EVALUATING STRATEGIC IMPLICATIONS OF PRIVATISATION ON SENSITIVE AND ALLIED GOVERNMENT ORGANIZATIONS

by

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DEDICATION

During the service in the government, there had been dilemmatic dismay among all levels of employees about effects of privatisation specially on sensitive and allied government organisations and associated private companies involved in research-oriented activities Envisioning the complexity of problem and effects of governing parameters, the dissertation work on evaluation of strategic implications of privatization was originated and evolved.

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Inspired by motivation through my job profile area, it gives me immense pleasure to write this dissertation as a manifestation of expression in terms of appealing research work. This drive emerged during my involvement in execution of various projects of national interests.

Despite initial hurdles, SSBM has cooperated and consented me to continue research work. I express my thanks to the team.

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ABSTRACT

Privatization has been widely recognized as a mechanism for improving efficiency, reducing government expenditure, and fostering innovation. However, its application to sensitive and allied government organizations such as defence, intelligence, DAE, cybersecurity, space research, and critical infrastructure presents complex strategic implications. The transfer of control from public to private entities in these domains raises significant strategic concerns regarding national security, productivity, efficiency, data confidentiality, public accountability, and long-term sustainability.

It is noted that there is significant lack of research on India that particularly determine strategic implications or consequences of privatisation of sensitive and allied organisations and integrity of India. In order to substantiate research, the viewpoints of expert's government personnel, crucial stockholders who were neglected in earlier research have been included for analysing the privatisation of institutions given above.

This study critically evaluates strategic implications of privatization on sensitive and allied government organisations in India with the risks and benefits. It presents sufficient empirical evidence that advocates the privatization of sensitive and allied government organisations

The findings of study offers valuable inputs to the government or policymakers who are envisioning the privatization as a means of enhancing the overall efficiency specially in sensitive or strategic sectors with robust protective measures under legal institutional framework.

The hypothesis-testing result gives insights to the relationship existing between privatization and major results associated with strategic governing parameters such as productivity, operational efficiency, and national security risks. The research fulfils research objective and corresponding research questions on strategic implications parameters.

In conclusion, while privatization presents opportunities for enhancing efficiency and innovation in sensitive government sectors, its strategic implications necessitate careful evaluation. A balanced approach, incorporating rigorous governance measures and national security safeguards, are essential to ensure that privatization aligns with broader national interests while maintaining public confidence in essential services.

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ABBREVIATIONS

ATAGS	:	Advanced Towed Artillery Gun System
ANOVA	:	Analysis of Variance
BEL	:	Bharat Electronics Limited
BARC	:	Bhabha Atomic Research Centre
BEL	:	Bharat Electronics Limited
BFL	:	Bharat Forge Limited
BSE	:	Bombay Stock Exchange
BPCL	:	Bharat Petroleum Corporation Limited
CSIR	:	Council of Scientific and Industrial Research
CCA	:	Caucasus and Central Asia
CEE	:	Central and Eastern Europe
CPSE	:	Central Public Sector Enterprises
DoD	:	Department of Defense
DRDO	:	Defense Research and Development Organization
DAC	:	Defense Acquisition Council
DPSUs	:	Defense Public Sector Units
DARPA	:	Defense Advanced Research Projects Agency
DPIT	:	Department of Promotion and Industry Trade
FDI	:	Foreign Direct Investment
GOI	:	Government of India
HPCL	:	Hindustan Petroleum Corporation Limited
ISRO	:	Indian Space Research organization
ICMR	:	Indian Council of Medical Research
ICAR	:	Indian Council of Agricultural Research
LPG	:	Liberal Private Globalization
L&T	:	Lorson and Tubro
MENA		Middle East and North Africa
MSME	:	Micro, Small and Medium Enterprises
NASA	:	National Aerospace and Space Administration
NPM	:	New Public Management
NPA	:	Non-Performing Assets
NPCIL	:	Nuclear Power Corporation of India
NIMBG	:	National Institute of Biomedical Genomics
NRDC	:	National Research Development Corporation
NIF	:	National Innovation Foundation
NITI	:	National Institution for Transforming India
PPP	:	Public Private Partnership
PSU	:	Public Sector Undertaking
R & D	:	Research and Development
S &T	:	Science and Technology
SLA	:	Service Level agreement
SME	:	Small Medium Enterprises
SPSS	:	Statistical Package for the Social Sciences
TIFR	:	Tata Institute of Fundamental Research
TPSED	:	Tata Power Strategic Engineering Division

EVALUATING STRATEGIC IMPLICATIONS OF PRIVATISATION ON SENSITIVE AND ALLIED GOVERNMENT ORGANIZATIONS

CHAPTER I

INTRODUCTION

1.1 Background of Study

Market friendly economy was introduced in China during 1976 to 1989. In India, during 1991-1996 New Economic Policy (NEP) and LPG model was introduced to improve the economy in significant manner*. Since the government was owner of all PSUs and faced continuous fiscal deficit of no of PSUs because of underperformance that led to becoming NPAs hence government started imperative initiatives like decentralization, disinvestment, FDI and privatization to resurrect the economy.

Any policy evolved after a lot of effort is based on the set of principles, guidelines and rulings to govern the different organizations, institutes under government as well as private companies to achieve desired goals. Governing principles can help to understand their intension but can be varied depending upon specificity and clarity. By and by, due to interplay between generations and learnings, it leads to notable degeneration or maybe upgradation, but actual principles fall behind the time (Perandres de Vicente, 2024).

The New Public Management (NPM) established in 1980 was intended to carry out the revolution in management but same is abated during course of time. The decentralization of organization was imminent due to different governing factors mainly delegation of powers to appropriate authority for faster decision making and to focus on more economic growth. Over past years China expedited the decentralization to empower the local government to achieve fiscal goals. The Indian government had started the privatization as a measure of an economic reforms of non-sensitive as well as sensitive organizations during 1991-1996 for fair distribution of specialized work and to offload the responsibility of government institutions to meet the timely need of domestic as well as global market (Winchip et al., 2023).

Though some of the sensitive Government institutions have successfully delivered projects of national interests but at the same time important projects suffered multiple setbacks resulted in notable time and cost overrun in the past even after granting additional funds[**]. By the time technology is developed in India it becomes obsolete globally. The Nation cannot wait for delay of strategic projects which may compromise national security. Advanced technologies can be acquired by private firms in shorter for futuristic use. To maintain comparable pace and competitiveness in the technology advancements, the contentment of technology management in existing government set up found to be not feasible, hence policy makers have foreseen the difficult situation ahead and decided to go for privatization to protect national interest or security and achieve socio economic goals (Albalate et al., 2024).

* https://www.youtube.com/watch?v=rCfd33-9TOI
**https://theprint.in/india/how-drdo-projects-overshot-budgets-by-up-to-426-cag-flags-serious-flaws-in-cost-estimation/1288206/).

In an era characterized by the imperative to adapt and transform, the foundational structures of governmental institutions are in process of evolution to establish its effectiveness, if not monopoly. Further as the government institutions are revamping their perceptions to improve the performance and reduce the cost of support services, greater use of private sector capabilities and resources is an essential strategic objective.

However, there has been growing disquiet about the prolonged completion of government projects, especially those overseen by sensitive government entities jeopardizing national Interest. Ensuring the timely completion of government projects is vital for achieving operational readiness, strategic deterrence, and an effective reaction to emergent threats. Hence, it is crucial to identify and resolve the underlying reasons for project delays to protect the nation's interests. To address the issue of project delays, the government is considering two primary approaches: privatization and partnering with the private sector. Privatization refers to the transfer of the management and operation of government projects to private corporations. Collaboration, on the other hand, involves forming partnerships with private companies to take advantage of their knowledge, resources, and efficiency in executing projects, especially for sensitive and allied government organisations like defence and space and nuclear energy (Endris et al., 2023).

1.2   Vital Role of Sensitive Government Institutions

Sensitive and linked government organizations refer to a range of institutions that are crucial for a nation's security, technical progress, and strategic concerns. These organizations are responsible for managing confidential data, carrying out advanced research, and creating innovative technologies that are crucial for upholding national independence and competitiveness. Government entities with high sensitivity, such as intelligence agencies and military research institutions, have the responsibility of safeguarding national security by collecting intelligence, conducting counterterrorism operations, and developing strategic plans. Their operations are conducted covertly to protect classified data and guarantee the security of civilians from both domestic and foreign dangers. On the contrary, government bodies that are allied work closely with sensitive entities to provide support for research, development, and strategic objectives. These institutions may include of research laboratories, scientific agencies, and specialized government departments that are dedicated to innovation and strategic planning.

The significance of sensitive and associated government agencies cannot be exaggerated, especially in the current intricate geopolitical environment. Governments worldwide continue to prioritize national security as a primary issue, given the diverse range of threats including terrorism, cyber-attacks, geopolitical tensions, and asymmetric warfare. Government institutions with a high level of sensitivity have a vital function in overseeing potential dangers, collecting information, and creating plans to reduce risks and safeguard the nation's interests. Their proficiency in the fields of intelligence analysis, surveillance, and counterintelligence is crucial for detecting emerging threats and efficiently addressing security concerns.

The organization allocates resources towards innovative research initiatives and engages in partnerships with academic institutions, industrial collaborators, and international organizations to enhance scientific understanding and create advanced technologies. These endeavours not only improve the technological capacity of the country but also generate prospects for transferring technology, exchanging knowledge, and commercializing breakthroughs. These organizations promote innovation and entrepreneurship, which leads to economic growth, job creation, and enhances the nation's competitive advantage in the worldwide market.

Furthermore, sensitive and associated government organizations have a vital role in cultivating strategic alliances and advancing regional stability. The organization forms partnerships with foreign governments, international organizations, and industry stakeholders in order to tackle shared difficulties, exchange effective methods, and advance peace and security. These alliances enable the exchange of information, the undertaking of cooperative research initiatives, and the coordination of efforts to combat global dangers such as terrorism, cyber assaults, and pandemics. These groups promote collaboration and communication, which helps establish confidence and improve diplomatic relations among states.

In addition, sensitive and linked government entities play a crucial role in safeguarding critical infrastructure assets and assuring the durability of key services. Their role involves devising tactics and implementing advanced technologies to protect vital infrastructure, including energy facilities, transportation networks, and communication systems, from both physical and cyber risks (Zandee,2020). By conducting risk assessment, analysing threats, and implementing emergency preparedness measures, these organizations reduce risks and strengthen the ability of critical infrastructure assets to withstand interruptions and attacks.

Ultimately, sensitive and linked government entities have a diverse and crucial role in protecting national security, stimulating innovation, facilitating economic development, and encouraging international collaboration. Their endeavours are crucial for upholding the nation's autonomy, competitiveness, and ability to withstand challenges in an ever more intricate and interconnected global environment. The significance of these institutions in safeguarding the nation's interests and ensuring its prosperity cannot be exaggerated, given the evolving dangers and multiplying problems.

1.3 Entry of private services into Sensitive and Allied Government Organizations

In 2014, the Indian government took major steps towards privatization by permitting foreign direct investment (FDI) in the country's public sectors. Initially, the FDI rate was set at 49%, but it was increased to 74% in 2020. Eventually, the government allowed 100% FDI through the "approval route." (Talukdar, 2020). It was anticipated that the decision will lead to increased availability of cutting-edge technologies created in foreign nations. The critics of this privatization proposal have expressed their opposition by raising worries about issues like as unemployment, job displacement, and national security risks that were expected to arise from the enactment of this program. They contended that private enterprises will consistently be motivated by the goal of maximizing profits, resulting in the loss of thousands of jobs in the

R&D, manufacturing, and production sectors over the coming years, as well as a decrease in the overall level of national security.

