Environmental Concerns, Climate Change and Melting Ice, Economic Interests in the Arctic, Arctic Resource Exploration.

**A QUALITATIVE STUDY FOR EXPLORING THE POTENTIAL FOR
COLLABORATION BETWEEN NITI AAYOG AND THE MINISTRY OF DEFENCE
IN DEVELOPING A VIBRANT DEFENCE MANUFACTURING ECOSYSTEM IN
INDIA**

By

Capt Gorav Malhotra

This study explores the potential for collaboration between **NITI Aayog and the Ministry of Defence (MoD)** to develop a **vibrant and self-reliant defence manufacturing ecosystem in India**. Given India's evolving security landscape and increasing emphasis on **Aatmanirbhar Bharat**, the research highlights the need for **policy alignment, private sector participation, R&D innovation, and strategic partnerships** to enhance indigenous defence production. Through **qualitative analysis, expert interviews, and thematic assessments**, the study identifies **key areas for collaboration**, including **joint R&D initiatives, defence industrial base expansion, and skill development programs**. Findings suggest that formalizing a **structured collaboration framework** between NITI Aayog and MoD can **accelerate defence indigenization, reduce dependency on imports, and position India as a global defence exporter**. The dissertation recommends **policy reforms, increased funding for innovation, and the establishment of a DARPA-like organization** to drive transformational defence technology development.

Keywords: NITI Aayog, MoD, **DARPA, R&D initiatives, defence indigenization, manufacturing ecosystem, Aatmanirbhar Bharat**

**A QUALITATIVE STUDY TO EVALUATE PREPAREDNESS OF WESTERN NAVAL
COMMAND TO MANAGE A BIOLOGICAL WARFARE INCIDENT AT MUMBAI
PORT**

By

Capt DS Bareth

Mumbai Port, the lifeline of India's economy and a strategic maritime asset, faces a unique and evolving threat of Biological Warfare (BW). This study explores the preparedness of the Western Naval Command (WNC) to counter a potential BW incident at Mumbai Port. Through qualitative research, it uncovers gaps in protocols, vulnerabilities in biosecurity, and challenges in inter-agency coordination, while offering actionable recommendations to strengthen readiness. The findings emphasise the urgent need for dedicated BW protocols, enhanced training, and resource augmentation to safeguard this critical national asset.

Keywords: Biological Warfare Preparedness, Naval Response to Biothreats, Maritime Biosecurity, Biological Threats and National Security, Port Security and Bioterrorism, CBRN (Chemical, Biological, Radiological, Nuclear) Preparedness, Military-Civil Coordination in Biological Incidents, Biodefense Strategies in Ports, Mumbai Port Security Measures, Western Naval Command Disaster Preparedness

**A QUALITATIVE STUDY TO DESCRIBE LESSONS FROM RAMAYANA FOR
PROMOTING PEACE AND SECURITY IN THE REGION**

By

Captain (IN) G Krishnakumar

India has a rich cultural heritage and tradition and is home to epic Ramayana, the principles of which have been followed by ancient rulers to maintain prosperity and peace in the unified Indian subcontinent (Bharat). With the vision of making India great again through the vision of “Viksit Bharat – 2047”, it is essential that the values, lessons and principles relevant to maintenance of peace and security, as mentioned in Ramayana be studied and applied to the present day context for India and her immediate neighbours. The study aims at analysing Indian epic Ramayana and various strategic lessons which ensured peace and security. It focussed on themes like strategic alliances and cooperation, ethical leadership and governance, peaceful conflict resolution and inclusivity and respect for diversity, which emerged from the various alliance lord Ram made with Sugreeva and Vibheeshana during his 14 yrs of journey through the forest. The key findings from the data analysis revealed that the Ruler has to ensure ethical and just governance of the kingdom and must give focused attention to social justice and welfare of its citizens without disturbing sovereignty of the kingdom. It emerged that strategic alliances are essential to bring in unity among countries in region and study brought out the important aspects of alliance building. The study recommended that India should build a separate and strong alliance with all her immediate neighbours to fight a common cause like terrorism, drug trafficking, natural disasters, peaceful IOR etc. Further, India could have core study groups for each and every regional country having specialists in each domain like military, economy, culture, religion, language and the like. These specialists could keep a close watch on day to day affairs of these countries and advice central leadership for actions when deemed essential. This will allow timely intervention and avoid escalation during conflicts affecting Indian diaspora in the region and take care of national interest. India can therefore implement the lessons from Ramayana to become a strong global power and play a vital role in negotiations and establishment of peace and stability not only in the region but in the world.

Keywords. Strategic Alliances, Peace and Security in the Region, Messengers for Conflict Resolution, War as Last Resort, Dharma

A QUALITATIVE STUDY ON LESSONS FROM ECONOMIC STAGNATION OF GERMANY

By

Gp Capt Harpreet Singh Bhati

The study explores how Germany's struggles to secure reliable energy sources, particularly in the wake of the Ukraine-Russia conflict, underscore the importance of strategic partnerships in ensuring energy security. Meanwhile, China's dominance in rare earth minerals essential for renewable energy infrastructure poses challenges for countries like India. India can leverage its vast market and skilled workforce to negotiate favourable energy deals. Germany's economic contraction, triggered by the energy crisis, serves as a cautionary tale. The country's dependence on Russian gas led to supply disruptions and price hikes, while its ambitious renewable energy targets are hindered by intermittency, storage, and high implementation costs. A quarter of German households are now classified as energy poor, and the economic hardship has led to strikes, declining quality of life, and poor social cohesion. To address these interconnected challenges, Germany must take decisive action to ensure energy security, economic competitiveness, and social well-being. The global energy landscape is complex, with progress toward a sustainable energy future hindered by significant challenges. The International Energy Agency's "World Energy Outlook 2024" emphasizes the need for accelerated action, robust policies, and international collaboration to achieve a successful energy transition. India, as a rapidly growing economy, faces the dual challenge of meeting its energy demands while ensuring environmental sustainability. By learning from Germany's experience and implementing actionable insights, India can ease its energy predicament and achieve its vision of Viksit Bharat by 2047.

Keywords. Economic slowdown, Germany, India, Energy transition, Renewable energy, Strategic energy Partnerships, Energy disruption.

**A QUANTITATIVE STUDY ON COMPARISON OF USER ACCEPTANCE OF
PERFORMANCE BASED LOGISTICS (PBL) & NON-PBL IN INDIAN AIR FORCE**

By

Gp Capt Shekhar Singh

Indian Air Force had earlier been using traditional logistics models for functioning of all its systems. However, in last few years PBL had been one of the newer models being used in few of the latest systems acquired, along with continued usage of existing traditional logistics models for older systems. The implementation of Performance-Based Logistics (PBL) in the Indian Air Force (IAF) aimed to enhance logistics performance, operational efficiency and system reliability. However, the successful adoption and effective utilization of PBL depends significantly on user acceptance and satisfaction. Despite its potential benefits, there is limited empirical research on how the perceived usefulness and ease of use of PBL influence user acceptance of PBL within the IAF. This research aimed at studying the user perception on usage of PBL and non-PBL logistics models under use in IAF. The research indicated that there is a positive correlation between ease of use of the logistics model and its perceived usefulness, and vice versa. However, there has been substantial difference between the perception of junior users which indicates that more training on the logistics model they are working with is required. Further it is ascertained that level of user satisfaction on newer model of logistics i.e. PBL is greater than that with conventional logistics model, hence decision makers can take this as an input for all new acquisitions.

Keywords: Performance Based Logistics, comparison of PBL & non-PBL, Indian Air Force, perceived usefulness, ease of use, annual maintenance contract, comprehensive annual maintenance contract.

**A QUANTITATIVE STUDY TO MEASURE CULTURAL DIFFERENCES AMONGST
INDIAN ARMED FORCES OFFICERS AND A NEED FOR JOINT CULTURAL
ORIENTATION**

By

Gp Capt Rakesh Kumar Singh VSM

The realities of modern military operations are increasingly becoming multinational, multicultural and multidimensional and thus integration of IA, IN and IAF under a unified command is posing a challenge. Each of the three Services possesses distinct organisational culture. The organisational cultural differences and the differences within Indian Armed Forces towards jointmanship is an unresolved world. For adapting and synergising integration amongst Indian Armed Forces, what is the Level of organisational culture, perceptions, differences, need for joint cultural orientation etc are unknown. The research work is an attempt to unknot the intricacies and quantitatively recommend insights to overcome the impediments towards integration of three services.

Keywords: multicultural and multidimensional , integration, organisational culture, jointmanship, joint cultural orientation

**A QUALITATIVE STUDY TO DESCRIBE THE CHALLENGES IN
DEVELOPMENT AND DEPLOYMENT OF UNMANNED AIRCRAFT TRAFFIC
MANAGEMENT (UTM) SYSTEM IN INDIA**

By

Gp Capt GJ Singh

India has set a lofty target to dominate the drone market globally by 2030. This vision aligns with India's broader ambitions for technological advancement and self-reliance. The rising drone population necessitates a robust UTM system to ensure their safe and efficient operation in the country. This aspect becomes more imperative as the airspace needs to be shared by both unmanned and manned aircraft for their simultaneous and smooth operations. With the present capabilities, it is difficult for the conventional Air Traffic management system to manage India's UAV traffic. The study brings out the difficulties encountered in the creation and implementation of UTM systems in the country.

Keywords UAV, UTM, traffic management, drone, technology, and challenges.

**A QUALITATIVE STUDY TO ANALYSE THE IMPACT OF CORPORATE ETHICS
ON MORALS OF INDIAN ARMED FORCES OFFICERS PROCEEDING ON
VOLUNTARY RETIREMENT**

By

Comdt Rahul Malareddi

The study explores how corporate ethics and culture influence the moral values of Indian Armed Forces officers who transition to civilian careers after voluntary retirement. It aims to understand whether exposure to corporate ethical frameworks challenges or reinforces the moral beliefs instilled during their military service. The research problem centers on the shift from a military environment, which emphasizes a strict moral code focused on duty, loyalty and service, to a corporate setting where ethics often balance profitability, social responsibility and legal compliance. This transition raises questions about how the moral perspectives of retired officers are impacted by their new professional environment. The study adopts a qualitative approach, using in-depth interviews and thematic analysis to gather data. Participants include serving and retired Armed Forces officers, as well as corporate employees, allowing for a comparison of moral values across these groups. The research is grounded in an interpretivist and constructionist philosophical orientation, focusing on the lived experiences of the participants. Key findings reveal that serving Armed Forces officers prioritize values such as utilitarianism, loyalty, honesty and justice. In contrast, retired officers, after exposure to corporate culture, show a significant increase in adherence to professional ethics and a decline in utilitarianism. Corporate employees also prioritize professional ethics, justice and honesty, aligning closely with retired officers but with less emphasis on loyalty and utilitarianism. The study concludes that corporate culture and ethics significantly influence the moral values of retired Armed Forces officers. While military morals remain deeply ingrained, corporate environments reshape certain aspects of moral reasoning, enhancing focus on professional ethics and reducing utilitarian tendencies. However, the research has limitations, including a small sample size, time constraints and the abstract nature of measuring morality. Despite these limitations, the study provides valuable insights into the moral transitions experienced by retired officers in corporate settings. It highlights the dynamic nature of moral reasoning and the influence of environmental context on ethical behaviour, offering practical implications for organizations that hire retired military personnel and suggesting avenues for future research, such as larger-scale studies and longitudinal approaches.

Keywords. Retired Armed Forces officers, Utilitarianism, Professional Ethics, Corporate employees, Morality, Corporate ethics

**A QUANTITATIVE STUDY TO ANALYSE THE EFFECT OF PERCEIVED
AUTHENTIC LEADERSHIP ON WORK ENGAGEMENT IN INDIAN ARMY**

By

Col Nitika Singh

This study examines the impact of **Perceived Authentic Leadership (AL)** on **Work Engagement (WE)** among Indian Army personnel, emphasizing the role of **self-awareness, relational transparency, balanced processing, and internalized moral perspective** in fostering commitment and motivation. Grounded in **Social Exchange Theory (SET)**, the research surveyed **652 army personnel** using a structured questionnaire and employed **factor analysis and regression analysis** to validate findings. Results indicate that soldiers who perceive their leaders as authentic exhibit **higher vigor, dedication, and absorption** in their roles, reinforcing the significance of ethical leadership in military effectiveness. The study highlights the need for **leadership development programs** that incorporate AL principles to enhance soldier morale, engagement, and organizational performance. It concludes with recommendations for fostering **trust-based leadership, ethical decision-making, and transparent communication** in military leadership training, while also suggesting further research into moderating factors like psychological safety and organizational culture.

Keywords: Army, Authentic Leadership, Work Engagement, Productivity, Team work

**A QUALITATIVE STUDY TO ANALYSE RELEVANCE AND MODELS OF COG
FOR MECHANISED FORCES OPERATIONS IN THE MOUNTAINOUS TERRAIN
OF LADAKH: AN ANALYTICAL FRAMEWORK DEVELOPMENT**

By

Col KR Lonari

The mountainous terrain of Eastern Ladakh considerably impacts the identification and analysis of Center of Gravity for Mechanised Forces operations. The defiant geography coupled rarified atmosphere changes the conventional paradigm of Mechanised Operations. This Operational Environment plays a pivotal role in CoG identification and articulation. There is need to deeply analyse the relevance the developing a tailored CoG analysis framework for Eastern Ladakh requires the incorporation of detailed terrain analysis with MF warfare principles. Such a framework empowers military planners with a more nuanced understanding of the operational environment, facilitating effective strategy formulation and decision-making in this strategically vital region. The dissertation analyses five relevant CoG models and extracts value from the case studies of various mechanised operations conducted in terrain as obtained in Ladakh to arrive at appropriate methodology to derive maximum dividends for enhancing the operational efficiency of Mechanised forces in High Altitude region. The dissertation analyses the relevance of the concept of CoG for these operations over Critical Factor Analysis to arrive at factor which maximizes the combat potential of the mechanised forces in given situation using the Analytical Hierarchical Process.