Given that government sector enterprises were unable to produce goods of satisfactory quality that aligned with the country's requirements, the privatization of this industry was a must for the nation at this juncture. Due to the lack of competition in various industries, the manufacturing sector of the nation has gained a reputation for creating substandard products. This is the main underlying factor contributing to the issue. The Bhabha Atomic Research Centre (BARC), with a staff of more than 14,000 individuals, is responsible for advancing India's nuclear objectives, making it a prime example of this phenomena. Nevertheless, based on a study conducted by (Dixit, 2020) on BARC personnel, it was found that everyone is accountable for their own specific assignment. The workshop, once capable of doing miracles, is now unable to even commence studies. Similar cases have occurred in Ordnance Factory Board (OFB). This may be because of disparity between rate of retirement and rate of employment, lack of knowledge transfer from experienced staff to newly recruited employees. In the mid-period, there was no potential work order from main customer the Indian Army. It is important and essential to retain the skill of present employees, especially technicians. Because of absence of supply or work order, the retention of specialized skill of worker has become is very difficult because of natural human tendencies to forget and they are bound to make mistake if similar work is started after huge gap. The performance of employees gets deteriorated. On the other hand, in some cases due to dereliction of duties resulting into poor performance of organisation, they will not be terminated from their current roles because of job security. Instead, they will be transferred or absorbed to a less favourable department and will receive the same salary. Some public sector units are experiencing a surplus of labour, resulting in unnecessary resource depletion and an increase in the cost of output per unit. Political concerns have additionally influenced the overstaffing of these units by personnel who do not possess specialized expertise. Nevertheless, the involvement of private companies in the sensitive and related sectors is anticipated to address a considerable portion of these problems, because to the heightened competition that will emerge among the various organizations as they vie for profitable contracts.

When evaluating the importance of greater private involvement in sensitive and allied organizations in India, there are two main factors to examine. One of them is associated with business, while the other is more focused on strategy. Conversely, it is crucial to acknowledge the free-enterprise system as a significant contributor in achieving Aatmanirbhar Bharat (Singh, 2022). The privatization of the defines sector is crucial at present to enhance India's military industrial competence, self-reliance, design competency in vital structures, as well as quality, time, and profitability. India can facilitate this process by assigning certain tasks to the private sector, such as manufacturing gliders, parachutes, optics, components, and related accessories, as well as developing specialized equipment for the comfort of soldiers. India's new import policy prohibits the import of 101 various categories of defines equipment. This measure aims to enhance the role of domestic enterprises and the private sector in India's quest to achieve greater self-reliance. There is no assurance that state-owned firms will be divested as a component of the privatization process in the defines industry. These firms are required to be reviewed periodically to ascertain their productivity, quality reliability for supply chain and

maintain confidentiality regarding sensitive nature of information. Private players, particularly those engaged in missile technology, may still be deemed untrustworthy when it comes to handling highly sensitive technologies.

Nevertheless, this initiative to privatize has encountered opposition from multiple sources, mostly cantered upon apprehensions over unemployment, job displacement, and potential national security hazards. Detractors contend that private firms, motivated by financial gain, may give precedence to cost reduction strategies such as workforce reduction and subcontracting, resulting in employment reductions in vital industries such as research, development, manufacturing, and production. Furthermore, there are concerns regarding the possible vulnerability of national security interests when sensitive technologies and infrastructure come under private ownership.

Advocates of privatization advocate for the involvement of the private sector in government-owned firms by highlighting the perceived inefficiencies and quality issues prevalent in these entities. They argue that government-owned firms, such as the Defence Research and Development Organization (DRDO) and the Indian Space Research Organisation (ISRO), despite their critical missions, have struggled with various challenges including bureaucratic hurdles and limited resource allocation.

India's recent import policy, which imposes limitations on the importation of specific defines equipment, reinforces the government's dedication to fostering domestic production and encouraging private sector involvement in defines manufacturing. Nevertheless, there are still reservations over the dependability of private entities, particularly when it comes to managing extremely delicate technologies like missile technology.

Essentially, the discussion surrounding privatization in sensitive and linked government institutions in India highlights the larger conflicts between the objectives of effectiveness, ingenuity, and self-sufficiency on one side, and apprehensions about employment stability, national security, and dependability of the private sector on the other. Striking a balance between these conflicting objectives will be vital for determining India's future path in this field.

The collaboration between the Indian government and the private sector has yielded remarkable progress in both the defence and space industries. In the defence sector, the opening to 100% private sector participation in 2001 marked a significant milestone, resulting in the issuance of 442 licenses for manufacturing defence items. While the public sector continues to maintain a significant presence with an annual turnover of Rs. 63,208 crores in 2018-19, the private sector's annual turnover of approximately Rs. 15,000 crores showcase its growing contribution. In Financial year 2024 - 25 (1st Quarter) India achieved 76% growth compared to same quarter in last year, the private sectors likewise the annual turnover was approximately more than 16,000 cr. that shows growing contribution of private sectors (Fabre & Straub, 2023).

At present the Indian space economy value at around Rs 7600 crore (8.4 million dollar) with 2% spare in global economy. Considering the whopping no of start epitenon government

entities, the privatization of Indian space represents transformative opportunity for the country of Rs 3500 crore (44 million dollar) by 2033 with about 8% of global share[8].
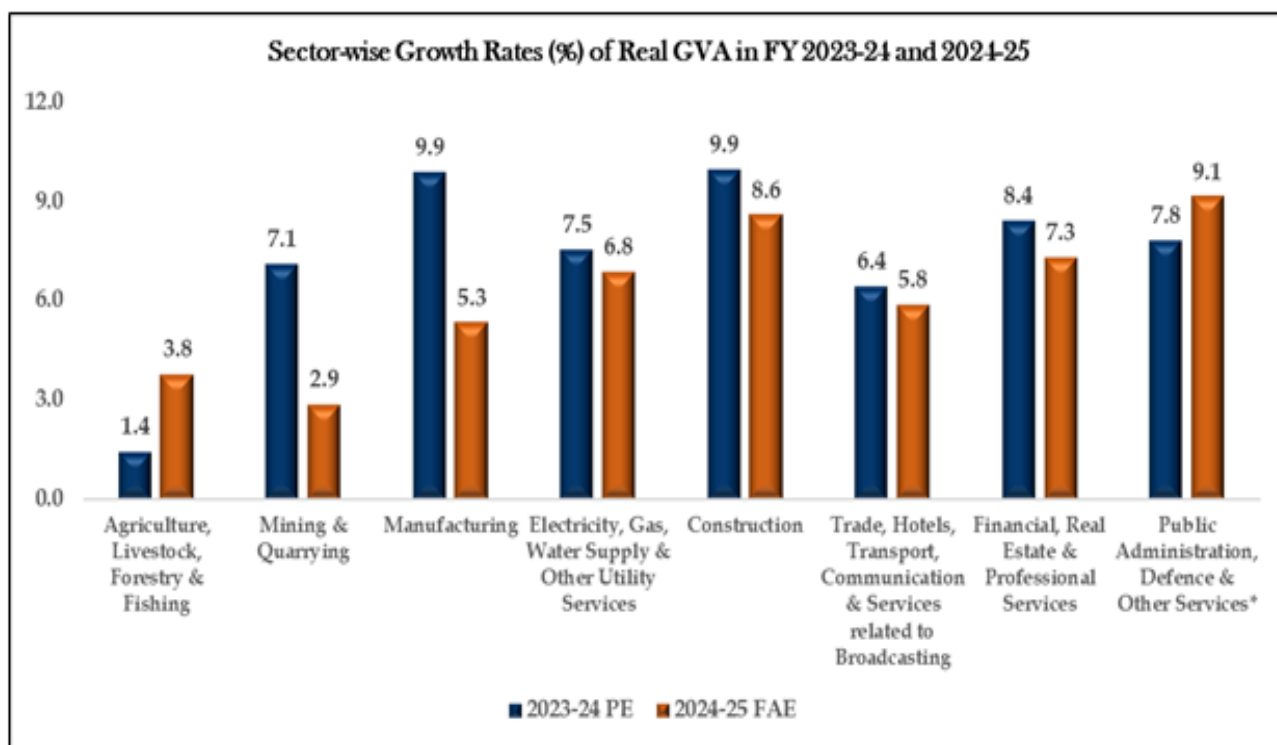
Figure 1.1: Sector wise growth rates (%) in real GVA FY 2023 and 2024-25
(*Source: https://pib.gov.in/Press Release Page. aspx? PRID=2090875*)

Figure1.1 shows nominal GDP has witnessed the growth rate 9.7% in the first quarter of the year 2024-2025 over the growth rate 9.6% in the first quarter of financial year 2023-2024. In the space sector, collaborations between the Indian Space Research Organisation (ISRO) and private space companies like Sky root Aerospace, Dhruva Space, Agnikul, and Bellatrix Aerospace have led to significant advancements. Sky root Aerospace, for instance, became the first start-up to partner with ISRO, gaining access to crucial facilities and expertise. Domestically they have fostered the competitive environment between highly performed sensitive government organizations encouraging more companies to participate spare, exploring defense R&D and manufacturing and sectors. Dhruva Space's scalable satellite platforms and Agnikul's cost-effective Small Satellite Launch Vehicles (SSLVs) are notable examples of the innovative solutions emerging from these partnerships. ISRO has taken initiatives to establish many starts ups to support their launch vehicle activities.

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[8] https://pib.gov.in/Press ReleasePage.aspx?PRID=2090875

As per the government directives, it has established many startups. Some of the major examples are AMC-ARISE and Space-tech-invention network under Atmnirbhar Bharat (Stiel, 2023).

These collaborations have not only propelled technological advancements but have also impacted India's political landscape domestically and globally. Domestically, they have fostered a competitive environment, encouraging more companies to participate in space exploration and defence manufacturing. Hence, the collaboration between sensitive government institutions such as BARC, ISRO and DRDO has taken initiatives to increase the collaborative efforts under PPP model with Private companies such as TATA, L&T, Bharat Forge, Solar Industries, Premier Explosive Ltd etc. to expedite the envisioned growth by exploiting the available resources within the institutions. It has taken a new leap to foster innovation in atomic space and defense technologies. Globally, they have positioned India as a major player, attracting foreign investment and signalling its growing influence in critical sectors.

Similarly, the evolving landscape of India's nuclear energy sector has witnessed a gradual opening to private investment, notably exemplified by strategic collaborations between NPCIL and leading private companies. Partnerships with entities such as NTPC (formerly National Thermal Power Corporation) have marked significant milestones in this trajectory. These collaborations offer avenues for private capital infusion and expertise within critical areas such as plant construction and land resources (Bachiller, 2023). Such initiatives signify a paradigm shift in leveraging private sector resources to bolster the nation's nuclear energy infrastructure, fostering innovation and sustainability in this vital sector.

According to NITI Ayog report 2024-2025, the country has experienced a notable influx of private Foreign Direct Investment (FDI) rising 45% to 29.79 US dollar [+++] compared to same duration in last fiscal year. This is required to attract foreign investor in India and get momentum in make in India initiatives to establish military industrial complex.

 Specifically, data indicates a substantial increase in private FDI inflows into various segments of the defines industry, ranging from manufacturing to technology development and infrastructure. This is substantiated by the figure below in which shows comparative growth in India's FDI inflow (figure1.2) during financial year 2024 and 2025.This surge in private investment underscores the government's commitment to enhancing the role of the private sector in defines production and fostering greater innovation and efficiency in the sector. Additionally, it reflects India's broader strategic objectives of modernizing it defines capabilities and promoting self-reliance in defines manufacturing. The data on private FDI expansion in the defines industry serves as a testament to the growing partnership between the government and the private sector in advancing India's defence capabilities and bolstering its strategic national security infrastructure[@@]. It is substantiated by 26% growth seen during half of FY 2024-25(figure 1.2). It reflect India's growing appeal in global competitive environment.