Keywords : Center of Gravity, Eastern Ladakh, Mechanised Forces, Critical Factor Analysis, combat potential, operational envoriment.

**A QUALITATIVE STUDY TO ANALYSE THE MODELS FOR IMPLEMENTATION
OF NFU IN THE ARMED FORCES**

By

Col AK Singh

The Armed Forces org structure is considered to be the **steepest amongst all government organizations**, with only a select few donning higher ranks, not because of **meritocracy** but for **want of vacancies, which** impacts various factors of these officers to include respect, self esteem, prestige, motivation and **monetary aspects**. Post a long outstanding demand, the NFU is now being considered for grant to the Armed Forces. Being a **Rank based org** with **varied promotion pattern** across the services and within the services in various arms, there exists a policy with respect to MACP (Modified Assured Career Progression) for the PsBOR, however apprehensions exist on the functional implementation of the NFU and **impact on meritocracy** in the Armed Forces. The study employs a **qualitative research** method to explore and develop models for implementing Non-Functional Upgradation (NFU) for Indian Armed Forces officers. The study found that the need for NFU by the Armed Forces Officers is more than just physiological needs. The underlying mental model corresponds to the rightful place in the society. Having analyzed three models, the study **recommended a structure to delink rank and pay**. An officer continues to get **promoted based on his service performance**, while he progresses on the **pay band based on his length of service**, which is equivalent to the civil structure. The *ibid* method based on any model would entail retaining the org structure of the forces while addressing the core issues of status equivalence. A well conceptualized NFU will better the Civil Military Equivalence and therefore increase the respect of the Armed Forces in the society. An ill conceptualized NFU may lead to Rank Inflation, thereby adversely impacting the charm and prestige in ranks, adversely impacting the meritocracy, talent retention, combat & operational efficiency and a cascading effect on the motivation in the Armed Forces.

Key Words: – Non Functional Upgradation, Central Pay Commission.

**A MIXED METHOD STUDY ON ASSESSING THE IMPACT OF TERMINATING
GURKHA RECRUITMENT FROM NEPAL ON NEPAL'S MACROECONOMIC
FACTORS AND ITS IMPLICATION FOR INDIA'S NATIONAL SECURITY**

By

Col Satish Patil, SM

The study assessed the impact of termination of Gurkha recruitment by Nepal on macroeconomy of Nepal and security implications for India. It found that while most Nepalese oppose the decision, political nationalism and tripartite agreement debates drive it. Nepal fears that weapon-trained Agniveers may remain vulnerable to exploitation by non-state actors after release. Though the short-term economic impact is rural-focused, long-term effects include declining remittances (68% drop if Agnipath is accepted), rising unemployment, and growing dependence on China. Through the simulation, study found that by 2080, Nepal will have negligible pensioners and loss of opinion shapers in favour of India. As a alternative, Nepalese youth may join foreign militaries, including China's which would be a security concerns for India. Thus study proves that the move risks pushing Nepal closer to China, affecting India's strategic influence. Border disputes and past blockades further fuel China's outreach. While immediate threats are limited, China's growing foothold in Nepal poses long-term risks. India must engage Nepal diplomatically, enhance defence cooperation, strengthen economic ties, and explore alternative recruitment strategies to maintain historical military ties and counter external influences.

Keywords. Gurkhas, Agniveer scheme, economic impact, mitigation strategies by GoN, Chinese influence in Nepal, security implications for India.

**A QUALITATIVE STUDY OF INDIA'S DEFENCE MANUFACTURING
ECOSYSTEM TOWARDS ENHANCING DEFENCE EXPORT POTENTIAL**

By

Col Amol S Kalel

In spite of concrete government initiatives like Make in India and Atmanirbhar Bharat, the **Indian defence manufacturing sector** continues to be faced with challenges to increase export potential and achieving global competitiveness. These issues include dependence on imported technologies, insufficient linkages between the public and private sectors and restricted investment in research and development. Such factors substantially hinder the capacity of the ecosystem to place itself as a credible exporter of defence products within an intensely competitive international market. To improve the defence export capabilities of India and establish a strong and independent manufacturing infrastructure, this **research attempts to qualitatively discuss these issues and present recommendations for enhancing India's defence export potential**. The **study results have provided significant insight** into the critical dynamics that affect the defence manufacturing scenario of India, particularly with respect to issues like **public-private collaborations, research and development, supply chain logistics, infrastructure and entrepreneurial enterprises**. The **findings point to the strengths and weaknesses of the current system** and hence highlight a sophisticated understanding of the relationships among the stakeholders, policies and technological advancements.

Keywords. Defence Manufacturing, Defence Export, Public and Private Sectors, Defence Infrastructure & Ecosystem.

**QUALITATIVE STUDY ON CHINA'S STRATEGIC AND TECHNOLOGICAL
CAPABILITIES IN POTENTIAL WATER CONFLICT SITUATION WITH INDIA**

By

Col Ravi Pandey

China has rapidly expanded its hydropower infrastructure especially on transboundary rivers. The focus area of research is the Yarlung Tsangpo (Brahmaputra), since it raises concerns over water security, strategic dominance, and geopolitical stability along borders with India. Thematic analysis is used along with hydrological risk assessment, and sentiment analysis. Through this, the research identifies strategic countermeasures for India to secure its water resources and geopolitical interests.

Keywords: Water Wars between China and India, Water Terrorism, Hydro resilience, Water Scarcity, Water Security Perceptions, Technological and Financial asymmetries, Water diversion, Flooding, Geologically fragile Region

**A QUALITATIVE STUDY ON INDIA'S EXPORT POTENTIAL TO EXPLOIT
MARKET OPPORTUNITIES IN SOUTH AND SOUTH EAST ASIA**

By

Col Arjun Singh Tomar

Despite having the world's third largest military, India continues to heavily on imports for its defence needs. While a notable progress has been made in past decade, substantial efforts are required to elevate India's defence sector to a level of global competitiveness. This research identifies key gaps, evaluate India's defence export landscape and proposes strategic reforms including R&D incentives, streamlined export regulations and diplomatic initiatives to position India as a Global Defence Exporter by 2035.

Keywords. Geo strategic Importance, Defence Manufacturing , Defence Exports, Strategic Partnerships, R&D Investment, Make in India, Atmanirbhar Bharat, Market Opportunities and Technology Transfer.

**A QUALITATIVE STUDY ON STRENGTHS AND SHORTCOMINGS OF INDIAN
MODEL OF SECULARISM IN COMPARISON WITH WESTERN MODELS**

By

Col Rajiv Koner

The principle of Secularism is a universally recog as one of the bedrocks of democracy (Rawls). Secularism advocates for the separation of Church from State and equal rights and treatment for all citizens irrespective of Faith. Although, a Globally accepted principle, it has evolved differently in diff parts of the world. For e.g. India prac secularism differently from the West, especially France (Chaterjee, 1998). This study aims to examines the str and shortcomings of the **Indian Model of Secularism** (IMS hereafter), contextualising its features in comparison with the **French Model of Secularism** (FMS hereafter). This research delves into the concept of Secularism as practiced in the Indian context. IMS emphasises Equality (Principled Distance) rather than Neutr (Universalism/ Secularism) as is practiced in the West. However, there are certain shortcomings in the IMS wrt implementation. The research makes recommendations wrt structural reforms in the Indian Administrative structure to strengthen the IMS.

Keywords: Secularism, Equality (Principled Distance) , Universalism

**A QUALITATIVE STUDY ON MANIFESTATION AND IMPACT OF ECONOMIC
TERRORISM IN J&K AND ROLE OF ARMED FORCES TO REDUCE THE
IMPACT**

By

Col Amit Kumar

Economic terrorism in Jammu and Kashmir entails an attempt to hamper the region's economy, stall the proper functioning of democratic institutions and create socio-political unrest. While the conflict prevalent in the erstwhile state for more than three decades is political in nature, terrorism has been employed as an instrument to disrupt the economy for the political gains. Such a process has resulted in the underdevelopment, unemployment and alienation in the region. Therefore, the present research seeks to explore the manifestation and impact of terrorism in the economic sectors of J&K and therefore, to look for means for stabilizing the economy. The research also proposes strategies for the armed forces to contribute to the economic stability of the region. Based on the qualitative research strategy and systems approach, the study reveals illicit economy, forced migration, radicalization and lack of community engagement as major issues underlying economic terrorism in J&K. The study proposes stringent action on illegal economy, employment generation and infrastructure development in order to foster economic stability. The research while acknowledging the paramount importance of armed forces in the process also suggests the formation of Integrated Counter-Terrorism Task Force (ICTTF) in order to prevent economic terrorism and ensure policy implementation.

Keywords: Economic terrorism , democratic institutions, underdevelopment, unemployment and alienation , illicit economy, forced migration, radicalization, employment generation and infrastructure development

**A QUALITATIVE STUDY TO EXPLORE LESSONS OF INTRINSIC MOTIVATION
THROUGH LENS OF UPANISHADS**

By

Col Arvind Chauhan

The philosophical teachings of Upanishads guide individuals on a voyage of self-discovery. These teachings provide a purpose of life, nurturing our inner strength and resilience in the face of life's challenges. The key concepts of the Upanishads - **Atman, Brahman, Dharma, Vairagya, Jnana and Self-Realization**, offer profound insights into the nature of intrinsic motivation and provide a spiritual framework for achieving personal growth and fulfillment. By harnessing these teachings in life, individuals can cultivate intrinsic motivation driven by an inner sense of purpose, fulfillment and connection to the divine while addressing challenges of societal materialism and attachment to external rewards. The study conducts a qualitative analysis to identify concepts and practices from the Upanishads to sustain Intrinsic motivation. This research highlights a deep connection between timeless wisdom & contemporary paths to personal growth. The study obtained key lessons on intrinsic motivation of **pursuit of knowledge, detachment, righteous duty, meditation & self-inquiry, self-realization, self-awareness, immortal soul and mindful decision-making**. The study encountered challenges of subjectivity and interpretation as there is a lack of existing research on the application of Upanishadic teachings on intrinsic motivation and language barriers as the Upanishads, originally written in ancient Sanskrit, posed comprehension challenges.

Keywords: detachment, righteous duty, meditation, self-inquiry, self-realization, self-awareness, immortal soul, Upanishads

**A QUALITATIVE STUDY TO ANALYSE ROLE OF CLIMATE CHANGE IN FOOD
SECURITY IN INDIA AND RECOMMEND SOLUTIONS**

By

Col Vivek Yadav

The right to food is an inherent human right which is becoming increasingly under siege due to the twin phenomena of climate change as well as population explosion. The problems of climate change and food security are issues that must be handled with great importance by India. Climatic changes have put tremendous strain on agricultural resources fueled by the ever growing population. In order to sustain these pressures, India has to look for policies which can ensure harmonious agricultural development.

This research seeks to evaluate the extent at which climate change affects food security in India and investigates its correlation with agricultural productivity, food availability and consumption behavior. Autonomously, the research addresses the profound aspect of food insecurity and its cascading effects on the economy, society and environment. Understanding the intricate interplay between climate change and food security is important in formulating policies, which will be able to adequately address the issues at hand and mitigate risks for the country in the future.

Given the consequences of climate change, India is required to adopt an all rounded strategy for climate-proofing its agriculture. Comprehensive developing agriculture means that clear laws should be established, climate-friendly agriculture should be advocated, new technologies should be imported and farmers should be provided with enough skills and means to cope with climate change. Similarly, to enhance food security, it is crucial to further diversify rural economies, develop social protection systems, and reduce food loss. In a world affected by rapid climate change, India can establish an efficient agricultural system that supports the livelihoods of millions of farmers while feeding its growing population. This includes creating an active policy environment, providing financial assistance, and mobilizing the society.

Keywords: Climate change, agriculture, policies, modern techniques, farmers, climate resilient, food security

**A QUANTITATIVE STUDY ON MEASURE OF SPIRITUAL
INTELLIGENCE & ITS CORRELATION WITH RESILIENCE AMONGST
MID LEVEL INDIAN ARMY OFFICERS (COLS/LT COLS)**

by

Col Akshay Khanna

IA is the infallible instrument of the Indian State & being an Officer led Army, the emotional and psychological wellbeing of the officer cadre is of utmost importance. To sustain and successfully perform in the modern operational environment characterised by Volatility, Uncertainty, Complexity and Ambiguity, an officer needs to display a very high level of Resilience. IA, as an organisation devotes immense efforts towards harnessing and strengthening this very quality of Resilience. SI, which is the ability to transcend the immediate and integrate spiritual values into everyday life, provides a framework for the same. **This dissertation, delves into the unexplored subject of SI within the context of mid-level IA officers , with a primary focus, on the potential impact for strengthening Resilience.** Being a rather unexplored domain, this study attempted to first ascertain the prevalence of SI and thereafter study the impact of SI on Resilience amongst mid-level Indian Army officers.

Keywords: infallible instrument , emotional and psychological wellbeing, operational , environment , Resilience

**A QUALITATIVE STUDY ON CHALLENGES IN IMPLIMENTATION OF
TECHNOLOGICAL INITIATIVES OF NEP 2020 IN SCHOOLS UNDER AWES AND
MEASURES TO CIRCUMVENT**

By

Col Gaurav Singh

The ambitious technological reforms outlined in NEP 2020 present significant challenges in their implementation. These include infrastructural constraints, especially in rural areas, the need for extensive teacher training, alignment with existing state education systems, and ensuring sufficient funding and resources. Additionally, the integration of technology, while promising, poses several impediments related to digital literacy and access to digital tools. Addressing these challenges requires coordinated efforts from government bodies, educational institutions, and stakeholders to translate the policy's visionary goals into tangible outcomes. At the Indian Army level, schools under AWES are presented with similar challenges. Therefore, there is an indispensable requirement to identify these challenges at the granular level and propose measures to circumvent these through policy provisions and mitigate the voids, wherever necessary. **This study has identified the necessity to augment internet connectivity in schools under AWES & the residential areas in military cantonments and proposes promulgation of benchmarks for infrastructure and capabilities in schools by AWES** to facilitate smooth implementation of the technological initiatives of NEP 2020. Further, the study highlights the indispensable requirement of provisioning additional funds for the relatively smaller schools under AWES and refinement in financial expenditure policy for all the schools. These outcomes are envisaged to ultimately enable India to become a developed nation by facilitating achievement of the goals adopted for Vision India 2047.