[+++]https://www.niti.gov.in/sites/default/files/2025-02/Annual%20Report%202024-25%20English_FINAL_LOW%20RES_0.pdf

[@@] https://defenseindustry.in/indias-strategic-and-national-security-issues/
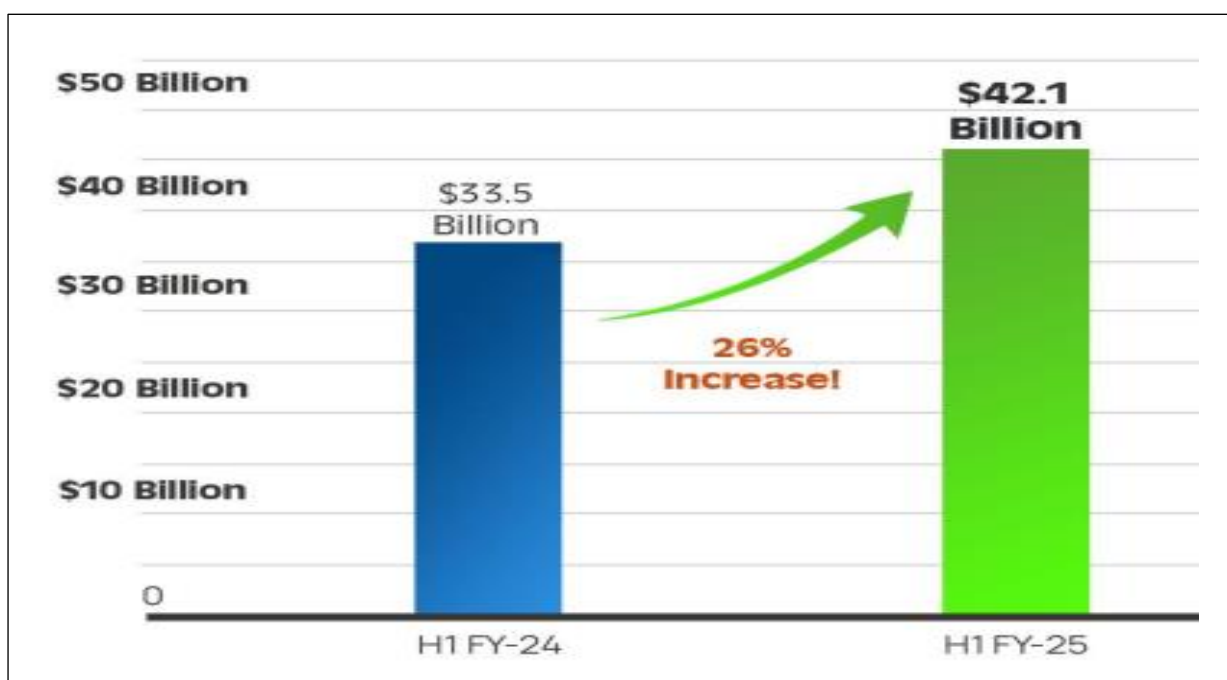
Figure 1.2: India's FDI inflow rise during half of current fiscal year 2024 to 2025
(*Source: DPIT*)

This is mostly achieved through a combination of public-private partnerships (PPPs). In addition to PPP in other sectors, the government has been promoting PPP, model in defense sector. Some of the major examples of DRDO and PPP are Pinaka Rocket system and 155mm/52 Cal ATAGS. These projects of national interests are developed by DRDO in association with L&T, BFL, TPSED. Hence the future of R&D under PPPs for development of numerous projects is in pipeline specially for items under import bans which are supposed to be developed under Vikasit or Atmanirbhar Bharat. Hence there in much scope ahead to carry out developmental work on more than 928 Military items, the strategically important components placed under import ban list. It has promising future for PPPs as it will help to achieve / sustainable socio-economic development including urban development. This policy received a boost lately when the former Defence Minister Arun Jaitley, in collaboration with the Prime Minister's Office, openly advocated for the involvement of the private sector as the most effective path forward.

Hence, Collaborations between sensitive government institutions like BARC, ISRO, and DRDO with private companies such as Tata and L&T expedite projects, optimize resources, and foster innovation in defense and technology. While beneficial for technological advancement, partnerships raise concerns about data security and confidentiality. To mitigate risks, strict procedures, confidentiality agreements, and security measures are vital. Government agencies must assess partners' reputation and reliability to uphold ethical and legal standards. Integrating private services within government entities enhances military readiness but requires careful consideration to protect sensitive data and uphold national security priorities.

1.4 Significance of Study

The very motive of formation of public institutions is to meet foreseen financial, socio-economic goals and political objectives. Government organizations are unable to cope with the future challenges because of cutthroat competition worldwide. This may be due to lack of competent management, modern facilities, improper utilization of intellectual assets, manpower etc. It is imperative to carry out systematic analysis right from the reasons behind the debacle of sensitive government institutions or their underperformance. The inter government disciplinary measures and proposed reforms (Misra SN, 2024) are underway with retention of existing structure of sensitive organization with the privatization in phased manner. It would be reviewed periodically. The government must carry out decentralization and cede the organizations to private sectors under strong memorandum of understanding and necessary security measures. This is required to explore the full potential of sick organizations by efficient ways, economize and convert into profit making so that it would contribute to the economy of the nation.

The investigation into the negative long-term effects of private sector participation in vulnerable government organizations are also of great importance in various areas, including national security, governance, and socio-economic well-being (Avishai Melamed, 2024). First and foremost, the consequences for national security are of utmost importance. Government entities with high-level security clearances have a crucial role in protecting sensitive information and leading important technology developments for defence and intelligence goals. The encroachment of private companies into these domains gives rise to apprehensions regarding possible risks such as data breaches, conflicts of interest, and jeopardizing national security. It is crucial to have a thorough comprehension of the long-lasting impacts of privatization in these institutions in order to develop measures that can reduce security threats and guarantee the dependability and effectiveness of national defence capabilities. (Bommakanti K, 2023).

Furthermore, the study explores crucial questions of governance and responsibility. Privatizing government operations can result in changes to regulatory frameworks, transparency standards, and oversight systems. Private firms may have different goals and priorities than government agencies, which can affect the accountability and transparency of sensitive government bodies. Analysing the adverse consequences of private sector involvement clarifies the ways in which governance systems change and adjust during the process of privatization[1] This understanding is crucial for maintaining public confidence and promoting efficient governance processes inside these organizations. Moreover, the study explores the economic and social consequences of privatization. Privatizing government tasks can have profound consequences for employment, the distribution of income, and the accessibility of key services. Possible consequences encompass the displacement of jobs, the existence of wealth disparities, and unequal access to services, especially in crucial fields like

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[1] https://www.brookings.edu/wp-content/uploads/2016/06/20020128.pdf

military and intelligence. Examining the long-lasting social and economic effects of private sector participation provides valuable insights for creating policies that promote fair and balanced growth, equitable progress, and overall societal welfare within these organizations and the wider community. Lastly, performing worldwide comparison analysis provides vital knowledge. Privatization patterns differ among nations, and analysing global experiences offers valuable insights and effective solutions for policymakers and practitioners. Comparative analysis enables the flow of knowledge, identifies shared issues and opportunities, and provides evidence-based insights for policymaking. It helps to identify the optimal combination of public and private sector involvement in sensitive government tasks, thereby improving organizational performance and protecting the interests of citizens and the state in a complex and linked environment.

Some aspects such retrogressive or negative impact such as security, data confidential espionage, theft etc. are also equally important. Considering the entry of private services into sensitive government organization, the positive and negative impacts are also required to be considered to balance the evaluation.

Ultimately, it is crucial to thoroughly investigate the negative, lasting consequences of private sector involvement in susceptible and linked government organizations. This is necessary to effectively address urgent issues pertaining to national security, governance, effectiveness, economic development, and social well-being. Researchers may analyse the complex effects of privatization in many areas, providing policymakers with evidence-based knowledge to improve organizational performance and safeguard the interests of stakeholders in a changing global environment.

1.5 Operational Definition

i) Private services: Private services are activities, functions, or operations that are offered by entities in the private sector, such as firms, businesses, or organizations that operate for profit.
ii) Understanding the term "privatization" is challenging due to its wide range of potential results, ranging from "decentralization" to "market discipline" (Kehinde, 2010). Researchers have identified a clear division between the public sector and the private sector in terms of their resources, settings, and management practices. They also explore privatization as a significant transformation in the institutional domain (Johnson, Smith, & Codling, 2020). Another description of the concept is the transfer of certain government services to private markets and the implementation of private market practices, values, and goals in public administration and policy (Argy, 2011). Privatization is often proposed when government firms are perceived as ineffective and the private sector is seen as a sustainable and more efficient means of promoting economic progress (Boycko, Shleiferm, & Vishny, 2016). The desire to enhance the effectiveness of the economy, decrease government budget expenditures, expand direct ownership of productive resources, and/or reduce and redirect the government's role towards focusing on the provision of social and economic infrastructure, may also contribute to the involvement of private services in government entities (Pheko, 2013).

i. **Sensitive and Allied Government Organizations:** Sensitive and allied government organizations in India refer to the topmost public research and development and organisation, manufacturing centres under ministry of S&T, MoD. Ministry of health, atomic energy commission, space etc. They are restricted to high-end R&D activities. Some of them are working for national interests which cannot be compromised at any cost (Leruth, 2012).

ii. **Retrogressive Long-Term Impact:** The term "retrogressive long-term impact" refers to the negative outcomes or repercussions that occur when private sector companies enter sensitive and related government agencies for a prolonged length of time.

iii. **National security:** National security refers to the actions and strategies implemented by a government to safeguard the nation's autonomy, territorial boundaries, and populace against both domestic and foreign dangers.

iv. **Governance and Accountability:** Governance encompasses the procedures, frameworks, and systems by which choices are determined, authority is exerted, and resources are distributed within an organization or society. Accountability pertains to the duty of individuals or organizations to acknowledge and assume responsibility for their actions, decisions, and results.

v. **Public Private Partnership**: A Public-Private Partnership (PPP) is a collaborative agreement between a government entity, statutory body, or government-owned organization, and a private sector entity. The concept is represented by figure.1.3 below. This agreement aims to provide public assets or services for the benefit of the public. The private sector entity is typically responsible for making investments and/or managing the project for a predetermined duration and services provided meet specific quality and performance criteria.

Figure 1. 3: Public Private Partnerships (PPP)
(Source: https://images.app.goo.gl/5Y1vLacyz9X3nhT66)

1.6   Collaboration of Sensitive Organizations with Private Sector

The collaboration between sensitive government organizations like the Defence Research and Development Organization (DRDO), Bhabha Atomic Research Centre (BARC), and Indian Space Research Organisation (ISRO) with the private sector in India's has garnered significant attention in recent years. Some of major reasons for this collaboration could be summarised as follows [P]:

a)   Resource constraints: It refers to the limitations that sensitive government agencies often encounter in terms of funding, technology, and expertise. The private sector, leveraging its abundant resources and expertise, may provide invaluable assistance in surmounting these limitations.

b)   Technological improvements: This necessitates continuous innovation and adaptability, posing challenges for government institutions with bureaucratic processes and slower decision-making. Engaging in partnerships with private companies provides government institutions with the opportunity to utilize state-of-the-art technologies and specialized knowledge, thereby ensuring their ability to remain competitive.

c)   Challenges: Government organizations may face challenges related to inefficiency, bureaucratic procedures, and delays in project implementation. Collaborating with private companies renowned for their agility, efficiency, and punctuality can assist overcome these obstacles and expedite project completion.

d)   Specialized Skills and Knowledge: Sensitive government initiatives frequently necessitate certain skills and domain expertise that may not be easily accessible within the organization. Engaging in partnerships with private sector enterprises provides the organization with the opportunity to tap into specialized talent pools and knowledge bases, thereby bolstering its capabilities.