Keywords. Infrastructural constraints, Teacher Training, Digital literacy, Policy provisions, sufficient Funds

A QUALITATIVE STUDY TO ASSESS INDIA'S AIR DEFENSE CONTROL AND REPORTING SYSTEM ARCHITECTURE TOWARDS CAPABILITY BUILDING OF A ROBUST AIR DEFENSE INFORMATION SHARING ARCHITECTURE

By

Col Harshvardhan

The Air Defense Command and Reporting System (ADCRS) is a critical component of national defense architecture, ensuring real-time integration of sensors, shooters, and command networks across domains. With the rapid evolution of aerial threats, including fifth-generation aircraft, unmanned aerial systems, hypersonic missiles, and electronic warfare capabilities, the existing ADCRS architecture faces challenges in interoperability, automation, and cyber resilience. This research assesses the criticality of ADCRS in air-land operations, identifies key operational gaps, and recommends modernization strategies through technological advancements, inter-service integration, and joint training programs. The study highlights the importance of AI/ML, quantum computing, multi-sensor fusion, and automated command structures to transform ADCRS into a future-ready framework. A detailed thematic analysis, supported by expert interviews and secondary research, reveals critical shortcomings in inter-service connectivity, legacy sensor deployments, and cyber vulnerabilities, necessitating a unified approach for enhanced operational coherence. The integration of AKASHTTEER with IACCS emerges as a pivotal step toward achieving seamless interoperability, yet full automation and standardization remain paramount. Addressing cyber threats through hardened protocols, redundant communication networks, and Electronic Counter-Counter Measures (ECCM) is essential to ensure resilience against jamming, spoofing, and malware attacks. The study also underscores the need for advanced simulation-based joint training, standardized TTPs, and streamlined procurement processes to optimize ADCRS capabilities in a time-bound manner. By adopting a structured roadmap for modernization, incorporating cutting-edge technologies, and fostering jointness across defense services, the research provides actionable insights to transform India's ADCRS into an integrated, agile, and future-proof air defense information-sharing architecture.

Keywords: Air Defense Control and Reporting System, Command and Control Structures, Interoperability, Jointness, Cyber, Electronic Warfare, Air Space Management, Redundancy, Automation, Sensor Fusion, Modernization, AKASHTTEER, IACCS.

**A QUANTITATIVE STUDY ON IMPACT OF GOVERNMENT'S INDIGENOUS
GOODS PROMOTION SCHEMES ON CONSUMER PREFERENCE FOR CHINESE
IMPORTS:**

by

Col Himanshu Panday

India's economic resilience hinges on self-reliance, and initiatives such as *Make in India* and *Atmanirbhar Bharat* have sought to alter consumer behavior towards domestically manufactured goods. This study empirically evaluates their efficacy, revealing that **72% of Indian middle-class consumers are aware** of these campaigns, yet only **68% prefer indigenous products**, with **price sensitivity and perceived quality gaps** as key deterrents. Despite this, the research identifies a significant **correlation ($r = 0.52$)** between consumer awareness and purchase preference, affirming that **strategic interventions can accelerate this shift**.

To sustain momentum, the study advocates **a comprehensive strategy that extends beyond manufacturing to consumer engagement and service sector dominance**. It underscores the need for **aggressive marketing campaigns**, leveraging digital platforms and regional outreach, while **introducing 'Made in India' as a consumer-centric complement to 'Make in India'**. **Tax incentives, subsidies, and quality assurance frameworks** are recommended to ensure indigenous products remain competitive. *Behavioral economic interventions*, such as **strategic product placement, loyalty programs, and consumer incentives**, could nudge preference further.

Additionally, **India's robust Global Capability Centers (GCCs) and STEM-driven service exports** offer an alternative pathway to self-reliance, with **100% value addition potential** surpassing manufacturing. A dual-pronged strategy—**fortifying domestic production and amplifying India's global service footprint**—can decisively reduce import dependence on China while fostering a resilient economic future.

Keywords: Make in India , Atmanirbhar Bharat, indigenous products, consumer engagement , service sector dominance, STEM-driven service exports

A QUALITATIVE STUDY ON ETHICAL LEADERSHIP LESSONS FROM BHISHMA AND VIDHURA: A DESCRIPTIVE ANALYSIS IN THE CONTEXT OF THE ARMED FORCES

By

Col KV Singh

The *Mahabharata*, one of the most revered and profound epics of India, presents an intricate narrative that not only chronicles the events of a great war but also serves as a deep reflection on human nature, morality, and ethical leadership. Within this epic, two characters Bhishma and Vidura emerge as paragons of ethical leadership, embodying timeless principles of integrity, wisdom, and moral courage. Their decisions, actions, and teachings provide invaluable lessons on navigating the complex challenges of leadership, making them as relevant today as they were in ancient times.

Despite their profound influence, the ethical leadership principles demonstrated by Bhishma and Vidura have not been sufficiently explored or integrated into contemporary military leadership practices. The aim of this research is to bridge this gap by analyzing their leadership styles and ethical frameworks, extracting key lessons that can be applied to modern day leadership in the Armed Forces. By examining the moral dilemmas faced by these characters and the choices they made, this research intends to uncover valuable insights that can guide today's military leaders in their decision making processes.

The research proposes that the integration of these ancient leadership principles into the current military training frameworks could foster a new generation of leaders who are not only capable but also ethically grounded. By emphasizing values such as duty, integrity, moral courage, and accountability, the study envisions a transformation in the way leadership is practiced within the military. Ultimately, this research aspires to contribute to the ethical development of military officers, ensuring that they emerge as resilient, principled, and effective leaders who are well equipped to tackle the complex challenges of modern warfare and defense strategies.

Keywords: Mahabharata, Ethical Leadership, Bhishma, Vidura, Armed Forces, Military Leadership, Integrity, Moral Courage.

**A QUALITATIVE STUDY TO DESCRIBE SPACE TECHNOLOGIES CRITICAL
FOR FUTURE MARITIME SECURITY NEEDS OF INDIA**

by

Col Mriganka Paul

The 21st century has been characterized by the astounding rise of China in the World. The world is now witnessing an expansionist & assertive China with a powerful & ever-growing PLA Navy. **Our relations with a resource-hungry China are not friendly.** China has made major attempts to stall our rise as a peaceful regional power. It is also acutely live to the fact that its SLOC passing through the Indian Ocean, are at risk in case of a conflict with India. To address this, it has created a powerful PLA Navy & has created dual use bases at ports in Pakistan, Sri-Lanka, Burma & Djibouti (string of pearls) to support its Task Forces/Carrier Based Groups (CBGs) for operations in the IOR. The frequent deployment of PLA Navy Research Vessels, Submarines & Task Forces/CBGs in the IOR are also likely to see a major rise in next 05 to 10 yrs. The **IN** will be the **primary respondent** to such threats. Its **coordinated, networked & multi domain operations** are the need of the hour and will require deployment of **capable space assets** with the latest technologies. Hence, there is a need for **comprehensive study of advancements in the field of space technologies for maritime security to support the requirements of IN** for its operations in the next 05 to 10 years. This research delves into the **domains of maritime operations framework by the IN and the space systems required to support the same.** It identifies the **advancements in the field of space technologies and describe those found critical for incorporation in space systems for IN** for ensuring maritime security of India in **future 05 to 10 years.** Specifically, **this research brings out the technological resources (in terms of satellite systems) needed by IN for carrying out its operations.** These resources will have to be made available by the Govt of India, through collaboration between the IN, ISRO, DRDO & other private players operating in the connected domains. **Certain core technologies have also been identified & recommended for adoption which will be crucial for direct/indirect capabilities of satellites to be launched in short/midterm.** Action on the recommendations would translate into the required capabilities by the IN for its effective NW Centric & effective warfighting capabilities against an increasingly assertive & capable PLA Navy.

Keywords: Maritime Domain Awareness (MDA), ISRO, Indian Navy, Defence, Satellites, Space Technologies, Communications, ISR, Navigation, Indian Maritime Security Strategy (IMSS) 2015, Space Based Surveillance (SBS) & Sea Lines Of Communications (SLOC)

**QUALITATIVE RESEARCH TO EXPLORE VALUE BASED LEADERSHIP
PRINCIPLES FOR MODERN MILITARY LEADERS THROUGH THE LENS OF
THE RAMAYANA**

By

Col Piyush Pant

The Indian Armed Forces have long been guided by value-based leadership, rooted in cultural and historical traditions. However, socio-economic transformations and evolving military challenges necessitate a re-evaluation of leadership principles. The Ramayana, one of India's oldest epics, offers a repository of ethical and moral leadership principles that remain relevant in modern military contexts. This research examines the fundamental leadership attributes embodied in the Ramayana—**Dharma (duty), Satya (truth), and Karuna (compassion)**—and assesses their applicability to contemporary military leadership. By employing a **qualitative research approach**, including **structured interviews with subject matter experts and military officers**, the study identifies core leadership traits such as **integrity, self-discipline, fairness, and ethical decision-making**, which are crucial for modern military leaders facing complex operational and moral dilemmas. The research underscores that **value-based leadership fosters moral responsibility, enhances ethical decision-making, and strengthens the trust between leaders and subordinates**. It also highlights challenges in integrating ancient leadership wisdom into modern military structures, including organizational resistance and operational constraints. To institutionalize value-based leadership, the study **recommends embedding these principles into military training curricula, leadership development programs, and policy frameworks**. By adopting the **ethical and strategic wisdom of the Ramayana**, modern military leaders can cultivate a **resilient, ethical, and duty-driven command ethos**, ensuring both operational excellence and moral integrity in the armed forces.

Keywords: Value-Based Leadership, Military Leadership, Ethics, Ramayana, Strategic Leadership, Ethical Decision-Making.

**A QUALITATIVE STUDY TO DESCRIBE THE MEANING & RELEVANCE OF
SEABED WARFARE IN CONTEXT OF THE INDIAN OCEAN REGION (IOR)**

By

Capt(IN) Soubhagya Roul

Seabed warfare refers to military operations conducted on or near the ocean floor. It encompasses a range of activities, including the deployment and detection of underwater mines, unmanned vehicles and surveillance systems, as well as the sabotage or protection of critical underwater infrastructure like communication cables and energy pipelines. Through a thematic analysis of the interviews with various SMEs, the various stakeholders in the seabed domain and nature of their complex interactions has been identified. While far & few papers have been written on the subject and the Indian Navy has been identified as the primary stakeholder, this research brings out that the nature of the problem is far more complex. India's current approach to seabed warfare reflects a nascent but evolving understanding of its strategic significance. Addressing challenges such as fragmented ownership, technological gaps and environmental sensitivities requires a comprehensive policy framework, substantial R&D investments, and multi-stakeholder collaboration. Establishing a dedicated seabed warfare department / directorate or integrating it into existing structures of NMSC could be a logical starting point for ensuring India's readiness in this emerging domain. Therefore, based on the CATWOE analysis of the complex problem, a Responsible, Accountable, Consulted & Informed (RACI) Matrix has been proposed. The same identifies the specific roles and responsibilities of each stakeholder involved in seabed governance and warfare. This clarity reduces ambiguity, ensures accountability and prevents overlaps or gaps in tasks.

Keywords: Seabed Warfare, IOR, Undersea Infrastructure, Hybrid Warfare, Surveillance, Autonomous Underwater Vehicles (AUVs), Remotely Operated Vehicles (ROVs), Geopolitical Tensions, Submarine Warfare, Maritime Security, International Maritime Law, UNCLOS.

**A QUALITATIVE STUDY ON ENHANCING INTER-AGENCY COORDINATION:
EVALUATING ROLE OF NATIONAL MARITIME SECURITY COORDINATOR IN
STRENGTHENING COASTAL SECURITY CONSTRUCT OF INDIA**

by

Capt (IN) Vaibhav N Janbandhu

India is a maritime nation and hence maritime security is intertwined with national security and economic growth of the nation. The coastal security forms an integral part of India's maritime security and is looked after by various agencies functioning under central and state administration. Inter-agency coordination forms the foundation for effective and efficient coastal security construct. However, the process of overhauling the coastal security framework has been moving at a snail's pace since the 26/11 Mumbai Terror attacks. This research delves deeper into the aspects which are hindering the enhancement of inter-agency coordination and the role of the National Maritime Security Coordinator towards strengthening the coastal security framework of India. A system analysis model has been used to identify the various roadblocks and certain leverages have been identified to address the structures and mental models. The NMSC at the apex level holds the key to streamline coordination issues at the highest ministerial and headquarters level. The issues at lower level will automatically resolved with higher formations being in sync with each other. The issue of coordination between centre and state administration also needs to be addressed holistically as it entails taking ownership, responsibility and accountability for the much neglected issues related to coastal security.

Keywords : Coastal security, Indian Navy, Marine Police, Indian Coast Guard, NMSC, coordination

**APPLICATION OF CONCEPT OF 'NATION STATE' ON INDIA AND FINDING ITS
ORIGINS ON THE INDIAN HISTORY: A QUALITATIVE ANALYSIS**

By

Gp Capt Parijat Jha

'Nation State' is the most widely accepted form of political legitimacy in today's times. In the threshold of becoming a great power, is India able to truly define itself as a Nation-state? The Indian community is highly diverse in terms of religion, language, caste, and ethnicity – a paradox when seen in context of the understood definition of Nation-State. Current debates on defining the country in the paradigm of a 'Nation' and further tracing this one-ness to as far as possible in history can act as a fracturing as well as integrating force. To add more confusion, there are also fresh arguments to describe this country with alternative prepositions like 'Civilisation-state' or 'State-nation'. This dissertation attempts to resolve the dissonance on the subject. Not only does it explain the contours and tenets of a Nation-State but it also identifies a start point in history, from where India can call itself a Nation-State, thus ending the debate once for all. In the process it also dismantles few misconceptions and makes few recommendations.