Hence, Collaborations between government institutions handling sensitive information and the private sector offer strategic advantages but also entail risks. Protecting national security and confidentiality is paramount, requiring stringent security measures and thorough evaluations of private partners.

India is one of the world's biggest buyers of defence equipment with total value i.e. lay off Rs 6.12 lakh crore (74.4 billion dollars) taking share of 13.6% of total budget in the year 2024. However, defence export has increased from 42 countries in the year 2019 to 82 countries in the year 2023 due to collaborations and PPPs[##]

Airport privatization in India has brought about changes in people management practices, driven by various privatization models and the integration of technology and innovation (Swaminathan S, et al., 2023). The review finds that airport privatization can catalyse operational efficiency, infrastructure development, and customer-centric services. workforce's well-being, development, and productivity.

[##] http://www.ibef.org/industry/defence-manufacturing

[P] https://www.slideshare.net/AsifIqbal109/chandrayaan-3pptx-260189719
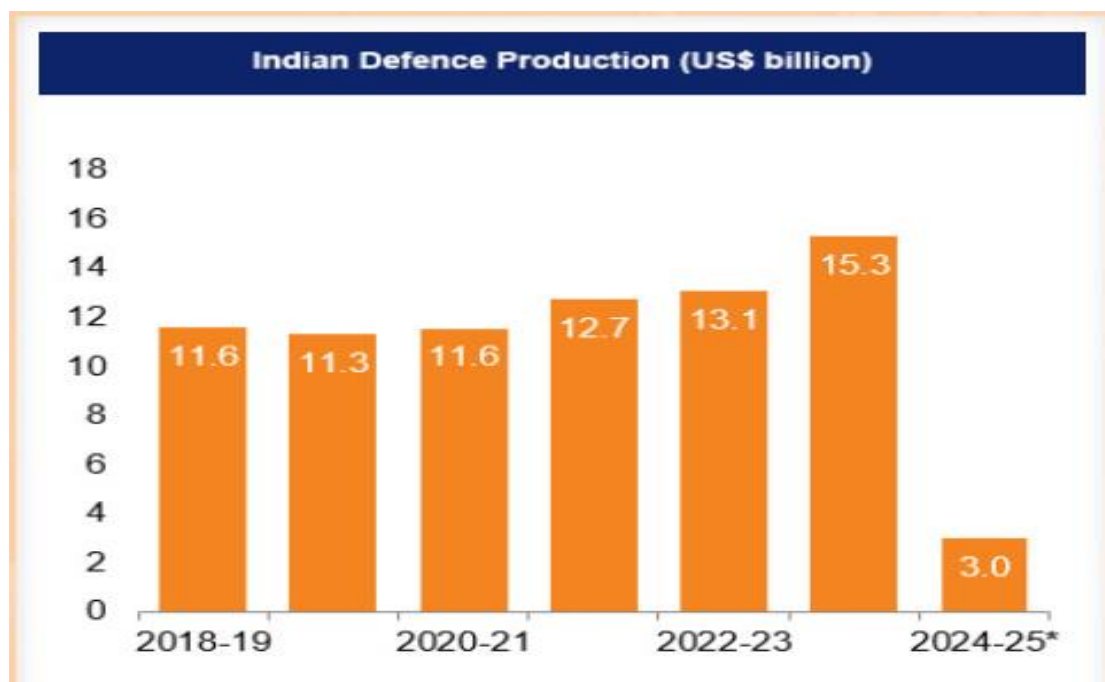
Figure 1. 4: Growth of Indian defence production with time
(Source: https://www.ibef.org/industry/defence-manufacturing:)

Figure 1.4 shows the value of defence production in the FY 2023 was Rs 1,27,265 crore(15.57 billion US dollar) while share of defence PSU alone stood at Rs 74,434crore (US dollar 8.99 billion). Figure 1.5 shows comparative rise in defence export.
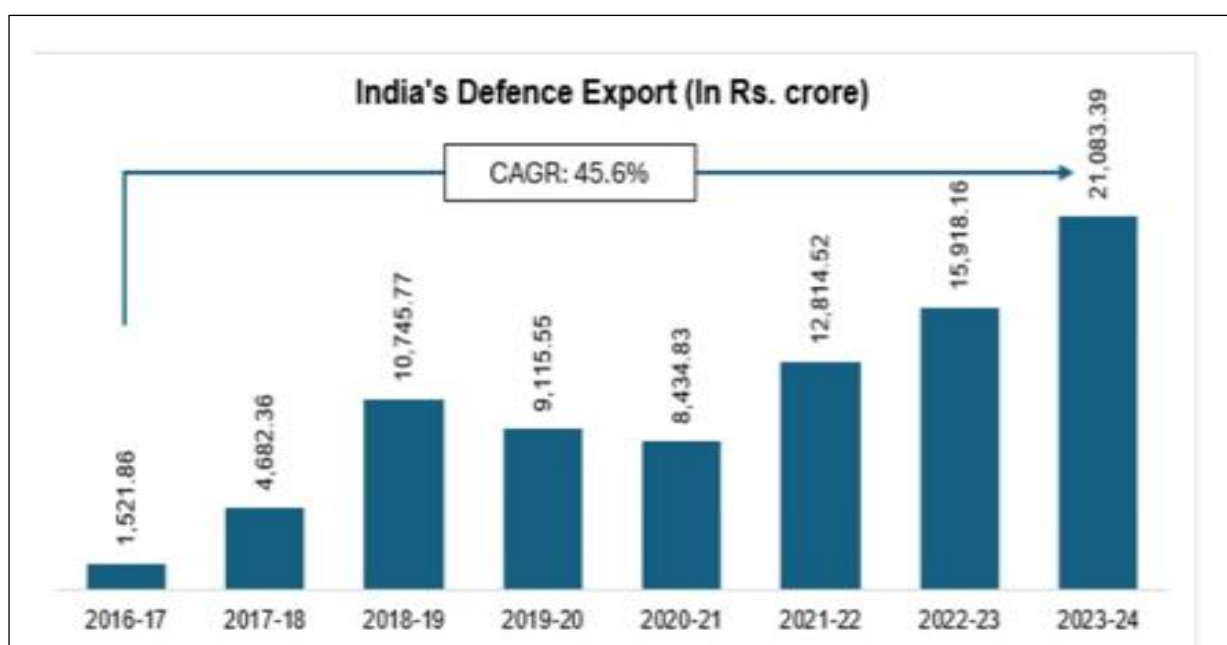
Figure 1.5: Year wise defence export by India
(*Source: Ministry of Defence*)

1.7 Collaborative requisites

The collaboration between sensitive government organizations and the private sector has been successful primarily due to the complementary strengths and resources each party brings to the table. This synergy between the public and private sectors has led to accelerated progress in defence technology development, enhanced efficiency in project execution, and improved outcomes for national security initiatives. However, some of the issues regarding IPR which may be required to resolve amicably between top management of sensitive government organizations and Development cum Production Partners (DcPP). Other issues are given below.

a) **Retrogressive Government Functioning:**
   Though the India has earned esteemed organizations in pre and post-Independence, its full potential is required to be explored to the maximum extent during the present era of competitiveness. The traditional government functioning has been encompassed with outdated procedures, administration with excessive job security to the employees and there is no interplay between inheritance and modern approach of functioning. It creates complicity during implementation of policies and realistic functioning. Many times, there has been bigoted approach regarding selection of vendor[%%]. Despite the benefits of collaboration, the involvement of the private sector in sensitive government organizations has exposed certain shortcomings in traditional government functioning. Bureaucratic red tape, rigid procurement processes, and hierarchical decision-making structures within government agencies have often

b) hindered the agility and adaptability required to keep pace with rapidly evolving defence technologies.

c) **Hindrance in Structural Change:** In every organization, establishment under the umbrella of DRDO, Defense Production Agency, BARC, ISRO etc. there exist typical bureaucratic way of functioning which may be biased and is governed by personal relation, vested interests which does not allow top management to take neutral decision in the favor of nations interest while appointing the person and awarding various contracts to private agencies. This type of approaches cripples the desired progress. This is the present plight of some sensitive government organizations. Moreover, the entrenched bureaucratic culture within sensitive government organizations has posed challenges to implementing structural changes necessary for effective collaboration with the private sector. Resistance to change, lack of accountability, and vested interests in maintaining the status quo have impeded efforts to streamline processes, enhance transparency, and foster a culture of innovation within these organizations (Amrantou, 2018). As a result, the full potential of collaboration remains unrealized, and the benefits of structural reforms are yet to be fully realized in the defence sector.

d) Risks Associated with Sharing Sensitive Information: One of the primary concerns in collaborating with the private sector is the risk of compromising sensitive information and national security interests. Recent espionage due to honey trap has happened in DRDO wherein some official personnel from Army, DRDO, Navy become a victim and sensitive

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[%%] https://cbi.gov.in/press-detail/Mjc4MA==

information was passed on to adversaries. It has also been reported in the open media [?]. DRDO, BARC, and ISRO deal with highly classified data, proprietary technologies, and strategic capabilities crucial for India's defence preparedness. Therefore, caution must be exercised to ensure that sensitive information does not fall into the wrong hands. The sharing of confidential designs, research findings, and technological know-how with private entities requires stringent safeguards, robust encryption mechanisms, and comprehensive security protocols to prevent unauthorized access, espionage, or intellectual property theft. In conclusion, while the collaboration between sensitive government organizations and the private sector holds promise for enhancing defence capabilities and fostering innovation. However, it also presents challenges in terms of

e) **Hindrance in Structural Change:** Bureaucratic inertia, resistance to change, and risks to national security. Addressing these challenges requires a concerted effort to promote transparency, accountability, and cybersecurity measures while harnessing the potential of collaboration to drive structural reforms and technological advancements in India's defence industry.

1.8 Evolution of Private Sector Involvement in Government Organizations

The progression of private sector engagement in government institutions is influenced by a dynamic process driven by economic, technological, and regulatory developments, specifically in the defence industry. Due to adequate in-house production facilities, governments started delegating non-essential responsibilities to private contractors to improve operational efficiency and lower expenses. The reason was to establish a vendor so that it will be advantageous for mass production provided the product is inducted into the services. The initial phase established the foundation for wider privatization efforts that gathered speed in the second half of the 20th century, propelled by neoliberal economic philosophies that advocated for market-based solutions.

That was followed by the establishment of public-private partnerships (PPPs), which suggested a shift towards cooperative approaches for the delivery of services and the development of infrastructure, particularly in the sphere of defence. In the context of public-private partnerships (PPPs), formal agreements are made between government agencies and private sector companies with the purpose of jointly financing, constructing, supervising, and maintaining public infrastructure projects or providing services. These partnerships utilise the expertise, inventiveness, and financial resources of the private sector, while simultaneously dividing the risks and responsibilities between the public sector and the private sector collaborators. This is substantiated by an example of development of flagship project 155mm/52 Calibre Advanced Towed Artillery Gun System (ATAGS) jointly developed under PPPs by DRDO and BFL, TPSED. Such types of programs initiated by government of India leads to employment generation also (Phuyal, 2024).

[?] https://www.youtube.com/watch?v=cedypOaNeVk
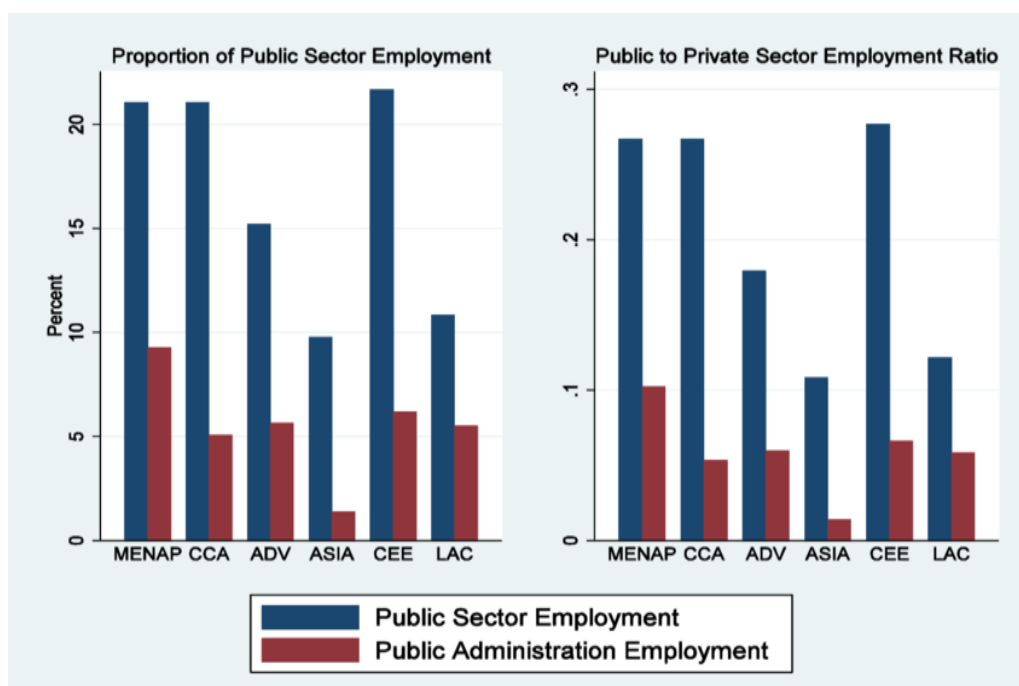
Figure 1. 6 : Importance of Public-Sector Employment, 2008–11 average
(Source: https://images.app.goo.gl/kdXtT9o8Htc1De1b8)

The left panel in Figure 1.6 displays the ratio of public employment to total employment (the combined number of private and public employment) across different areas. Alternatively, the right panel displays the proportion of public-sector employment compared to private-sector employment in different regions. The reader may perceive one metric as more intuitive than the other, however, our emphasis is on the right panel. The blue bars represent the comprehensive gauge of public employment, whereas the red bars represent the specific gauge of public employment. The data clearly indicates that the government is a significant employer in the MENA, CCA, and CEE countries, in comparison to other areas. The MENAP region is globally recognized for having the largest relative significance of public administration.

The collaboration between sensitive affiliated organizations and the private sector is motivated by various crucial elements, all of which contribute to the mutual advantages and goals of both sides.

- Sensitive government agencies, including those in military, national security, or intelligence, frequently face diverse hurdles in their activities. These hurdles may encompass bureaucratic procedures, rigorous restrictions, procedural setbacks, and financial limitations. Lengthy procurement processes and limited budget allocations might impede the development and implementation of sophisticated defence systems. Collaborating with the business sector enables organizations to access external expertise, resources, and finance to effectively tackle difficulties.

The private sector provides access to important technology skills, innovation, and knowledge capabilities that are sometimes absent in sensitive government institutions. This is due to

adequate funds, independent decision-making capabilities, short procurement procedure, less hierarchy hence less interference etc. Specialized private enterprises, especially those in fields like information technology, engineering, and research and development, have sophisticated technical expertise and creative solutions that may effectively meet the complicated requirements and deficiencies of sensitive organizations. Defence contractors can provide advanced technologies and specialized knowledge in areas like cybersecurity, surveillance, and weapon systems development. This can greatly improve the capacity of government organizations that deal with sensitive matters. For example, the Chemical Agent Development of Detector and Alarm (ACADA) has been developed successful with industry partner resp. L&T[X].

- expedite innovation, and attain cost reductions by combining resources, experience, and capabilities. Collaborative research and development efforts between government research facilities and commercial technology corporations can result in the creation of innovative technologies that have practical uses in both civilian and defence sectors, ultimately benefiting society.

Adapting to this evolving collaboration requires innovative partnership models and flexible approaches that leverage the strengths of both sectors. By fostering greater collaboration between government entities and private enterprises, policymakers can unlock new avenues for creativity, effectiveness, and improved outcomes for the public. To navigate the challenges of the 21st century and drive growth, governments and businesses must continue to explore new avenues of collaboration, recognizing the critical role of their relationship in this endeavour.

1.8.1. Pros and Cons of PPP Collaborations
The following pros and cons are narrated (ref. table 1)

Table :1

Sr no	Pros	Cons
1	Enhanced Efficiency and Innovation	Risk sharing
2	Cost Savings:	Potential Conflicts of Interest
3	Access to Specialized Skills and Resources	Loss of Government Control
4	Risk Sharing.	Contractual Complexity
5	Improved Service Delivery:	Public Opposition and Scrutiny

Hence, when governments participate in public-private partnership (PPP) collaborations, they must thoroughly evaluate the pros and cons associated with such undertakings. This would enable them to maximize the benefits of such partnerships while minimizing any potential negatives. By maintaining a deliberate equilibrium and following established guidelines, governments can efficiently utilize the advantages of both the public and private sectors to provide projects and services that fulfil the requirements of society. Figure 1.7 depicts Benefits and disadvantage of PPP.

[X] https://pib.gov.in/PressReleaseIframePage.aspx?PRID=2106362

Figure 1.7: Benefits and disadvantage of Public Private Partnership
(*Source: https://images.app.goo.gl/BA77JR9Wv9VQmYj27)*

1.9 Evaluation of Strategic Impact of Privatization on PPP Collaborations

Through the elimination of regressive issues inside government institutions and the enhancement of their capacity to successfully connect with private partners, privatization measures have the potential to promote public-private partnership (PPP) cooperation. The following are some of the ways through which privatization can have a positive strategic implication on public-private partnership (PPP) collaborations: Therse are strategic collaborations, innovation through leveraging private sector enterprises, sharing of available test facilities, infrastructure, cost and risks that can culminate into efficient and effective public services through cooperation and motivation.

The nation has earned esteemed organizations Pre and post-Independence and have to be subjected to explore full potential**.** When it comes to overcoming operational challenges, government institutions frequently experience difficulties because of bureaucratic inefficiencies, rigid procurement procedures, and restricted independence. All of these factors can hinder their ability to work with private companies in an efficient manner. The implementation of privatization strategies may lead to the modification of organizational structures, the delegation of decision-making authority, and an increase in operational flexibility. The ability of the organization to participate in public-private partnerships can be improved because of this possibility, which can assist remove impediments.

Utilizing Robust Infrastructure: Government entities typically possess robust infrastructure, research facilities, and regulatory frameworks that serve as a solid platform for the cooperation of public-private partnerships. By cooperating with private businesses government organizations can improve the efficiency of both the parties.

1.10. Retrogressive Long-Term Impact of Private Services on the Functioning of Sensitive and Allied Government Organizations

Advocates of privatized services argue that the private sector frequently transforms government-developed technology into commercial technologies and affordable items for the public. Many individuals are prompt to highlight that this is an excessively optimistic depiction of the scenario. Many privately held spaces exploration as well as defence companies or enterprises often make exaggerated claims that exceed their actual capabilities. There have been numerous instances of private-public collaborations that have proven to be unsuccessful in the commercial sector. The collaboration between NASA and Lockheed Martin to create the X-33 space shuttle incurred a cost of $912 million for NASA and $357 million for Lockheed Martin (Leary, 2001). Furthermore, although businesses typically have an advantage over NASA in implementing ideas and securing money for projects, they must also navigate through several competing interests. While NASA is accountable to the government and taxpayers, private firms must consider factors such as practicality and profitability, the interests of various shareholders, and the reliance on a secure and consistent contract with NASA. Initiatives focused on the expansion of space exploration and knowledge, without immediate commercial applications, may not be developed. Profitability is a crucial factor in numerous actions; hence it is likely to be the case. This suggests that the government still has a role to fulfil in the research and advancement of space exploration to contribute to stronger economy.

In India, where a significant portion of the population belongs to the lower- and middle-class, the privatization of government organizations has led to an increase in many problems related to privacy and the unauthorized disclosure of sensitive and secret data. India's government exhibited minimal inclination in privatizing the nation's defines industry for an extended duration. The decision was primarily driven by safety concerns. Maintaining the security of sensitive information becomes significantly challenging when entrusted to a commercial firm. Private defence companies have engaged in multiple occurrences where they have sold or otherwise jeopardized crucial materials in return for monetary benefits. To expedite and reduce costs in the production process, the Indian government is devising a strategy to transfer some technology developed by the Defence Research and Development Organization to private enterprises (Deb, 2020). Nevertheless, the potential risk of private information falling into unauthorized possession was a matter that must not be disregarded.

Both privately held corporations and state-controlled organizations are vulnerable to cyber-attacks. If a private enterprise manufactures a particular type of military equipment within a nation's borders, it will retain exclusive control over that nation for as long as the manufacturing of that equipment continues. Private enterprises in the Indian defence industry may choose to shift their operations to a different country if they decide to cease their business activities in India, posing a potential risk.

Advocates of privatized services frequently contend that the private sector have the capacity to convert government-created innovations into commercially profitable products that have positive impacts on the broader population. Nevertheless, this viewpoint is not exempt from its detractors. Private enterprises possess superior capabilities in converting concepts into

tangible results and obtaining financial support. However, they also encounter obstacles such as conflicting objectives and worries regarding profitability. On the contrary, in government, many procedures are required to be followed to get the financial sanction and allotment of funds. By the time it is sanctioned the research in the private contender would go ahead of the time because of efficient management body for financial sanction. Collaborations between private and public entities, as the NASA and Lockheed Martin cooperation for the development of the X-33 space shuttle, have occasionally faced issues with exceeding budget and not delivering on commitments, thereby emphasizing the intricacies involved in such relationships.

In India, where a significant portion of the population belongs to the lower- and middle-class, the privatization of government agencies is causing worries regarding privacy and data security, especially in sensitive industries such as defence. Traditionally, the Indian government has been reluctant to privatize the defence industry because of apprehensions regarding the potential compromise of sensitive information by unauthorized individuals. Although there are initiatives to transfer certain technologies created by the Defence Research and Development Organization (DRDO) to private firms to accelerate manufacturing procedures, it is crucial to acknowledge the potential danger of revealing critical information.

Both privately owned and government-controlled industries are vulnerable to cyber-attacks, and the possible transfer of commercial defines enterprises to foreign nations presents concerns to national security. Private enterprises in the Indian defines sector may emphasize financial gains over national interests, potentially engaging in arms sales to dubious customers if it serves their economic objectives. This risk is compounded by the influence of lobbyists, who frequently argue for policies that encourage the sale of weapons. For example, in the United States, major defines contractors hire lobbyists to exert influence on government decisions and advocate for military actions that enhance the sales of weapons.

The situation in India serves as a warning for other countries contemplating the privatization of critical areas such as defence. Privatization presents advantages such as increased efficiency and innovation, but it also poses notable difficulties including national security, data privacy, and ethical concerns. Ensuring a delicate equilibrium between incorporating private sector participation and protecting national interests and public welfare is essential when dealing with the intricacies of privatization in sensitive sectors.

1.11. Strategic Implications of Private Sector Entry on Functioning

The incorporation of the private sector into the operations of sensitive and linked government agencies has complex ramifications that impact several aspects of governance and national security. First and foremost, it can result in a substantial increase in efficiency and innovation within these firms. Private organizations frequently prioritize enhancing efficiency and productivity by utilizing market-driven incentives to encourage innovation and streamline operations. Their proficiency in management practices, technology implementation, and operational effectiveness can introduce innovative ideas and methods into government bodies, resulting in enhanced performance and service provision. In government sectors this type of activeness may not be possible because of bureaucratic red tape and lack of decision-making capability at various levels.