Keywords: Anthropology, Modern State, Westphalia, Nation State, Geography, Sovereignty, Suzerainty, Identity, Civilisation State, Indian History

**A QUALITATIVE SWOT ANALYSIS OF A LEADERSHIP TRAINING INSTITUTE
OF INDIAN AIR FORCE**

By

Gp Capt Dipendra Bhadoria, VM

The Officer cadre of IAF is key to meet the challenges in an ever-changing geopolitical scenario and technology disruptions. After their commissioning as Officers of IAF, their growth as Leaders is looked after by IAF. This is done informally and traditionally in units and sections and formally and Centre of Leadership and Behavioural Sciences (CLABS) for Squadron Leaders (Sqn Ldr) and below. This research aims to undertake a qualitative Strength Weakness Opportunities and Threat (SWOT) analysis of CLABS keeping in mind IAF's present mental model, future challenges internally and externally and desired character and qualities IAF officers must possess to navigate these challenges. This study is aimed at Officers below the Rank Group Captains (Gp Capt). This research study yielded significant findings that could transform the way IAF educates its leaders. The important aspects brought forth by the study are that majority of IAF officers have not understood the true meaning of IAF core values and hence are not aligned with it. Also, the mental model that prevails across IAF top hierarchy is that IAF is a professional force and professionalism counts most. Hence the emphasis on leadership training at an organisational level is not a priority. CLABS one week capsule is too little, too late in the lives of IAF officers. Though impressive, it has failed to make an impact either in their personal or service lives or at an organisational level. The recommendations were highlighted as the short-term strategies that emerged from SWOT Analysis to enhance impact of CLABS training. The other long-term recommendations with strategic implications are a Change in Mental Model - Let IAF call itself "**Leaders in Aersopace Power Application**". Revision of CLABS Mission Statement "**Eternal Compass to the Leaders, Preparing Future Spiritual Scholar Warriors**". A novel LIFT OFF Program (Leadership Integrated Focussed Training for Officers), a new theory of leadership and definition of future IAF officer emerges that has been envisioned by the researcher. The study's findings not only provide deeper insights into deep rooted issues in IAF but also suggest practical applications that would eventually enhance operational efficiency and strategic decision making.

Keywords: Indian Air Force, Leadership Training, CLABS, Core Values, Subordinate Development, Spiritual Scholar Warrior, Professionalism, Traits of an Officer, LIFT OFF.

**A QUANTITATIVE STUDY TO FIND CORRELATION BETWEEN DIVERGENT
AND CONVERGENT THINKING AS PART OF CONCEPTUAL THINKING
AMONG OFFICERS OF INDIAN ARMED FORCES**

By

Gp Capt Jastaj Singh

Indian Armed forces is going a transaction wherein there is a need to both divergent and convergent thinking. Convergent thinking involves arriving at a single correct answer based on existing data, while divergent thinking fosters creativity, enabling officers to generate multiple possible solutions and approaches. Convergent thinking is very useful in tactical environment where as for making innovation / different solutions there is a need to have divergent thinking. To have multiple solutions to one problem would be catalyst for self-sustenance in Indian defence environment. The research aimed to explore the cognitive thinking abilities of officers in the Indian Armed Forces, specifically focusing on **convergent** and **divergent thinking**. Both types of thinking are crucial for decision-making in high-stakes military operations, such as counterterrorism, humanitarian aid, and conflict resolution, where officers must analyze complex scenarios and make informed, timely decisions. To assess these cognitive abilities, a survey was conducted among officers from the Indian Army, Navy, and Air Force. The survey, consisting of 19 questions, aimed to gauge the levels of both convergent and divergent thinking across different ranks. Data analysis was conducted using statistical tools such as Exploratory Factor Analysis, Confirmatory Factor Analysis, and ANOVA, revealing that officers across all services demonstrate significant levels of both cognitive skills. The research found strong correlation between convergent and divergent thinking, indicating that both are essential for effective military decision-making. Senior officers tend to display higher levels of both thinking types, with experience correlating strongly with increased divergent thinking. This suggests that exposure to operational challenges and leadership responsibilities enhances officers' abilities to think creatively and analytically. Additionally, the Indian Navy showed the highest levels of cognitive thinking, possibly due to its emphasis on self-sustainability and indigenization. Key take aways are training programs should focus on developing both cognitive skills, with an emphasis on fostering creativity through divergent thinking. Furthermore, junior officers should receive specialized training to balance both thinking types as they gain more experience, thereby enhancing their adaptability and decision-making capacity in complex situations.

Keywords. Innovation, Self sustenance in defence equipment through divergent thinking and decision making in tactical environment using convergent thinking.

A QUALITATIVE STUDY ON INDIA'S SPACE SECURITY STRATEGY THROUGH SPACE RESILIENCE

By

Group Captain Nikhil Kumar

The rapid growth of global space technologies has driven nations to enhance capabilities for civilian and strategic defense. As space-based technologies shape geopolitics, India must strengthen space resilience and security. The threat of adversaries disrupting India's ISR infrastructure necessitates a strategic approach. In response, the Government of India (GoI) has introduced a Space Policy and allocated R&D funds to enhance space capabilities. This study explores the role of Non-Governmental Entities (NGEs) as force multipliers in advancing defense space resilience. Using qualitative research, including stakeholder interviews and literature review, findings highlight NGEs' role in fostering innovation, reducing foreign dependence, and accelerating space infrastructure development. The study calls for structured collaboration through INSPACE, a clear defense framework for NGEs, and government-backed incubation programs for startups. A well-aligned ecosystem of armed forces, government, academia, and NGEs will be key to strengthening India's strategic space capabilities and national security. Further, developing indigenous space technologies will reduce external vulnerabilities and ensure long-term self-reliance. A proactive policy approach will help India maintain a competitive edge in the evolving space domain.

Keywords: Space resilience, Non-Governmental Entities (NGEs), Space security, Defense infrastructure, ISR (Intelligence, Surveillance, and Reconnaissance), Government-NGE collaboration, Startup incubation, Policy framework, Strategic space capabilities, foreign dependence reduction, Military-space integration, Space-based defense technologies.

**A QUALITATIVE STUDY TO UNDERSTAND THE ATTITUDE OF SCHOOL
ADMINISTRATORS TOWARDS THE EFFECTIVE IMPLEMENTATION OF
INCLUSIVE EDUCATION POLICY MEASURES IN KENDRIYA VIDYALAYAS**

By

Gp Capt Rajneesh Kumar

Inclusive education in India has gained substantial attention with the shift from a needs-based to a rights-based approach, emphasizing equitable educational access. Despite comprehensive policy frameworks such as the National Education Policy (NEP) 2020 and the National Curriculum Framework (NCF) 2023, effective implementation within Kendriya Vidyalayas (KVs) remains challenging, largely influenced by school administrators' attitudes. This qualitative study evaluates KV administrators' attitudes towards inclusive education, identifying factors affecting their perspectives and explores strategies used to ensure equitable access. Analysis of interviews revealed predominantly positive attitudes toward including Children with Special Needs (CWSN), tempered by challenges related to inadequate training, limited resources and administrative barriers. Recommendations emphasize mandatory attitudinal training programs, inclusive certification modules, performance evaluations focused on inclusive practices, and centralized support systems. The study underscores that fostering positive administrative attitudes is critical for successfully implementing inclusive education, ensuring educational equity, and promoting sustainable growth aligned with international standards.

Keywords: Inclusive Education, Kendriya Vidyalayas, School Administrators, Attitudes, Children with Special Needs (CWSN), NEP 2020, NCF 2023, Qualitative Research, Thematic Analysis, Educational Equity.

**A QUALITATIVE STUDY ON THE EFFECTIVENESS OF RECAAP ISC
OPERATIONAL STRATEGIES IN REDUCING PIRACY AND ARMED ROBBERY
INCIDENTS IN THE SOUTHEAST ASIAN MARITIME DOMAIN**

By
Comdt Atul K Agarwal

Piracy and armed robbery continue to pose significant challenges to maritime security in Southeast Asia, a region that plays a vital role in global trade and economic stability. In response to these threats, the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP) was established to foster regional cooperation, facilitate information sharing and coordinate law enforcement efforts. While these measures have contributed to a reduction in piracy incidents, the nature of the threat has evolved, with a shift from high-seas piracy to incidents of armed robbery in coastal waters and ports (ARAS).

This research examines the effectiveness of ReCAAP ISC's operational strategies in addressing these concerns. Through qualitative analysis, including interviews with subject matter experts, secondary data evaluation, thematic coding, SWOT analysis and causal loop diagrams, the study explores the role of information sharing, joint maritime patrols, technological advancements, legal frameworks in combating piracy and armed robbery in the region.

The findings indicate that ReCAAP has been instrumental in reducing piracy on the high seas. However, challenges remain, including inconsistencies in legal frameworks, disparities in enforcement among member states, and the absence of key regional players such as Indonesia and Malaysia from full participation in the agreement. The study highlights the need for greater engagement with non-member states, broader adoption of advanced technologies such as predictive analytics, harmonization of legal frameworks and efforts to address the socio-economic factors that contribute to maritime crime. Strengthening these areas will be crucial in ensuring a more comprehensive and sustainable approach to maritime security in Southeast Asia.

Keywords. ReCAAP, maritime security, piracy, armed robbery, Southeast Asia, information sharing, regional cooperation, legal frameworks, technology, Re-VAMP, CORPAT.

**A QUALITATIVE STUDY ON THE RELEVANCE OF SPIRITUAL EDUCATION
FOR PERSONAL EFFECTIVENESS AMONGST MILITARY OFFICERS**

By

Col Vivek Ahlawat

This qualitative study explores the relevance of spiritual education for enhancing personal effectiveness among military officers. It argues that in the demanding and stressful environment of the armed forces, spirituality can serve as a vital tool for character building and personal development. The research distinguishes between spirituality and religion, emphasizing spirituality's focus on values, ethics, and inner self-discovery.

The study employs a qualitative approach, interviewing subject matter experts, including senior military leaders, to understand how spiritual education influences officers' effectiveness. Key themes identified include core values, spiritual development techniques, resilience, stress management, performance enhancement, and positive affirmations. The researcher analysed data using thematic analysis, mind maps, and word clouds to reveal insights.

Findings indicate that spiritual practices like meditation and Raj Yoga, rooted in the Ancient Indian Knowledge System, significantly improve self-awareness, emotional regulation, and decision-making. Virtues such as empathy, compassion, and ethical grounding, cultivated through spiritual education, enhance leadership skills and command effectiveness. The study highlights the importance of integrating spiritual education into military training at all levels and suggests collaboration with spiritual organisations to develop tailored training modules.

Ultimately, the research concludes that spiritual education fosters personal effectiveness by promoting resilience, positive thinking, and a deeper sense of purpose, contributing to well-rounded and effective military officers.

Keywords: spirituality, personal development, on values, ethics, resilience, stress management, performance enhancement, and positive affirmations, meditation and Raj Yoga

**A QUALITATIVE STUDY ON APPLICABILITY OF SAPTANGA THEORY OF
ARTHASHASTRA IN SHAPING INDIA'S STRATEGIC THINKING**

By

Col Karunakar Dimri

“Strategic Thinking” being an equally imp subset of Strategic Culture, also needs to be analysed and incorporated in framing strategies by the National and Military planners. The **Saptanga Theory** is a central concept in the ancient Indian political treatise of Arthashastra, which outlines **seven essential elements** (or "angas") of a state, crucial for its stability, prosperity, and effective governance. The objective of research was to establish applicability of **Prakritis** of **Saptanga Theory** and its correlation with the functioning of present contemporary components of a Nation-State for policy formulation at the apex level to make India a strong and resilient nation. The research highlighted that the present-day elements can be easily correlated with these seven **angas** which included The **King** (government at apex), **Amatya** (Ministry for formulating policies) Janpada (the population), **Kosha** (Treasury which implies economy and resources), **Durga** (the land and coastal frontiers along with strong internal infrastructure), **Danda** (Military to include Armed Forces and Civil police forces and lastly), **Mitra** (Allies of a particular nation). **The research concluded** that these seven elements are still present day foundation for any nation and the strength and stability of a state depend on the effective functioning and balance of these seven elements. Each element is interdependent, and the failure or weakness in any one of them can affect the overall health and success of the state. Further, it was recommended to **establish an apex Body for shaping future strategies for India** based on National Vision.

Keywords: Strategic Thinking, Strategic Culture, **Saptanga Theory** , Arthashastra, **Prakritis**, **angas** , **Amatya**, **Kosha**, **Durga**, **Danda**, **Mitra**, National Vision

**A QUALITATIVE STUDY TO ANALYSE THE EFFECTIVENESS OF UN RAPID
DEPLOYMENT POLICY IN PEACEKEEPING OPERATIONS**

By

Col BS Gusain

The ability to rapidly deploy peacekeeping forces is crucial for the United Nations (UN) to ensure timely intervention in conflict zones. However, despite the establishment of mechanisms such as the UN Peacekeeping Capability Readiness System (UNPCRS), delays persist in deployment timelines. This study analyzes the operationalization of the UN's rapid deployment policy, identifying key challenges such as bureaucratic inefficiencies, logistical constraints, and political reluctance among member states.

While the UN has made significant strides in structuring rapid deployment through initiatives like the UN SAS leading to UNPCRS, financial limitations, inadequate readiness of troop-contributing countries (TCCs), and host nation constraints continue to impede efficiency. The research highlights the need for structural reforms, including enhanced financial support, streamlined deployment procedures, and the establishment of regional deployment hubs to reduce response time.