Nevertheless, in addition to the improvements in efficiency, the involvement of the private sector gives rise to concerns about accountability and transparency. Government agencies are often bound by rigorous regulations and oversight procedures designed to ensure accountability to the public. Private corporations, on the other hand, may adhere to distinct regulatory frameworks and disclosure obligations, which could result in difficulties in achieving openness and facing public scrutiny which hinders the timely progress of work. It is imperative for governments to establish strong systems for monitoring and regulating private sector participation to ensure accountability, safeguard sensitive information, and preserve public confidence in the operations of these entities.

An important issue of privatization in sensitive government sectors, such as defence and intelligence, is the potential hazards to national security. Private enterprises may possess distinct interests and objectives compared to governmental organizations, which could potentially result in conflicts of interest or compromises in security standards. Concerns arise around the safeguarding of confidential information, the possibility of espionage or data breaches, and the dependence on private contractors for essential services. To properly secure national interests, governments must implement rigorous security measures, conduct thorough background checks, and establish contractual safeguards to limit these risks. Governments may optimize the advantages of private sector participation and minimize potential dangers while effectively protecting national interests by enacting strong regulatory frameworks, supervision systems, and risk management measures.

1.12. Statement of Problem

The Private businesses are going worldwide because of independent policies implementation for want of business and profit. They are following government regulatory framework.

Because of long history of interplay between public management implementation by bureaucrats and decentralisation, the sensitive and allied government organizations have exhibited very little effect on improvement in terms of output and efficiency despite of no of pay revisions, allowances and facilities. It failed to achieve desired goals set up by the government in the interest of nation.

In order to overcome the long bureaucratic inertia, limited resource allocations and to achieve economic growth, self-sufficiency or Atmanirbhar Bharat, government of India took a decision to implement Privatization (as well as PPP) of government entities including sensitive and allied government organisations with risk transfer.

The risk transfer is legitimised with implementation of privatization at the cost of profit to the private firm considering the overall economic gains.

Public private partnership s have proved beneficial rather than risk transfer due to direct privatization because of close monitoring of governments regulatory framework

Though the corporations and governments are incomparable, the evaluation of strategic implications of privatization on sensitive and allied government organisations is aimed to find out comparative progressive and retrogressive impacts in terms of efficiency, productivity, data security with necessary risk transfer for the national interest.

1.13.   Research Objectives

The research objectives are as follows:

i. To study the comparative progressive and part of retrogressive strategic long-term implications of entry of private services on productivity of sensitive and allied government organizations in India.

ii. To study strategic implications of operational efficiency due to privatization of sensitive and allied government organizations in India

iii. To evaluate overall strategic implications on data confidentiality regarding sensitive information due to entry of private services into sensitive and allied government organizations in India.

iv. To study and evaluate strategic long long-term implications of security risk factor due to privatization of sensitive and allied government organizations in India.

1.14. Research Questions:

1. What are the strategic implications perceived on productivity due to privatization of sensitive and allied government organizations in India?

2. How does the operational efficiency affect due to privatization of sensitive and allied government organizations in India?

3. How does privatization influence the strategic implications on susceptibility of data confidentiality of sensitive and allied government organizations?

4. What measures are to be implemented post-privatization of sensitive and allied government organizations of India to mitigate potential national security risks, and how effective are they in safeguarding sensitive information and assets?

1.15. Hypothesis of Study

The overall evaluation of Positive and negative aspects of the study is aimed to overview the long-term effect on India's sensitive and allied government organization due to entry of private sector firms.

The following hypotheses are framed for the purpose of the study:

H1: The entry of private services has a positive long-term impact on productivity of sensitive and allied government organizations in India.

H2: The entry of private services has a more positive long-term impact if data confidentiality of sensitive and allied government organizations in India is strictly observed within legal institutional framework.

H3: The evaluation of privatization of sensitive and allied government organizations will be resulted into useful findings without compromising national security risk factor in India.

H4: Based on the study by GOI, the entry of private services has beneficial long-term impact on overall operational efficiency of sensitive and allied government organizations in India.

H5: The inversion concept does not assume repercussion of missing middle level management effects on overall functioning of organization.

1.16. Scope of Study

This study is to carry out the evaluation of strategic implications of privatization on sensitive government sectors or firms including negative effects. This statement refers to a wide range of factors that are necessary to comprehend the complexities of privatization specially in government's strategic areas that are highly significant for security and integrity of the nation. Firstly, the study focuses on areas that are considered sensitive, such as defence, space, intelligence, law enforcement, and national security. These sectors play a crucial role in protecting national interests and frequently involve the management of confidential information, strategic assets, and key services that are vital for maintaining social stability and security.

This study takes a longitudinal method to examine the long-term effects of private sector involvement over an extended period. The study aims to analyse the cumulative strategic impact of privatization initiatives on the operation of government institutions, service delivery systems, and larger societal results over a lengthy period, which could span several years or even decades. The use of this temporal perspective enables a detailed comprehension of how the dynamics of privatization change over time and the resulting effects on organizational resilience, efficiency, and accountability.

The study will primarily focus on individual countries or regions where privatization moves in sensitive government sectors have been prominent, although it may also consider worldwide cases and do comparative analysis. The regional specificity of this study ensures that it is directly applicable to the research goals and allows for a thorough examination of the contextual factors that influence the dynamics of privatization. In addition, the study investigates the organizational viewpoint by analysing governance structures, operational procedures, decision-making mechanisms, and performance measures inside sensitive government entities. The study will also try to uncover potential negative effects or unforeseen consequences that may occur from private sector participation by closely examining its influence on these elements.

The study seeks to combine academic research with practical policy considerations to provide information for decision-making processes, regulatory frameworks, and governance mechanisms. Its goal is to optimize outcomes and reduce potential risks related to privatization in sensitive government sectors.

The study employs a wide array of research methods and techniques, encompassing qualitative and quantitative approaches, case studies, interviews, surveys, and archive analysis. The overall Project aimed to comprehensively examine the long term positive and negative strategic effects of private sectors involvement in sensitive government organizations. The finding may be useful for policy makers in the government and private sectors and research academia etc.
The findings will have broad consequences for academic research, policymaking, and public discussions.

1.17. Limitations of Study

The study is limited by many issues that may impede the thorough understanding of the long-term effects of private sector involvement in sensitive government entities. First and foremost, the accessibility of data by third party may be constrained, which can restrict the extent of

study. In addition, it will also investigate factors which may be responsible for debacle of present organizational structure to retain the originality of highly esteemed government organizations who has played pivotal role in shaping the foundation of country. However obtaining comprehensive and accurate data about the operations of these groups, especially over a long period of time, can be difficult, which may limit the scope of the study.

Restriction of Sample size: In addition, the study's sample size may be restricted due to the limited availability of case studies or instances. This constraint may lead to a more limited range of analysis, which could potentially impact the capacity to apply the findings to a broader context.

Bias and subjectivity: Since the privatization of sensitive organization will take place in phased manner the scope of study entails examining the many players including government owned agencies hence the study's conclusions may be influenced by bias and subjectivity, even though measures were made to ensure objectivity. The viewpoints or prejudices of researchers can unintentionally influence the understanding of results, thus compromising the accuracy of the conclusions made.

Capacity of study: The study's capacity to be applied to multiple locations and countries may be limited because of differences in regulatory frameworks, organizational structures, and cultural contexts. The complicated nature of the influence of private sector integration into government organizations poses an additional hurdle, as accurately isolating and assessing individual causal links can be intricate.

Ethical consideration: The study's scope and methods may be limited by ethical considerations, such as the need to maintain data confidentiality and restrict access. This is especially relevant when conducting research on sensitive government institutions.

Lack of knowledge: Furthermore, the continuous process of incorporating commercial services into government institutions may lead to a lack of adequate knowledge among respondents regarding policies, procedures, and methods of privatization. This constraint may hinder the researchers from increasing the sample size sufficiently to effectively minimize sampling error.

The divided information sought through link cannot be viewed and interpreted accurately because of limited information.

1.18. Theoretical Framework

Privatization of sensitive and allied government organizations is strategic in nature which involves the transfer of ownership and control from the public sector to the private sector. This theoretical framework aims to evaluate the strategic impact of privatization through the lens of the inversion concept, which emphasizes the reorganization of management hierarchies and the redistribution of authority, responsibility, reliability, accountability, and rigidity.

1.18.1. Theoretical Perspectives

(a) Neoliberal Economic Theory:

The theory advocates for the transfer of government-owned assets and services to the private sector to promote competition, overall efficiency, and innovation. Unlike government organization. The private companies are expected to lead productivity and operational efficiency through market-driven mechanisms.

(b) Public Administration Theory:

Unlike government organizations private companies are expected to lead productivity through market driven mechanism. Privatization raises questions about the accountability of private entities in managing sensitive government functions and projects. There might be more chances of espionage because of willful financial gain.

(c) Security Studies Theory:

Privatization of sensitive government organizations may have implications for data confidentiality, information security, and the resilience of critical infrastructure against external threats.

1.19. Inversion Concept and Privatization

There are mainly two types of operational structures that exist in companies to organize chain commands used to determine relationships in the workplace. One is horizontal and the other is vertical. Horizontal structures have few managers with many employees. The employees are allowed to make decisions without managers' approval. Vertical type (figure 1.8) management is a pyramid-like structure consists of middle management involved in procurement, marketing, sales, and customer service etc. They have the authority to take important decisions. There are regular employees below the managers. It has complex approval procedure, slow communication to down the lines hence have adverse effect on productivity and work efficiency.

The inversion principle deals with strategy of aversion of dependency on middle level management and top-level management can direct abstract, interface or take an output directly from base source and it is feasible. The decentralisation and delegation of powers at organisation level (like Panchayati raj*) to devolve the functions without compromising the main objectives will help to have direct participation of grass root level employees into top management to help in decision making. The top management can decide major decisions together and concrete implementation based on their abstractions. They can also swap dependency depending on their diligent discretion. Middle level workforce including qualified employees can be accommodated elsewhere in the management.

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* Dr. Narendrakumar, 'Panchayat raj: Present and future prospect", kurudhetra,2021
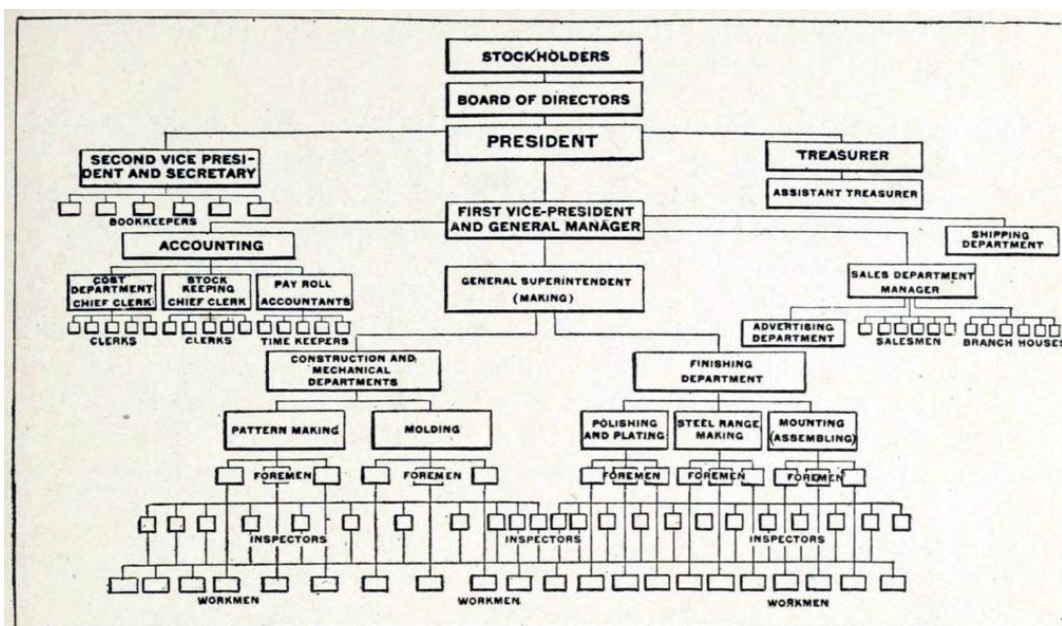
Figure 1.8: Organization Chart of a Large Stove-Manufacturing Company, 1914
(Source:https://courses.lumenlearning.com/wmintrobusiness/chapter/reading-management-theory/)
There may be five major types of dependency inversion

i. Authority
ii. Responsibility
iii. Reliability
iv. Accountability
v. **Rigidity**

1.19.1. Authority Inversion:

- **Decoupling Middle Management:** Privatization may lead to the reorganization of management structures, reducing dependency on middle-level management. Lower-level management can be empowered through rigorous training to become more competent and authoritative, allowing for direct communication and decision-making between top management and the base level.