By adopting a more adaptive and effect-based capability approach, the UN can strengthen its credibility and operational effectiveness. Addressing these challenges is imperative to ensure that peacekeeping missions can swiftly respond to emerging crises, thereby reinforcing the UN's mandate to maintain international peace and security.

Keywords: UN Rapid Deployment, Peacekeeping, UNPCRS, Troop-Contributing Countries, Operational Readiness, Regional Hubs.

**A QUALITATIVE STUDY ON INDIA'S OPPORTUNITIES FOR A COMPETITIVE
ADVANTAGE OVER CHINA IN SEMICONDUCTOR PRODUCTION DUE TO
CHALLENGES IN CHINA'S SEMICONDUCTOR INDUSTRY**

By

Col Harmit Singh

Semiconductors are **major drivers of technological revolution** at the cutting edge of science in today's world. **China's quick technological rise** is experiencing a push back from the West in the form of several **restrictions**. Apart from economics, this has its **roots in geo-politics and great power rivalry**. This presents an **opportunity for India** as the world is seeking alternatives for global manufacturing. This study uses qualitative research methods to examine **whether India is prepared to exploit the opportunity** and rise technologically. The recommendations contribute towards **strategic collaborations, policy interventions and long-term investments** for India to realise its potential as a global chip manufacturing hub.

Keywords. Semiconductor Chip Manufacturing, Government Policies, Foundries, Fabs, Chip Design, China's Semiconductor Industry, US CHIPS Act, India's Semiconductor Ecosystem, Industry Experts, MeitY, Semicon India Programme.

**A DESCRIPTIVE STUDY TO UNDERTAKE SWOT ANALYSIS OF LEADERSHIP
TRAINING INSTITUTIONS OF IA FOR MID LEVEL OFFICERS**

by

Col Rajesh Joshi

This dissertation focuses on evaluating the effectiveness of leadership training institutions within the Indian Army. Recognising the dynamic and evolving nature of modern warfare, the research highlights the critical role of structured leadership training in preparing mid-level officers for operational and strategic challenges. The study employs a **SWOT analysis**, supplemented by **Base, Means, and Capacity (BMC)** and **PESTLEM (Political, Economic, Social, Technological, Legal, Environmental, Military) frameworks** to assess the internal and external factors impacting these training institutions. The research follows a **qualitative methodology**, utilising interviews with **Subject Matter Experts (SMEs)**, document analysis, and thematic analysis to derive insights. The dissertation identifies key strengths such as **advanced infrastructure, experienced faculty, a structured curriculum, and a strong organizational culture**, while also acknowledging weaknesses, including **gaps in adapting to emerging warfare technologies and resource constraints**. Opportunities for improvement include **leveraging technological advancements, incorporating cyber warfare training, and fostering inter-institutional collaborations**, whereas threats include **budgetary constraints, evolving security challenges, and bureaucratic resistance to change**. The findings underscore the need for **continuous modernisation** of leadership training to align with contemporary military demands. The study recommends **enhancing curriculum flexibility, adopting simulation-based training, integrating AI and data analytics, and improving inter-service cooperation**. It also emphasizes the importance of **strategic foresight, resilience training, and ethical leadership development** to ensure that the Indian Army produces adaptable and effective leaders. The dissertation concludes by proposing that leadership training institutions should evolve proactively to meet future challenges and maintain operational readiness.

Keywords: SWOT analysis, PESTLEM, structured curriculum, organizational , culture, warfare technologies , technological advancements, cyber warfare, inter-institutional collaborations

**A QUALITATIVE STUDY TO ANALYSE THE STRATEGIC RELEVANCE OF SILK
ROUTE DURING THE KUSHAN EMPIRE**

By

Col Pushpendra Mishra

The Kushan Empire was strategically positioned along the ancient Silk Route, which facilitated expansive trade networks connecting Asian civilisations with the Roman and Greek kingdoms. Kushan kings recognised the economic benefits to be accrued out of trade and accordingly very actively promoted commerce through safety of trade routes, establishing new market towns and fostering a favourable environment amenable to domestic and foreign merchants. This study aimed to study the control and management of the Silk Route, a vital trade route in the region.

The dissertation was conducted in form of qualitative approach through primary and secondary data analysis. The major findings of the study from the primary data (interviews of Subject Matter Experts), emerged in form of various themes ie **strategic importance of Silk Route; religious and cultural syncretism; emergence of trade hubs and urban centres; development of maritime trade; infrastructure development; monetisation and standardised coinage; taxation and customs revenue**. The findings after a detailed study of secondary data (available literature on the subject), emerged as different themes ie **cultural and religious trade; trade diversification within India; technology, linguistic and literary exchanges; and agriculture as primary means of subsistence**.

A study as a whole found out that the Kushan control over trade and key territory was the main guiding factor which ensured their sustenance over three centuries. The study also found out that the extant territorial compulsions and military expansion during the Kushan Empire perfectly resonates with contemporary geo-strategic realities wherein nation states are vying for control of strategically important regions, avenues and resources for their own economic and strategic dominance. In the contemporary scenario, Chinese Belt and Road Initiative (BRI) as well as India Middle East Europe Economic Corridor (IMEEC) are suitable examples of the same geo-strategic and geo-economic relevance.

Keywords: Kushan Empire, Silk Route, Central Asian Region, Trade Routes, Economic Development, Territorial Control, Maritime Trade, Geo-Strategic Importance.

**A QUALITATIVE STUDY TO ANALYSE THE EFFICACY OF JOINT LOGISTICS
FRAMEWORKS IN THEATERISED COMMANDS**

By

Col GVVRS Kiran

The Indian Armed Forces are in the process of transitioning to Theaterised Command structures to enhance joint operational efficiency and tri-service synergy. However, the success of this transformation hinges on the development of a robust joint logistics framework. The existing Joint Logistic Nodes (JLNs) are not fully equipped to support the scale and complexity of theaterised operations, leading to inefficiencies in resource allocation and operational readiness. Over the years, incremental improvements have been made, but deeper structural and technological gaps persist. This research analyses the integrated logistics models of the USA and China's Theater Commands and evaluates the suitability of India's JLNs to support future Theater Commands. A strategic-level joint logistics framework is recommended, involving improved infrastructure, technological integration, and streamlined coordination across services. Implementing these reforms will enhance the operational efficiency and resilience of India's Theaterised Commands.

Keywords: Joint Logistics, Theater Commands, Supply Chain Management, Strategic Reforms, Operational Readiness.

**A QUANTITATIVE STUDY ON THE SUCCESS OF INNOVATION AND IR&D
PROCESS IN INDUCTING NEW TECHNOLOGIES IN THE INDIAN ARMY**

By

Col Vishek Walia

The Indian Army today is celebrating the year 2024 as the Year of Technology Absorption. There are a number of initiatives which have taken place to increase the presence of new age technology in the battlefield and management aspects of the units of the Indian Army. The premise behind these initiatives is that the user on ground can fabricate technology which is tailor-made to suit his needs. However, this has not been researched at all for its efficacy. At the Battalion level, which is the cutting edge level of the Army, two of the major initiatives leading are the Innovations process and the Integrated Research and Development (IR&D) process. These processes are intended to give power to the battalions to tailor-make technology specifications to their needs. The objective of this study was to evaluate the effectiveness of the Indian Army's innovation and IR&D process in successfully inducting new technologies. Specifically, the research aimed to identify the challenges that affect the innovation process. The findings show that **Alignment to organisational environment and Development complexity** affect the success of the Innovations and IR&D process in the Indian Army. A number of recommendations have been made to streamline and make these two processes more effective.

Keywords: Diffusion of Innovation, IR&D process, Innovations, Development Complexity, Organisational needs.

**A QUALITATIVE STUDY TOWARDS OPTIMISING ACQUISITION &
EMPLOYMENT OF DRONE - COUNTER DRONE TECHNOLOGIES BY THE
INDIAN ARMED FORCES**

By

Col Prithvi Chandele

The role of drones and counter-drone systems in modern warfare is evolving at a unprecedented pace. This dissertation highlights the increasing reliance of the Indian Armed Forces on these technologies and hence, the need for a structured approach to their acquisition and deployment.

The study identifies gaps in existing capabilities, focusing on doctrinal deficiencies, inter-service coordination issues, and the need for an overarching tri-service body to oversee drone policy formulation. It adopts a qualitative research methodology, utilizing expert interviews and literature reviews to assess current trends, challenges, and best practices. The research emphasizes the importance of optimizing drone employment across different conflict spectrums, leveraging global advancements, and integrating cutting-edge technologies like AI and swarm drones.

Key recommendations include the establishment of a tri-service UAV command, enhanced training programs, and indigenous technological development to reduce dependency on foreign vendors. The study also underscores ethical considerations and the need for continuous adaptation of doctrines and procurement policies. Overall, it provides a roadmap for strengthening India's drone and counter-drone capabilities in alignment with national security imperatives.

Keywords: counter-drone systems, doctrinal deficiencies, inter-service coordination, conflict spectrums, global advancements, AI and swarm drones

**A QUALITATIVE STUDY TO ANALYZE THE IMPACT OF PAFMM
INTELLIGENCE OPERATIONS IN THE ANDAMAN & NICOBAR ISLANDS' EEZ
ON THE INDIAN NAVY**

By

Col Ravi Kumar Tripathi

The strategic location of the Andaman and Nicobar Islands (ANI) in the Indian Ocean makes them critical for India's maritime security. However, the increasing presence of the People's Armed Forces Maritime Militia (PAFMM) poses a significant challenge. Operating under the guise of civilian fishing vessels, PAFMM engages in intelligence collection, disrupting India's maritime domain awareness and complicating naval operations. Their covert activities align with China's larger geopolitical strategy, creating security concerns for the Indian Navy.

This study examines the extent of PAFMM intelligence operations, their impact on India's force structuring, and potential countermeasures. Findings indicate that PAFMM's deployment in the ANI's EEZ increases surveillance demands, strains naval resources, and heightens strategic vulnerabilities. **The research recommends strengthening maritime domain awareness through AI-driven surveillance, expanding regional cooperation with allies, and investing in technological upgrades for counterintelligence operations.** A proactive approach integrating strategic deterrence, intelligence-sharing, and diplomatic engagement is essential for safeguarding India's maritime interests in the Indo-Pacific region.

Keywords: PAFMM, Indian Navy, Maritime Security, Gray-Zone Warfare, Intelligence Operations, Andaman & Nicobar Islands, Strategic Deterrence.

**A QUALITATIVE STUDY TO EVALUATE DATA COLLECTION AND COLLATION
(DC2) FRAMEWORK OF INDIAN ARMY FOR DATA CENTRIC WARFARE**

By

Col Vipul Agrawal

Data Centric Warfare (DCW) is an emerging concept that builds on the foundations of Network Centric Warfare (NCW). It aims to harness the power of data to gain a deeper and more precise, cross-domain understanding of the operational environment, leading to a more decisive operational advantage. The Dissertation attempted **to identify and analyse** challenges in the present DC2 framework of IA and to propose changes to enhance the operationalization of DCW as a core strategic process in IA. This dissertation underscores the transformative potential of DCW while offering a pragmatic pathway for formalizing DC2 Framework which is foundation to operationalising DCW. By addressing policy gaps, leveraging existing infrastructure and fostering a culture of data-centricity, the Indian Army can position itself at the forefront of modern military operations in an increasingly data-driven world.

Keywords. Data Centric Warfare (DCW), Network Centric Warfare (NCW), Data Collection, Data Collation, Data framework, Data Analytics in Indian Army.

**A QUALITATIVE STUDY TO ANALYSE IMPACT OF RUSSIA CHINA ARCTIC
ALLIANCE ON SATELLITE COMMUNICATION AND NAVIGATION**

By

Colonel Shaikat Gupta

The Arctic Region has eight natural geographical nations that are stakeholders in the Arctic region and part of the Arctic Alliance working towards mandated goals. China has made substantial investments in scientific research and infrastructure development in the region, through bilateral agreements with Arctic Nations and exceedingly with Russia. Russia and China have collaborated in the development and deployment of space technology of satellites and have established ground stations in the polar Arctic. The polar satellite communications have many useful military applications.

China's BeiDou Navigation Satellite System and Russia's GLONASS have been integrated to provide enhanced navigation capabilities in polar regions. This collaboration improves the accuracy and reliability of navigation services in the Arctic but also has military applications. The study analyses Russia China Alliance in Satellite Communication and Navigation in Arctic and its impact.

The Russia China alliance in this field has resulted in sharing of data from respective satellite systems including ground stations and leveraging combined satellite capabilities for strategic military applications in the field of reconnaissance, early warning and navigation including missile launches in high-latitude regions.

The analysis of interviews with subject matter experts highlight significant aspects. The study has highlighted various military applications that can be predominantly used in the Arctic region viz satellite based monitoring, GEOINT, special mapping, radar based tracking, broadband communication for land, air and water platforms, laser based satellite systems, infrared, and thermal imaging against troops built up, missile warning system and navigation of important military assets. The impact will be increased military capability, control of resources.

Keywords: Arctic Region, space technology, satellite communications, BeiDou Navigation Satellite System, GLONASS, GEOINT, special mapping, radar based tracking, broadband communication

A QUALITATIVE STUDY ON T-HUB: EXPLORING GENESIS, AIM & STRATEGY

By

Col Yogesh Mehta

The Indian tech startups are expected to play a pivotal role in boosting economic growth and the Nations's GDP. However, effectiveness of technology incubators in fostering the growth of startups requires critical enquiry, particularly in the context of low rate of success and slow growth of startups. This research explores key factors for growth and challenges faced by the startups with an aim to formulate strategies for enhancing effectiveness of technology incubators. The study has identified '*Six Pillars of Support*' that incubators must provide to ensure success of startups. These can be utilised by policymakers and incubator managers to formulate effective intervention strategies that will foster a culture of entrepreneurship and technical innovations. Important strategies recommended by the study include enhancing R&D capacities of the incubator ecosystem by diverting *Govt and private institutional funding towards boosting R&D infra and academic research*. Additionally, Govt must provide *higher incentives for startups involved in development of high-tech innovations* that are strategically important for the Nation and its economy.

Keywords. Academia, Collaborations, Deep-tech, Innovations, Networking, Mentoring, Fundraising, R&D, Strategic sectors, Knowledge, Employment, Skill-gap.

**A QUALITATIVE STUDY TO ANALYSE THE ROLE OF RELIGIOUS
FUNDAMENTALISM IN PERPETUATING THE ISRAEL-HAMAS CONFLICT**

By

Col Vikas Malik

The Israel-Hamas conflict is deeply intertwined with religious narratives that shape ideological positions, justify violence, and sustain hostilities. While often analyzed through political and territorial lenses, this study highlights how religious fundamentalism plays a critical role in mobilizing communities, legitimizing militant actions, and obstructing peace efforts. Sacred texts, religious rhetoric, and institutionalized teachings reinforce ideological divides, making the conflict appear as a divine mandate rather than a political struggle. However, **the findings indicate that religion is often a tool, rather than the root cause, with political objectives strategically embedded within religious rhetoric to maintain control and mobilize mass support.**

Using **thematic coding and rich picture analysis**, this qualitative study identifies key mechanisms through which religious narratives perpetuate violence. The findings suggest that religious education, martyrdom concepts, and the politicization of sacred sites significantly contribute to long-term polarization. **Political actors on both sides instrumentalise religious fundamentalism to sustain their legitimacy, rally followers, and justify territorial claims, making peace negotiations difficult.**

To counteract these influences, the study recommends **religious peacebuilding, interfaith dialogue, and educational reforms** as essential steps toward de-escalation. A strategic approach to **reframing religious discourse and promoting moderate interpretations** is crucial for breaking the cycle of violence and fostering sustainable peace in the region.

Keywords: Israel-Hamas Conflict, Religious Fundamentalism, Religious Rhetoric, Sacred Texts, Politics and Religion, Ideological Polarization, Interfaith Dialogue, Peacebuilding.

**A QUALITATIVE STUDY OF INDIA'S STRATEGIC ROLE IN THE QUAD:
ANALYSING ITS IMPACT ON THE US INDO-PACIFIC STRATEGY**

By

Col Nitin Naharia

The dissertation explores India's evolving strategic role within the Quadrilateral Security Dialogue (Quad) and its implications for the US Indo-Pacific strategy. The study highlights that the Indo-Pacific region is critical for global trade, regional security, and economic growth, with India's strategic location and growing military capabilities making it a key player in maintaining stability. India's participation in the Quad reflects a shift from its traditional non-alignment policy, driven by increasing tensions with China, particularly after the 2020 Galwan Valley clashes and a desire to balance China's growing influence in South Asia. The study finds that while India's strategic alignment with the US strengthens the Indo-Pacific strategy, diverging priorities among Quad members such as Australia's economic ties with China, Japan's pacifist constitution and India's strategic autonomy create friction in collective decision-making. India's leadership in the Supply Chain Resilience Initiative (SCRI) and focus on renewable energy and digital infrastructure align with Quad objectives, offering strategic advantages in economic and technological domains. Participation in naval exercises like Malabar strengthens India's role in regional maritime security, but China's perception of the Quad as a containment strategy increases regional tensions. The study recommends that India maintain strategic autonomy while deepening economic collaboration, strengthening maritime security through joint exercises, and expanding technological cooperation in cyber security, artificial intelligence and renewable energy. It suggests aligning Quad priorities through regular diplomatic engagements, advocating for an inclusive Indo-Pacific strategy that respects the sovereignty of smaller nations and maintaining diplomatic channels with China to manage border tensions and avoid direct confrontation. Strengthening India's role in the Quad will enhance its strategic influence, reinforce regional stability and contribute to a balanced Indo-Pacific order.

Keywords: Indo-Pacific Strategy, Quad, Indian Ocean, China Dominance, World Trade, Military Balance, Indian Geostrategic Location.

**A QUALITATIVE STUDY TO EXPLORE ETHICAL DIMENSIONS THROUGH THE
LENS OF RAMAYANA FOR APPLICATION IN PUBLIC ADMINISTRATION**

By

Col Saurabh Ahuja

Public administration today faces critical challenges such as corruption, lack of accountability and inequitable resource distribution. Ethical governance is essential for building public trust and ensuring effective administration. This research explores the philosophical teachings of the *Ramayana* to identify ethical principles that can be applied to modern public administration. The study addresses the research gap in connecting the ethical dimensions of the *Ramayana* with governance practices.

Through in-depth interviews with Subject Matter Experts (SMEs) and content analysis of key *Ramayana* verses, the research highlights the relevance of core concepts like *Dharma* (righteous duty), justice, integrity and compassion. The findings underscore that the ethical framework in the *Ramayana* offers a holistic approach to decision-making and leadership, promoting accountability and fairness.

Key recommendations include incorporating *Ramayana*-based ethical training in public administration and developing policy frameworks grounded in these principles. These insights aim to strengthen ethical governance and improve the quality of public service.

Keywords: Ramayana, Ethics, Public Administration, Dharma, Leadership, Accountability.

**A QUALITATIVE STUDY ON PUBLIC PRIVATE PARTNERSHIP AND
ARCHITECTURE OPTIMISATION FOR LOW EARTH ORBIT MISSIONS**

By

Colonel Ankush Gupta

In 2019, India created a Defence Space Agency and recent growth by private entities in Space domain create a window of opportunity for PPP model especially in Low Earth Orbit. This qualitative research identified three major threats to Space Assets ie PLA Aero Space Force, Cyber Threats from State and Non-State actors and Potential Denial of Critical Technology and components from Western nations. It highlighted Four Challenges in present architecture of Defence Space Agency (DSA). It is under-resourced, needs to transition into a tri-service organization led by a three-star general and creation of Technical Staff College dedicated to Space Warfare. In the aspect of Technology; need for Satellite Manufacturing, Launch Vehicle and Develop Space Domain Awareness. The recommended way ahead lies in Public-Private Partnership with advantages; Cost-Effectiveness, Innovation and Agility to India's space program. Major Challenges identified in implementation of PPP are; Policy and funding issues, lack of infrastructure and security concerns which need to be addressed for successful PPP implementation.

The final recommendations of the study are force restructuring by making tri-service space command, launch/activation on demand and activation of satellites in response to crises. Focus on dual EO-SAR payloads, indigenous manufacturing by joint ventures and special purpose vehicles, move beyond the L-1 concept, develop a comprehensive financial policy for PPP in defence space programs. Provide financial support and guaranteed orders to private players to encourage investment and innovation. It is paramount that military space domain awareness, data management and dissemination and AI-based analytics for real-time data processing and dissemination to combat platforms of space warfare with secure handling of defence space - related data be achieved by 2035 in phased manner.

Keywords: India, Public Private Partnership, Architecture of Space Force, Low Earth Orbit Missions

**A QUALITATIVE STUDY TO ANALYSE RELEVANCE OF MAHAN'S SEA POWER
THEORY TO COUNTER MARITIME SECURITY CHALLENGES POSED BY
GROWING CAPABILITIES OF CHINESE NAVY**

By

Capt(IN) Vijay Sangwan

Sea Theory propounded by Alfred T Mahan has influenced development of navies' world over. One of the key tenets of the theory is to achieve 'Command of Sea' by Building Large Fleets, Engaging in Decisive Battles and Defeating the Adversary by Concentrating the Fleet. China has witnessed a transformational growth in its economic strength, industrial capability and technological prowess catapulting it to be a potent global superpower. There exists a significant differential in the naval forces of the two nations, as also in their financial, industrial and technological capacities and capabilities, which continues to widen. IOR is a region of critical importance to China and the presence of PLAN in the region has steadily increased over the last decade. The growing capabilities of PLAN present a maritime security challenge that needs to be factored. Further, the maritime landscape has seen a massive transformation, since the Mahanian times, with the advent of technological advancements in the unmanned naval systems. This study analyses relevance of Mahan's Sea Power theory for the IN to counter maritime security challenges posed by growing capabilities of PLAN taking into consideration the capability asymmetry between the two forces and technological advancements being made in the field of unmanned naval systems. The research is limited to analysing relevance of Mahanian tenets of Engaging in Decisive Battles and Concentration of Fleet. The methodology of research is qualitative with primary data collected through interviews of Subject Matter Experts (SMEs) The study used System analysis approach for recommending plausible way ahead for the IN to address the PLAN challenge.

Keywords: Command of Sea, Large Fleets, industrial capability , technological prowess, technological capacities, PLAN, maritime landscape, Mahan's Sea Power theory , Concentration of Fleet

**A QUALITATIVE STUDY TO EVALUATE CAPABILITY OF INDIAN NAVY TO
EXPLOIT SOCIAL MEDIA AS AN INFORMATION OPERATIONS TOOL IN SUB-
CONVENTIONAL WARFARE**

By

Capt(IN) J Rangarajan

Social media has revolutionised communication, enabling rapid dissemination of information across diverse audiences. For the Indian Navy, it offers a platform to shape narratives, influence perceptions, and engage stakeholders effectively. However, its integration in sub-conventional warfare strategies remains underexplored. As a tool for information operations, social media can bolster national security, counter misinformation, and project a strong maritime presence. This study examines the Navy's current capabilities, identifies gaps, and provides recommendations for leveraging social media as a critical tool in sub-conventional operations. By exploring global military practices, challenges, and innovative solutions, the study offers actionable insights to optimise the Navy's strategic communication.

Key Words – Indian Navy, Social Media, Information Operations, Sub-Conventional Warfare, Strategic Communication, Cybersecurity, Misinformation, Psychological Operations, Digital Warfare, Narrative Building

**A QUANTITATIVE STUDY ON IMPACT OF HYPERSONIC MISSILES ON CRISIS
STABILITY IN INDIAN OCEAN REGION**

By

Capt(IN) Sreejith S Nair

Hypersonic missiles, characterized by speeds exceeding Mach 5, manoeuvrability, and low-altitude flight, present a new strategic challenge in the Indian Ocean Region (IOR). China's rapid advancements in hypersonic missile technology have significant implications for crisis stability, compelling India to accelerate its own capabilities to maintain credible deterrence. This research evaluates the impact of China's hypersonic missile superiority on crisis stability with India in the IOR, utilizing a quantitative research design. Data was collected through a cross-sectional survey and analysed using Jamovi 2.4.8, alongside qualitative assessments based on Game Theory, System of Systems Analysis, and Soft System Analysis. Findings indicate that China's hypersonic missile advantage negatively impacts crisis stability, increasing risks of miscalculation and escalation. Given the classified nature of hypersonic programs, research was constrained by limited open-source data and the respondents' lack of direct exposure to such weapons. The study recommends indigenous countermeasure development, enhanced early warning capabilities, and diplomatic confidence-building measures to mitigate risks. Establishing arms control frameworks and regional collaborations can further stabilize the IOR's security environment.

Keywords: Hypersonic Missiles, Crisis Stability, Indian Ocean Region, Deterrence, Strategic Stability, Countermeasures

**A QUALITATIVE STUDY ON INDIA'S RISK MITIGATION STRATEGIES
AGAINST ASYMMETRIC ATTACKS ON INDIAN SHIPPING LANES**

By

Gp Capt Aditya Bawa

India's maritime trade forms the backbone of its economic security, with nearly 95% of its trade volume and 70% of trade value moving through the seas. However, the increasing frequency and sophistication of asymmetric threats ranging from piracy and maritime terrorism to cyber warfare and hybrid naval strategies pose a significant challenge to the nation's maritime stability. These threats not only disrupt trade routes but also impose severe economic costs, threaten crew safety and undermine India's strategic influence in the Indian Ocean Region (IOR).

This research employs qualitative analysis, incorporating expert interviews, case studies and maritime security frameworks to assess the evolving nature of asymmetric threats and evaluate the effectiveness of India's current risk mitigation strategies. Findings reveal that while traditional naval deterrence has curtailed some forms of maritime crime, emerging threats such as cyber-attacks on navigation systems, GPS spoofing and AI-enabled piracy demand an upgraded security architecture.

The study proposes a **Multi-Layered Risk Mitigation Model**, integrating enhanced Maritime Domain Awareness (MDA), cutting-edge Cybersecurity Measures and robust International Cooperation for intelligence-sharing. Key recommendations include deploying AI-driven surveillance, bolstering Naval-Coast Guard interoperability, modernising port security and establishing legal frameworks for countering maritime cyber threats.

By adopting these strategic reforms, India can fortify its maritime defences, safeguard economic interests and assert its position as a dominant naval power in the IOR.

Keywords: Maritime Security, Asymmetric Warfare, Risk Mitigation, Cybersecurity, Naval Strategy, Indian Ocean Region.

**A QUALITATIVE RESEARCH TO ANALYSE THE EFFICACY OF LEADERSHIP
CURRICULUM AT NATIONAL DEFENCE ACADEMY FOR GEN Z CADETS**

By

Gp Capt Wangkhem Suresh Singh

The research explores how well the current leadership training at NDA meets the needs of today's young cadets. While the existing curriculum focuses on core values like discipline, courage and ethical conduct, the study finds that it does not fully address important areas such as adaptability, emotional awareness, communication, and the use of technology—all of which are vital for modern day military leadership. Generation Z cadets are more comfortable with digital tools, value meaningful engagement, and prefer learning environments that involve feedback and collaboration. The research, based on interviews with cadets, instructors, and experts, points out that the curriculum lacks enough practical exposure to modern leadership styles like Transformational Leadership and Reddin's 3D Leadership Model etc. It also highlights the need for better mentoring systems and leadership training that prepares cadets for challenges like cyber threats and joint operations. The study suggests introducing more interactive and technology based learning, real life leadership simulations, structured peer mentoring, and life skills training such as decision-making and emotional control. Drawing from global military academies like West Point, the research recommends updates that would make NDA's leadership training more suitable for today's generation, while still keeping the spirit and traditions of the Indian Armed Forces alive. These improvements aim to shape cadets into confident, ethical, and capable leaders for the future.