1.19.2. Responsibility Inversion:

- Since there is trust deficit between high and middle level management there is need to avert the responsibility to low level management by giving "delegation of power" under continuous watch and monitoring.
- **Delegation of Power:** Privatization can address trust deficits between high and middle-level management by delegating responsibility to lower-level management.

1.19.3 Reliability Inversion:

- **Trust Deficit Mitigation:** Through privatization, reliability on middle management can be reversed by ensuring direct communication of ground conditions to top management. Lower-level employees become more reliable and trustworthy contributors to organizational success, facilitating informed decision-making at higher levels.

1.19.3. Accountability Inversion:

- **Shared Accountability:** Privatization enables lower management to directly share accountability for their work with the organization, fostering a culture of responsibility and ownership throughout the hierarchy. This shift in accountability mechanisms enhances transparency and performance evaluation.

1.19.4. Rigidity Inversion:

- **Flexibility and Adaptability:** Privatization emphasizes the importance of grass-root level feedback and encourages top-level management to be flexible in reshuffling the entire organizational structure for improvement. By removing dependence on middle management and implementing strict measures, the organization becomes more amenable, adaptable, and reliable.

1.20. Assumptions and Implementation Considerations

- **Trust Deficit:** Acknowledging trust deficits between top and middle-level management as a catalyst for restructuring through privatization.

- **Competency-Based Selection:** Privatization assumes the selection of lower-level management based on competency in respective areas, ensuring effectiveness in decision-making and task execution.

- **Empowerment and Recognition:** Recognition of the importance of empowering lower management through training and incentivizing performance to enhance organizational effectiveness.

- **Contextual Variations:** Understanding that the application of the inversion concept may vary based on organizational behavior and context-specific factors.

- **Feedback and Evidence-Based Action**: Emphasizing the importance of concrete feedback and evidence provided by low-level management to guide decision-making processes.

This theoretical framework integrates the inversion concept with the evaluation of privatization's impact on sensitive and allied government organizations. By redefining management structures and redistributing authority and responsibility, privatization aims to enhance efficiency, accountability, and adaptability within these organizations, ultimately contributing to their overall effectiveness and performance.

1.21. Chapter Scheme

Chapter 1: Introduction: This chapter offers a comprehensive comprehension of a topic and its origins, including a historical viewpoint. This chapter highlights the involvement of private services in sensitive and associated government institutions, specifically emphasizing the negative long-term effects on the functioning of these government agencies.

Chapter 2: Review of Literature: This chapter provides a comprehensive literature analysis that explores the concept of privatization in relation to sensitive and affiliated government agencies. The chapter examines various sectors of sensitive and affiliated government entities and their operations. The study will investigate theories of privatization, as well as their

application and general models, to achieve the research objectives. This text will provide a detailed analysis of the global trend of private companies into sensitive and linked government agencies, with a particular emphasis on India. The chapter effectively presents the concepts and principles relevant to the investigation being conducted.

Chapter 3: Research Methodology: This chapter provides a comprehensive overview of the research methodology used in the entire research project. It includes the rationale for the study, the extent of the investigation, the methodology employed, the instruments used, the method of data collection, the sampling technique, the size of the sample, and the selection of stakeholders. The chapter also emphasizes the practical implementation of the research, specifically with the chosen research design.

Chapter 4: Results and Discussion: This chapter presents the data interpretation and analysis of the research conducted, which is based on the recognized problem, stated objectives, and tested hypothesis. The exploratory study is conducted using a series of closed-ended questions that are categorized into several sections. The purpose is to analyse the skills, usage, and attitude gap among the participants in the sample group.

Chapter 5: Summary and Conclusion: This chapter centres on the endeavours to contribute a fresh addition to the existing body of knowledge while fulfilling the study's aims. This chapter presents the discoveries, provides recommendations, and closes the development of the thesis.

CHAPTER II

REVIEW OF LITERATURE

2.1   Introduction

The integration of private sector services into government operations has become a focal point of discussion and analysis globally. This literature review endeavours to offer a comprehensive examination of the overarching themes surrounding this intricate process. It traces the historical trajectory of private sector involvement in government sectors, charting the evolution of privatization and collaboration models on a global scale. Moreover, it scrutinizes the productivity ramifications of such partnerships, delving into studies that dissect factors such as workforce dynamics, technology uptake, and shifts in organizational ethos. Furthermore, the review delves into the critical concern of data confidentiality within government-private collaborations, synthesizing literature on data security challenges, breaches, and the legal and regulatory frameworks underpinning data protection. Additionally, it addresses the national security risks associated with private sector integration, including vulnerabilities like cyber threats and insider risks, while examining comparative studies of various engagement models. Lastly, the review investigates operational efficiency in government-private collaborations, analysing metrics, case studies, and management strategies aimed at optimizing efficiency while integrating private services. Through this comprehensive review, we endeavour to provide insights into the multifaceted dynamics of government-private partnerships and their implications for public administration and policy.

2.1.1   Productivity Impacts: Private-Public Partnership Collaboration

The integration of private service providers into governmental operations has sparked significant interest due to its potential impact on productivity. The literature has analysed the multifaceted effects of private service entry on productivity within government agencies.

A study by (Arnold et al., 2006) investigates the correlation between changes in the services sector and the productivity of manufacturing industries that depend on services inputs. Using firm-level data from the Czech Republic between 1998 and 2003, the findings indicate that there is a favourable correlation between the reform of the services sector and the success of domestic enterprises in downstream manufacturing sectors. When analysing various factors related to the liberalization of services, such as the participation of foreign providers, privatization, and the level of competition, it becomes evident that permitting foreign entry into service industries is a crucial mechanism through which services liberalization enhances the performance of downstream manufacturing sectors. Given that the main obstacles to foreign
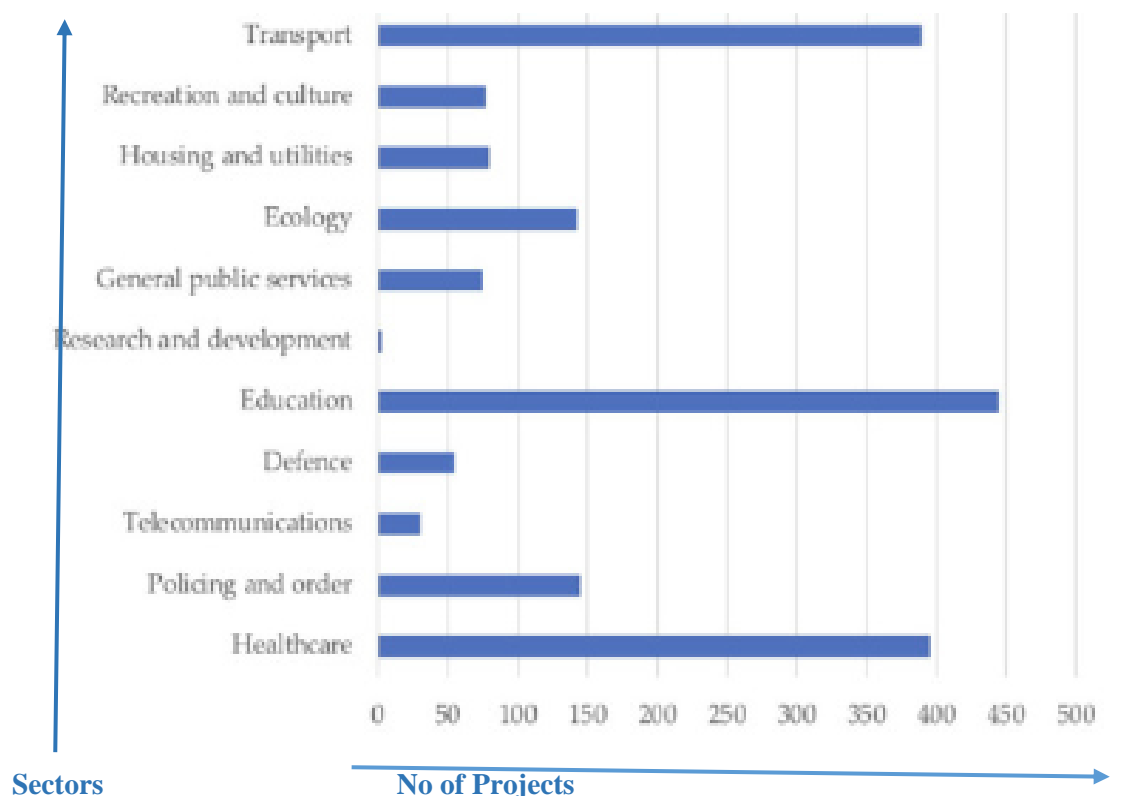
Figure 2.1: Private-Public Partnership-no of PPP projects in Europe at the end of 2018 by various sectors *(Source: https://doi.org/10.3390/economies9040147)*

investment now lie in the services sectors rather than in commodities, our findings could potentially bolster the case for implementing reforms in this domain. In European countries, PPP has become ever improving system including defence (Pukova M, 2021). (Figure 2.1). PPP projects under different of sectors   by the end of 2018.Hence there is a need to evaluate the historical perspective of PPP collaboration to understand its current collaboration in sensitive and allied government organisations.
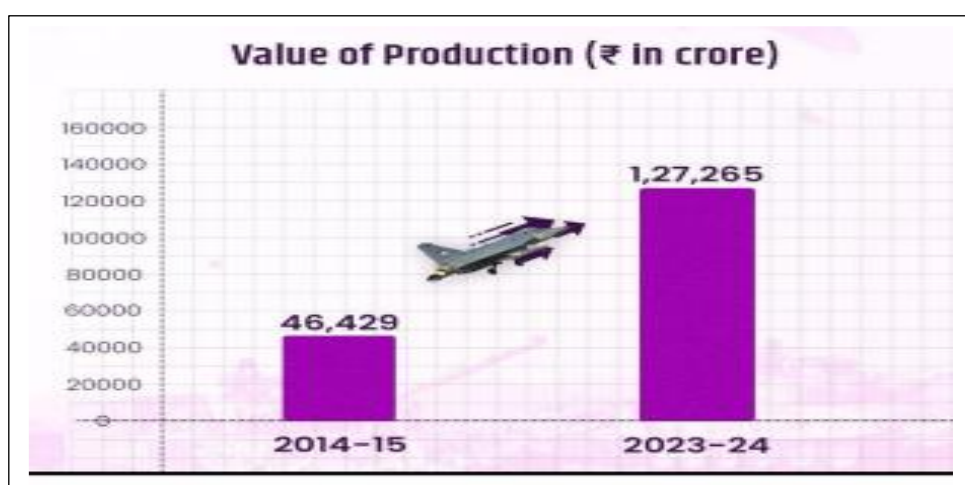
Figure 2.2: India defence Production growth chart from 2014-2015 to 2023-2024 *(Source:https://pib.gov.in/FactsheetDetails.aspx?Id=149099&reg=3&lang=1)*

2.1.2 Historical perspectives on the involvement of private services in government sectors worldwide

According to Howen the economic landscape in Europe and North America witnessed a significant shift towards private ownership of production and distribution means since the Industrial Revolution. However, the exigencies of the Second World War (WWII) and the subsequent reconstruction period from 1945 to 1955 altered this trajectory. Wartime economies in Europe necessitated the socialization of resources and production, leading to widespread nationalization and state regulation in the post-war era. Austerity measures, including rationing and price regulation, became commonplace norms in countries like Great Britain, France, Italy, and Belgium. Major industries and resources were brought under public ownership or management to facilitate planned economic reconstruction. This era saw the transformation of industrial outfits into public boards and corporations, such as the National Coal Board and the British Transport Commission in Britain. In France, sectors like coal, steel, power, transport, and agriculture were placed under the Monnet Plan for Modernization and Equipment. Post-reconstruction, European industrial policy evolved through phases, with the 1960s to 1979 witnessing attempts to create national champions in essential industries, particularly in high-technology sectors (Owen, 2012). However, these efforts often proved unsuccessful due to overestimation of market failures and underestimation of government failures. By the 1980s, influenced by neoliberal ideology championed by figures like Margaret Thatcher, European countries shifted towards horizontal, non-selective policies aimed at improving the business environment for all firms (Harvey, 2005). This era, characterized by deregulation, privatization, and reduced state intervention, marked a significant departure from the post-war economic paradigm.