Keywords: Leadership Curriculum, NDA, Generation Z Cadets, Transformational Leadership, Reddin's 3D Model, Mentorship, Emotional Intelligence, Character Building.

**A QUALITATIVE STUDY ON NATIONAL SECURITY LESSONS FOR INDIA
FROM THE RUSSIA – UKRAINE CYBER WAR**

by

Gp Capt S Raja Prabhu

This dissertation critically examines the evolving cyber warfare landscape and its implications for India's national security. While India had implemented measures such as establishing the National Cyber Security Coordinator (NCSC) and enacting laws like the IT Act 2000, the Russia-Ukraine cyber war highlighted the increasing role of international hacker coalitions, both individual and organized groups, in targeting nation-states. This research aimed to analyze the effectiveness of India's existing cybersecurity infrastructure against potential large-scale cyber offensives, particularly in scenarios involving third-party actors. The primary objective was to descriptively assess the cyber dimension of the Russia-Ukraine war and derive lessons for India, with a specific focus on the coordination among international hackers, the response strategies of Russian and Ukrainian stakeholders, and the efficiency of India's cyber mitigation framework. Using a qualitative research approach, data was collected through structured interviews with subject matter experts and analyzed using thematic and content analysis. Key findings indicated that while non-state hackers had limited impact due to a lack of coordination, private industries played a significant role in cyber operations. The study also identified gaps in India's cybersecurity preparedness, including a lack of synergy among defense and civilian stakeholders, inadequate mechanisms to combat disinformation in the AI era, and the absence of a strategic cyber leadership role at the national level. The research underscored the need for investment in cybersecurity talent, improved synergy among agencies, and stronger private-sector involvement, while acknowledging constraints such as time limitations and restricted access to experts.

Keywords: National security, Cyber warfare, Russia – Ukraine war, Non-state hackers, Private sector, Integration of Defence Services.

A QUALITATIVE STUDY TO FIND OUT THE CHALLENGES ENCOUNTERED BY THE STAKEHOLDERS IN IMPLEMENTATION OF EXISTING POLICIES ON A QUALITATIVE STUDY TO IDENTIFY CHALLENGES ENCOUNTERED IN IMPLEMENTATION OF SMART SOLUTIONS IN IAF ESTABLISHMENTS

By

Group Captain Manmeet Singh

This qualitative study investigates why smart solutions for electricity and water services in Indian Air Force (IAF) bases have not been fully implemented, despite established policies inspired by national initiatives. Interviews and insights were compiled from serving and retired IAF officers of Adm branch, MES personnel and Users. The analysis of the responses revealed lack of in-house expertise with MES, limited funds for outsourced maintenance, high integration costs with existing infrastructure and cybersecurity concerns linked to IoT-based systems as the major impediments.

Stakeholders note that smart solutions receive low prioritisation in annual works plans and face resistance from users accustomed to traditional practices. To address these issues, the study recommends adopting a phased, top-down implementation strategy that secures mandatory funding and incorporates dedicated feasibility groups comprising MES and IAF representatives. It also emphasizes the importance of robust feedback mechanisms, strict cybersecurity protocols, and capacity-building initiatives for MES staff to ensure sustainable, in-house maintenance.

Overall, while the potential benefits of increased operational efficiency, real-time monitoring, and cost savings are clear, overcoming the financial, technical, and organizational barriers is crucial. A comprehensive, inclusive roadmap that combines policy restructuring, strategic implementation, and continuous training is essential for fully integrating smart solutions into IAF establishments and can serve as a model for modernizing public sector infrastructure.

Keywords: smart solutions , Indian Air Force (IAF), MES personnel , IoT-based systems , operational efficiency, real-time monitoring

**A QUANTITATIVE STUDY TO ANALYSE AUTHENTIC LEADERSHIP IN INDIAN
ARMED FORCES**

By

Gp Capt Samrat Yadav

Indian Armed forces is facing the issues with authentic leadership at senior levels in all services which is highlighted by the service officers themselves while serving or after retirement. Authentic leadership has multiple potential benefits for increasing the productivity and effectiveness of any organisation, however the same is not much prevalent in Indian armed forces where discipline, compliance and uniformity are considered as the intrinsic traits for success. This study aims to explore the concept of authentic leadership in the Indian Armed Forces and its impact on organizational performance. The objective of research was to assess the prevalence of authentic leadership in Indian armed forces. The research has been able to highlight the core attributes of authentic leadership, its importance and benefits in military context. Further the prevalence of authentic leadership in Indian Armed forces has been ascertained by the medium of statistical analysis and it was found that the prevalence of authentic leadership in Indian Armed forces was found to be low especially in attributes 'Balanced processing' and 'Balanced transparency.' Also, no significant difference was found in prevalence of authentic leadership within the three services or across the rank structure. To increase the authentic leadership in Indian armed forces it is recommended that dedicated training in authentic leadership and inclusion of same in current leadership courses and authentic leadership be included in appraisal of officers.

Keywords. Authentic leadership, Self-awareness, Individual Values, Job Performance, Military Leadership, Military Ethics, Training and Development, Military Personnel, Operational Environments, Military Service.

**A QUALITATIVE STUDY ON RECENT UN MISSION ENVIRONMENT AND
CHALLENGES FACED BY BANGLADESH CONTINGENTS**

By

Col Hassan Mahmud, AFWS, PCS

The research focuses on the challenges and operational environment faced by Bangladesh contingents in recent United Nations (UN) missions. It explores the difficulties encountered by Bangladesh peacekeeping forces in executing their duties, ranging from logistical issues, operational constraints, to the lack of adequate support systems. The study delves into the broader context of the UN mission environment, identifying structural and financial limitations that hinder the performance and efficiency of contingents. It also examines how these challenges impact the overall effectiveness of the mission and the welfare of the personnel involved. The research recommends strategic reforms, including enhanced logistical support, integration of modern technology, and improved coordination mechanisms, to address these issues and improve the operational success of Bangladesh contingents in future UN missions. It also underscores Bangladesh's diplomatic role in strengthening international relations through its peacekeeping contributions. The study, based on qualitative data collected from subject matter experts, concludes that Bangladesh contingents play a vital role in maintaining peace but face persistent challenges that require strategic attention. By implementing these changes, Bangladesh's peacekeeping forces can better fulfill their mandate and contribute more effectively to global peacekeeping efforts.

Keywords: Recent UN Mission Environment, Challenges Faced by Contingents, Peacekeeping Operation Training, Hybrid Operational Environment, Robust Peacekeeping, Bangladesh Contingents Preparedness

**A QUALITATIVE STUDY TO ANALYSE IMPACT OF TRAINING PROGRAMS IN
INDIA ON MONGOLIAN MILITARY PERSONAL**

by

Col Bayarkhuu Gombo

This dissertation explores the Impact on knowledge and skills. Indian training programs contribute significantly to the professional development of Mongolian military personnel by improving both technical and soft skills such as leadership, teamwork, communication and decision-making. The programs provide practical knowledge and exposure to real-world applications, increasing self-confidence and job readiness. Indian military training program is very beneficial in building physical endurance, leadership and fighting skills. However, it has limitations such as lack of focus on modern warfare techniques and technology. In addition, the programs can be physically demanding and sometimes lack adequate attention to mental health and modern military advancements.

Most participants express satisfaction with the results of the training, as they gain valuable skills that enhance career prospects. However, some individuals emphasize a desire for more hands-on learning experiences and a greater focus on modern warfare techniques. There is a strong desire to continue participating in future education programs in India. Many individuals appreciate the rigorous and comprehensive nature of the training, although some would like to see the integration of more modern technology and techniques.

Cyber security training is increasingly recognized as critical to protecting digital infrastructure and protecting against cyber threats. Specific training programs such as counter-terrorism, mountain warfare and leadership development have proven particularly beneficial for military personnel in Mongolia, helping them apply skills in relevant operational contexts.

Keywords: Excellence, Training Program, Importance of Joint Training Exercises and Interforce Cooperation, Development of Leadership and Strategic Thinking, Enhanced Mutual Respect and Bilateral Defence Cooperation.

**A QUALITATIVE STUDY FOR OPTIMISING THE IMMEDIATE RESPONSE
CAPABILITIES OF THE ROYAL BHUTAN ARMY IN NATURAL DISASTERS:
EVALUATING STRATEGIES, CHALLENGES AND COMMUNITY IMPACT.**

By

Col Dorji Lotey

The Royal Bhutan Army (RBA) plays a vital role in disaster response, particularly given Bhutan's challenging Himalayan terrain. This study explores ways to enhance RBA's immediate response capabilities by addressing key factors such as stakeholder coordination, community perception, resource utilization, and the adoption of best practices. The research aims to analyse the role of the armed forces in disaster management, assess community views on RBA's contributions, identify operational challenges, and explore effective strategies for improving response efficiency.

Employing a qualitative research approach, the study collects data through interviews with subject matter experts (SMEs) and RBA personnel, alongside secondary sources such as books, disaster management journals, and magazines. A cross-sectional research design ensures real-time data collection, while purposive sampling selects participants based on their expertise. The analysis is conducted using NVivo software, which facilitates the identification of key themes and trends through word clouds and recurring patterns, providing valuable insights into disaster response strategies.

The findings highlight RBA's critical role in disaster management, emphasizing the importance of swift response capabilities, community engagement, and efficient coordination. To further enhance its effectiveness, the study recommends strengthening stakeholder collaboration, improving community involvement, and refining policy frameworks. These measures will not only optimize RBA's disaster response efforts but also contribute to greater resilience and preparedness for future natural disasters in Bhutan.

Keywords: Royal Bhutan Army, Himalayan terrain, swift response capabilities, , community engagement, efficient coordination

**A QUALITATIVE STUDY TO ANALYSE THE SCM PRACTICES IN THE
BRAZILIAN ARMY DURING WESTERN AMAZON OPERATIONS**

By

Col Luciano Luiz Goulart Silva Dias

This research focuses on practices of Supply Chain Management (SCM) in the Western Amazon, aiming to propose suitable improvements for the Western Amazon operations. The research is covered by Thematic Analysis, which collected data in interviews with Subject Matter Experts (SMEs). In this context, the Review of Literature will present the strategies of Inventory, Transportation, Location, and the service goals proposed by Ballou (2007). It will be present some improvements for the Western Amazon's SCM, the limitations of this work and future areas of research.

Keywords: Supply Chain Management, Logistics strategies and Western Amazon.

**A QUALITATIVE STUDY TO EVALUATE THE EFFECTIVENESS OF MULTI-
AGENCY DISASTER RESPONSE STRATEGIES IN KENYA: A CASE STUDY
APPROACH.**

By

Col T K Bor

Kenya's disaster management remains reactive and uncoordinated due to weak policy frameworks and centralized decision-making. The country faces recurring disasters such as droughts, floods, pandemics, and conflicts, which cause widespread displacement and economic disruption. Despite Kenya's commitment to global frameworks like the Sendai Framework, inadequate coordination, resource constraints, and limited stakeholder involvement hinder effective response efforts. Recent crises, including the worst drought in four decades and deadly floods, underscore the inefficiencies of multi-agency response strategies, highlighting the urgent need for policy reforms, decentralization, and enhanced collaboration to strengthen disaster resilience. The study contributes to the understanding of important elements and factors that affect the effectiveness of Kenya's approach to disaster response and the impeding challenges that stem from implementation of multi-agency disaster response strategies. To enhance disaster resilience, Kenya should implement **comprehensive policy reforms such as the National Disaster Risk Management (NDRM) Bill 2023**, decentralize decision-making, strengthen multi-agency coordination, and invest in resource allocation and stakeholder engagement for a more proactive and effective disaster response. and revitalizing the National Disaster Control Office (NDCO) are needed

Key words: Multi-agency Coordination, Effectiveness, Community Engagement and Training

**A QUALITATIVE STUDY TO ANALYSE THE IMPACT OF SAUDI ARABIA'S
VISION 2030 ON THE QUALITY OF LIFE OF CITIZENS: INSIGHTS FROM THE
TOURISM SECTOR**

By
Col Adel Ali Asiri

Saudi Arabia's Vision 2030 is a strategic initiative aimed at transforming the Kingdom's economy by reducing reliance on oil and developing alternative sectors, including tourism. This research examines how tourism development, particularly through the NEOM mega project, influences the quality of life (QoL) of Saudi citizens. As Saudi Arabia positions itself as a global tourism hub, economic diversification, cultural integration, and employment opportunities emerge as critical factors in shaping the nation's future. The study employs a qualitative methodology, using thematic analysis based on interviews with subject matter experts, citizens, tourism professionals, and government officials. Findings highlight the importance of economic diversification, the role of community awareness in tourism acceptance, and the socio-cultural impacts of large-scale projects like NEOM. While the initiative presents vast opportunities, challenges such as cultural shifts, infrastructure development, and economic sustainability remain key concerns. This research recommends strategic community engagement and investment in sustainable tourism to ensure that Vision 2030 achieves its intended positive impact on Saudi citizens. By aligning tourism development with societal well-being, Saudi Arabia can establish a globally competitive and culturally rich tourism sector that enhances the overall quality of life.

Keywords: Vision 2030, Tourism Development, NEOM, Economic Diversification, Quality of Life, Saudi Arabia, Sustainable Tourism, Cultural Exchange.

**A QUALITATIVE STUDY TO ANALYSE THE INDO-PACIFIC STRATEGY AND
ECONOMIC INFLUENCE TOWARDS MALAYSIA**

By

Lt Col Zulkifli Bin Ridzuan Harry

The Indo-Pacific area has become a focal point of geopolitical and economic dynamics, significantly impacting regional and global strategies. Due to its geographic proximity to the South China Sea, Malaysia faces various opportunities and challenges. In addition to escalating regional tensions, the conflicting territorial claims in this vital maritime area have influenced Malaysia's foreign and economic policies. Additionally, Malaysia faces both opportunities and challenges from the Indo-Pacific Economic Framework, defined by changing trade dynamics, infrastructure development projects, and strategic alliances. This research seeks to identify and analyse both the strategy and framework's influence on Malaysia's economy and development. **Strengthening of diplomatic neutrality and strategic hedging** need to be employed to navigate the geostrategic rivalry between US and China in the region. This would include leveraging on ASEAN Centrality, enhancing of maritime and non-traditional security capability while optimising economic engagement through the Indo-Pacific Economic Framework. Focusing on economic resilience through strategic planning is also required to weather the situation, whilst strengthening governance, enhancing soft power and international influence to reinforce the standing of the nation.

Keywords: Indo-Pacific Strategy, Indo-Pacific Economic Framework, South China Sea, Malaysia, ASEAN Centrality, economic resilience, strategic hedging, maritime security.

A QUALITATIVE STUDY ON NATIONAL ENTERPRISE CORPORATION (NEC AGRO LTD) INITIATIVES FOR SUSTAINABLE FOOD SUPPLIES TO UGANDA PEOPLES DEFENCE FORCES (UPDF)

by

Col Samuel Rombe Achile

The UPDF Food Budget has been in deficit for a number of financial years leading to underfeeding, late delivery, high cost of acquisition, supply chain rigidities and poor quality of food as the institution would wish purchase more with the available constrained food budget. To reverse the status quo, the UPDF thought of empowering NEC AGRO a business arm of the UPDF to supply food to the Defence Forces. However, there are challenges NEC AGRO still faces in implementing sustenance in food supplies to the UPDF. This study was undertaken to assess the challenges NEC AGRO faces and come up with plausible initiatives to sustainably supply food to the UPDF. **Low supply capacity, effects of climate change, high cost of food distribution and poor post-harvest management** were the highlights of challenges faced by NEC AGRO. Deployment of a **Board to supervise performance, capitalization efforts, infrastructural development, commercial agriculture supported by irrigation and regional storage facilities** were identified as the plausible investment initiatives to sustain food supplies to the UPDF if the force is to focus on its primary constitutional mandate of preserving the territorial integrity of Uganda.

Keywords: sustainable food supplies, challenges and investment initiatives.

**A QUALITATIVE STUDY FOR ANALYZING THE GAPS AND CHALLENGES OF
POLICY IN ADDRESSING THE IMPACT OF GLOBAL WARMING ON THE
BIODIVERSITY IN NEPAL**

By

Col Krishna Khadka Chhetri

Nepalese biodiversity faces serious threats due to global warming, with increasing temperatures, unpredictable precipitation and extreme weather events accelerating degradation of habitat and decrease in species. Despite national and international policies, such as the National Biodiversity Strategy and the Action Plan (NBSAP) and the Paris Agreement, significant gaps remain in their effective implementation. This research examines these policy frameworks in order to identify gaps, challenges and barriers that prevent their success to resolve the impact of climate change on biodiversity in Nepal. The study emphasizes the urgent need for adaptive and inclusive policy to protect the rich biodiversity of Nepal, which is essential for ecological balance, food safety and socio-economic well-being. Key findings show that existing policies are often too wide and lacking steps, resulting in inconsistent implementation. In addition, the situation worsens insufficient financing, poor coordination between parties and limited community involvement. Research is an advocate of integration of climate adaptation strategies, increased resources allocation and strengthening the cooperation of stakeholders to improve policy efficiency.

A comprehensive approach is recommended to overcome existing challenges, including local communities, increased financial mechanisms and robust monitoring and evaluation systems. These reforms are essential to ensure the resistance of Nepal's biodiversity in the face of global warming, ensuring that efforts to protect them are in line with national and international objectives for sustainable development.

Keywords: Global warming, Biological diversity, Climate change, NBSAP, Paris agreement, Policy gaps, Climate adaptation, Protection.

**A QUANTITATIVE STUDY OF IMPACT OF USE OF SOCIAL MEDIA BY THE
SOLDIERS OF SRI LANKA ARMY**

By

Brig WAJ Hemachandra RSP psc

This study explores the impact of social media (SM) usage by soldiers in the Sri Lanka Army (SLA), focusing on its effects on social cohesion, operational security, and the overall functioning of the military. In today's interconnected world, social media plays a significant role in the lives of young soldiers, influencing their communication, relationships, and work dynamics. While social media offers benefits such as emotional support and enhanced camaraderie, it also poses significant risks, particularly in terms of security breaches, privacy concerns, and the erosion of discipline within the military.

The research identifies the key challenges posed by social media, such as the unauthorized sharing of operational data, locations, and personal information, despite explicit directives to avoid such practices. This not only jeopardizes the national security of Sri Lanka but also threatens the reputation of the SLA. The study highlights cases where inappropriate behavior, including the expression of anti-government sentiments, has been exacerbated by social media, resulting in potential harm to the military's unity and morale.

The research also addresses the social impact of social media on soldiers' interpersonal relationships, leading to social isolation and reduced face-to-face interaction. The study underscores the need for more robust social media policies, clearer guidelines, and stronger control mechanisms within the SLA to mitigate these risks. It also calls for a balanced approach that leverages social media's advantages for morale and communication while safeguarding operational security.

Furthermore, the study outlines the current gaps in the SLA's social media policies and recommends the development of a comprehensive policy framework. This includes the creation of a social media strategy handbook, the integration of digital health education, and the promotion of responsible usage campaigns. The research employs a mix of quantitative methods, including surveys and statistical analysis, to assess the trends and risks associated with social media usage among SLA soldiers.

Ultimately, the findings advocate for a more strategic, controlled, and responsible use of social media in the military, ensuring that it enhances the welfare and operational effectiveness of the soldiers while minimizing security risks and maintaining discipline within the ranks.

Keywords: Sri Lanka Army (SLA), operational security, social cohesion, military communication, SLA's social media policies, interpersonal relationships, social isolation, military discipline.

**A QUALITATIVE STUDY ON LEVERAGING MARITIME DIPLOMACY TO
ENSURE GOOD ORDER AT SEA IN THE BAY OF BENGAL**

by

Captain Mahmudul Haque Majumder, (L), NPP, afwc, psc

The Bay of Bengal has re-emerged as a critical geostrategic and geoeconomic water mass after almost a century of the colonial epoch. Despite enormous potential, the Bay suffers from a plethora of traditional and non-traditional security threats impacting the good order at sea. Following a qualitative exploratory approach, this paper first evaluates the prevailing good order at sea in the Bay of Bengal along with multifaceted threats undermining it and various indicators to measure good order at sea. It then explores ways maritime diplomacy can be leveraged in maintaining good order at sea, fostering regional stability and cooperation. By referring endeavours of other regions and existing frameworks as well as challenges in leveraging maritime diplomacy within the Bay of Bengal, the paper proposes a maritime diplomacy framework for the region, aiming at maintaining good order at sea and enhancing maritime governance.

Keywords: Bay of Bengal, good order at sea, maritime diplomacy, regionalism, traditional and non-traditional maritime threats, maritime security, maritime governance.

**A QUALITATIVE STUDY ON THE STRATEGIC PARTNERSHIP BETWEEN
NIGERIA AND INDIA ON DEFENCE AND SECURITY IN THE 21ST CENTURY**

By

Gp Capt ED Okolo

This study examines Nigeria-India defense and security collaboration in the 21st century, tracing their historical diplomatic ties and analyzing key areas of cooperation, including military training, joint exercises, naval operations, and technology transfer. It explores the geopolitical significance of this partnership, considering India's strategic engagement in Africa and Nigeria's role as a regional power in West Africa. Challenges such as bureaucratic inefficiencies, divergent strategic priorities, and complex geopolitical dynamics, including the influence of competing global players, are assessed within an integrated theoretical framework combining constructivist security theory, strategic hedging theory, and complex interdependence theory. Using a qualitative methodology and thematic analysis, the study uncovers opportunities for deepening cooperation through historical ties, expanded technological exchanges, and strategic alignment. Findings highlight the importance of formalizing collaboration via a Memorandum of Understanding (MOU) to institutionalize military training, technology transfer, and security initiatives. Policy recommendations emphasize strengthening institutional frameworks to enhance defense ties and address mutual security concerns. By bridging gaps in the literature, this research provides a nuanced understanding of Nigeria-India defense relations and their strategic implications. Ultimately, it positions the partnership as a model for South-South cooperation, demonstrating how emerging powers can collaborate to tackle shared security challenges while contributing to regional and global stability.

Keywords: India, Nigeria, Strategic partnership, Strategy, Security, Technology transfer, Cooperation, Defense.

**A QUALITATIVE STUDY TO THE ROLE OF MYANMAR NAVY IN
UNDERTAKING HUMANITARIAN ASSISTANCE AND DISASTER RELIEF
MANAGEMENT IN MYANMAR**

By

Capt Ne Aung Kyaw

Natural disasters are threatening the sustainable development of the countries all over the world. Disaster impacts may destruct long term efforts within a short time. Therefore, understanding disaster risk and efficient disaster management becomes essential nowadays. For militaries, the missions of Humanitarian Assistance & Disaster Relief (HADR) have emerged as important missions after the cold war. The Armed Forces (Army, Navy, Air Force), and civil organizations are cooperating in natural disaster relief and rehabilitation activities. Navy is the one of the major arm of military which employed the Humanitarian assistance & Disaster Relief missions. The Myanmar Navy plays a crucial role in HADR management, particularly given the country's vulnerability to natural disasters such as cyclones, floods, and earthquakes. Myanmar Navy's involvement in HADR is multifaceted and includes several key responsibilities and activities. Myanmar Navy is tasked with conducting search and rescue missions during disasters and also the Navy is instrumental in transporting relief supplies and personnel to disasterstricken areas. Moreover, Myanmar Navy collaborates with other government agencies, nongovernmental organizations (NGOs), and international bodies to coordinate disaster response efforts. This collaboration is essential for effective resource allocation and ensuring that relief missions are well-organized and comprehensive. However, the effectiveness of Myanmar Navy's current practices is often limited by various challenges and a less of integration with international best practices. This research delves into the HADR missions of Myanmar Navy explore how lessons from other navies can be leveraged to improve the standard operating procedures of Myanmar Navy. Some recommendations and considerations regarding of the role of Myanmar Navy in Humanitarian Assistance & Disaster Relief (HADR) management for the future include further investment in training, technology, and community engagement to ensure a positive and resilient disaster management framework for Myanmar.

Keywords: Humanitarian Assistance & Disaster Relief (HADR) management, missions, best practices, difficulties, challenges

**A QUALITATIVE STUDY TO DESCRIBE STRATEGIES FOR THE INDONESIAN
ARMY FOR ENHANCING AGRICULTURAL PRODUCTIVITY TOWARDS
ACHIEVING NATIONAL FOOD SECURITY IN INDONESIA**

By

Col Rachmat Christanto

This dissertation examines the strategic role of the Indonesian National Army (TNI AD) in enhancing agricultural productivity to achieve national food security in Indonesia. As an agrarian country, food security is crucial to national development. Through territorial development functions and military operations other than war (OMSP), TNI AD contributes to various agricultural productivity enhancement programs in collaboration with the Ministry of Agriculture and local governments.

This study analyzes the strategies implemented by TNI AD, including technical training for **Village Supervisory Non-Commissioned Officers (Babinsa)** and farmers, the adoption of modern agricultural technology, the development of agricultural infrastructure such as irrigation systems, and guidance on sustainable farming practices. Additionally, the collaboration between TNI AD, farmers, and local governments plays a pivotal role in the implementation of food security programs.

Despite the positive impact of these initiatives on agricultural output, several challenges persist, including limited resources, Babinsa's lack of technical agricultural knowledge, farmers' resistance to new technologies, and ineffective inter-agency coordination. Bureaucratic hurdles and budget constraints further hinder the optimal implementation of these programs.

Through the analysis of primary and secondary data, this research proposes several optimization strategies, such as improving Babinsa's capacity in agricultural technology, strengthening cross-sectoral cooperation among TNI AD, the Ministry of Agriculture, and local governments, and providing better agricultural infrastructure. Additionally, a more effective communication approach and farmer education initiatives are expected to enhance the acceptance of agricultural innovations.

In conclusion, this dissertation highlights that the success of food security programs does not solely depend on TNI AD's involvement but also synergy with various stakeholders. Therefore, a more integrated and sustainable strategy is required to overcome existing challenges and enhance agricultural productivity to ensure better national food security.

Keywords: TNI AD, food security, agricultural productivity, Babinsa, agricultural technology, cross-sectoral collaboration, agricultural infrastructure, military operations other than war (OMSP), territorial development, agricultural strategy.

**A QUALITATIVE STUDY TO ANALYSE DEFENCE COOPERATION IN AIR
DEFENCE DOMAIN BETWEEN CHINA AND PAKISTAN**

By

Col Sandeep Bhardwaj

Military assistance is one of the most credible and enduring pillars of China-Pakistan collusion in South Asia. After 1965 Indo - Pak Conflict, US put an embargo on arms supply to Pakistan which gave an opportunity to China to supply arms to Pakistan. China is presently the biggest defence supplier to Pakistan accounting for 75% of Pak Air Force and 80% of Pak Army inventory. The increased collaboration between China and Pakistan particularly in the Air Defence domain, facilitated by technology transfer, joint exercises and strategic planning is also a noticeable change. This silent and opaque nature of partnership in Air Defence domain to enhanced military capabilities of Pakistan remain poorly understood and merits more deliberation. This study delves upon the scope and nature of China-Pakistan Air Defence cooperation deliberately. It involves recent Chinese Air Defence Equipment in Pak Air Defence inventory including transfer of Technology, Joint exercises and Training programs to enhance Pakistan's Air Defence capabilities, Pakistan's Satisfaction with Systems and envisaged future collaboration in this domain.

Keywords: China and Pakistan Defence Cooperation, Air Defence Domain, Chinese Air Defence Equipment, Joint exercises, Training programs, Pakistan's Satisfaction with Systems and Future Collaboration