The evolution of private sector collaboration in Europe can be traced back to pivotal moments in history, with notable shifts towards divestment and partnership initiatives. In 1957, the Federal Republic of Germany set a precedent by divesting its majority shares in Volkswagen to private investors (Filipovic, 2005). However, it was the Thatcher administration's privatization of British Telecoms in 1984 that catalysed a wave of divestments across Europe, including British rail, British airways, and other public corporations (Bishop and Kay, 1994). This momentum continued under the administration of Jacques Chirac in France, marked by privatizations of public banks and telecoms companies. These initiatives were driven by fiscal pressures and product market reforms, spurred by the imperative to join the European Union (Bortolotti and Milella, 2006).

 Western Europe emerged as a global leader in privatization efforts, with ambitious programs yielding significant revenues. Italy, for instance, embarked on de-nationalization efforts, including the partial sales of major public corporations like Alitalia, under the Institutor per la Ricostruzione Industriale (Bortolotti and Milella, 2006). Portugal, Spain, the Netherlands, and Sweden followed suit, reporting their first large-scale sales by 1993. Belgium, Greece, and Ireland joined the privatization drive within the same decade (Bortolotti and Milella, 2006). This historical context underscores the strategic imperatives driving governments to seek private sector collaboration. The need to address fiscal deficits, introduce market reforms, and

enhance efficiency in governance structures has propelled the adoption of collaborative models. Moreover, the introduction of private sector collaboration has not been confined to traditional sectors; it has also extended to domains like space, technology, and defence. In developed countries, these collaborations have facilitated innovation, technology transfer, and knowledge sharing. Conversely, in developing countries, collaboration with private organizations aims to address structural and functioning issues within government sectors, seeking efficiency gains through effective partnerships. Research by Bortolotti and Milella (2006) provides valuable insights into the global trends and dynamics shaping the landscape of private sector collaboration and privatization initiatives in Europe.

2.1.3 Productivity effects of privatization or collaboration with private entities in sensitive government organizations

Studies examining the productivity effects of privatization or collaboration with private entities in sensitive government organizations offer critical insights into the complexities and implications of such endeavours. (Brown et al., 2004) conducted a comprehensive analysis using long panel data across four economies, revealing varied impacts of privatization on multifactor productivity. While Hong et al., (2016) focused on Korean privatization and found influences on productivity and efficiency, (Snyder et al., 2001) delved into the Department of Defence's privatization competitions, estimating substantial potential savings. These studies highlight the multifaceted nature of privatization's effects on productivity, influenced by factors like industry dynamics and government policies.

Innovation and technology acceleration in government agencies also play a pivotal role. Roberts (2022) examined innovation initiatives, emphasizing the need for effective metrics and organizational collaboration. Maraš et al., (2022) explored cooperation between government agencies and private companies in space, stressing cost-effectiveness as a key outcome. Samson (2022) added a cautionary note, discussing potential instability arising from private sector dominance in space and its implications for national security. These studies underscore the importance of strategic alignment and governance frameworks in maximizing the productivity benefits of public-private collaborations.

Moreover, defence-related research and development (R&D) have significant implications for productivity and international spillovers. Moretti et al., (2019) found positive impacts of defence R&D funding on productivity growth and international knowledge diffusion. Wells et al., (2012) and Godinho et al., (2020) examined challenges and frameworks for public-private cooperation in defence organizations, highlighting the need for effective management control systems and strategic partnerships. These findings emphasize the critical role of innovation and collaboration in enhancing productivity within sensitive government sectors.

2.1.4 Analysis of factors influencing productivity changes with public –private collaborations

Research Snyder & Author, (2001) suggests that organizational culture shifts play a critical role in shaping productivity changes during privatization or collaboration initiatives. The alignment of organizational values, norms, and communication styles between government agencies and private companies is essential for fostering collaboration and synergy. However, cultural

barriers, resistance to change, and divergent priorities may hinder productivity improvements and undermine the success of partnership endeavours.

Parker (2014) concluded that for privatization to be effective, it requires a competitive and regulated environment. This was exemplified by the history of the United Kingdom. It is essential to prevent the state monopolies from transforming into private sector monopolies, as this would pose significant problems.

According to research by Hong and Yi (2016), the analysis of factors influencing productivity changes within government organizations undergoing privatization or collaboration with the private sector reveals a complex interplay of workforce dynamics, technology adoption, and organizational culture shifts. Workforce dynamics, such as changes in staffing levels, skill sets, and organizational structure, are identified as crucial determinants of productivity.

Furthermore, a study by Roberts (2022) indicates that technology adoption emerges as a significant driver of productivity changes in government-private collaborations. Integrating advanced technologies such as artificial intelligence, data analytics, and cloud computing can streamline operations, automate tasks, and enhance decision-making processes. However, the successful adoption of technology requires investment in infrastructure, training programs, and change management initiatives. Therefore, fostering a culture of innovation, transparency, and collaboration is imperative for driving productivity gains and achieving shared objectives.

2.1.5 Data Confidentiality in Government-Private Collaborations

In the realm of government-private collaborations, ensuring data confidentiality is paramount. As governmental agencies increasingly partner with private entities, safeguarding sensitive information becomes crucial. This necessitates clear contractual agreements and robust security protocols to mitigate risks. Understanding the current practices and identifying gaps in data protection is essential for enhancing confidentiality in these collaborations.

The importance of data confidentiality in government-private collaborations is underscored by historical and contemporary perspectives. Robertson (1978) defends the necessity of confidentiality in government, particularly post-Watergate, highlighting the public interest while emphasizing its role in maintaining trust. Santacesaria (2001) proposes methods to assure data confidentiality during transmission between terminals, a crucial aspect in collaborative environments. Building on this, Cox et al., (2013) delve into the ethical challenges inherent in government-industry data sharing collaborations, emphasizing the need for robust data management and adherence to privacy laws. Korba et al., (2008) contribute by focusing on the discovery of private data in collaborative settings, essential for ensuring confidentiality. Verma (2018) further elaborates on the need for data protection in government contracts, especially during outsourcing, highlighting the risks associated with sharing sensitive data with private contractors. Nugraha et al., (2022) shed light on the evolving understanding of government data confidentiality requirements in service level agreements (SLAs), emphasizing the importance of integrating these needs into security-related SLAs. These insights are complemented by Li, W. et al., (2020), who discuss the practice of sharing redacted data with third parties, showcasing strategies for maintaining confidentiality while facilitating data exchange. Moreover, the proposals by Susha et al., (2019) for data collaboration mechanisms and the privacy protection approaches suggested by Piao (2021) further strengthen the foundation for

secure government-private collaborations. Together, these studies provide a comprehensive framework for understanding and implementing data confidentiality measures in government-private collaborations, emphasizing the significance of trust, legal compliance, and technological solutions in safeguarding sensitive information.

Hence, Government-private collaborations necessitate robust measures for ensuring the confidentiality of data. As outsourcing projects become more prevalent, government officials must possess a thorough understanding of data protection laws to safeguard sensitive information shared with private contractors. This alignment not only enhances trust but also mitigates risks inherent in collaborations SLAs should be made mandatory before execution of each project contracts. This is a strategic requirement.

The study conducted by Alford & Greve (2017) elucidates that Strategic concepts and practices originated in the private sector and generated much debate when they transitioned to the public sector starting in the late 1970s. One reason for this was their limited suitability to the unique characteristics of government organizations. These characteristics include their emphasis on both public and private value, their existence within a political rather than a market setting, their reliance on legal authority to accomplish goals, and their frequent need to collaborate with other public sector agencies in managing personnel and resources. The presence of these and other characteristics posed challenges when attempting to implement New Public Management and related frameworks in the context of government strategy principles. Additionally, the traditional emphasis on individual firms in the private sector did not align with the expansion of network governance starting in the 1990s. The authors advocate for an alternative paradigm that primarily relies on the public value framework to incorporate and surpass traditional strategy thinking.

In their study, Wang et al., (2018) elucidated that Public-Private Partnerships (PPPs) have gained widespread popularity as effective means of delivering infrastructure and public services globally. Public-Private Partnerships (PPPs) have garnered significant interest from academic circles as a progressive method of public procurement.

2.1.6 National Security Risks of Private Sector Integration

Scholarly works addressing the intersection of national security and privatization in sensitive sectors provide valuable insights into the dynamics of public-private partnerships (PPPs) and their implications. For instance, "National Security and Infrastructure and Resource Sectors" (2022) highlights the strategic importance of sectors like telecommunications for national security and resource management, emphasizing the role of state control and centralized governance in ensuring security objectives are met. Similarly, "An Exploration of Security Privatisation Dynamics Through the Lens of Social Harm" (2021) delves into the societal harms caused by the privatization of security, critiquing the neoliberal discourse that often overlooks these consequences.

Analysis of vulnerabilities introduced by private sector involvement, such as cyber threats, insider risks, or geopolitical implications, further elucidates the complexities of security privatization. For example, "Security Privatization: How Non-security-related Private Businesses Shape Security Governance" (2017) explores the expanding role of private actors

beyond traditional security companies in performing security functions, shedding light on their impact on security governance. From above analysis it could be constructed that, improving information sharing between the public and private sectors is crucial for enhancing national security. The private sector owns and operates a significant portion of critical infrastructure, making effective partnerships essential. Efforts are underway to establish a networked approach to information sharing, allowing for secure distribution and access across sectors. Mechanisms such as Sector Coordination Councils and Information Sharing and Analysis Centres facilitate collaboration and feedback. Existing successful partnerships, such as the Critical Infrastructure Partnership Advisory Council and InfraGard, serve as models for collaboration.

2.1.7   Operational Efficiency in Government-Private Collaborations

Operational efficiency in government-private collaborations is a critical area of study within the realm of public administration and management. As governments worldwide seek to optimize their operations while addressing complex challenges, collaboration with the private sector has emerged as a prominent strategy. This collaboration involves various forms, including public-private partnerships (PPPs), outsourcing, and joint ventures, aiming to leverage the strengths of both sectors to achieve common goals.

The concept of operational efficiency in government-private collaborations encompasses the effective allocation and utilization of resources, streamlined processes, and the achievement of desired outcomes at minimal cost. It involves enhancing the performance of joint initiatives through improved coordination, innovation, and the application of best practices from both the public and private sectors**.**

Gakhar and Phukon (2018**)** found that around 61 percent of studies indicate that privatization has positive impacts on performance, specifically in terms of operational efficiency, cost and pricing efficiency, access to market-based financing, transparency and effective governance, productivity, and profitability. They proceeded to gather a substantial amount of study information to support the assertion that privately owned businesses are more effective and generate more profitable income compared to their counterpart government-run ones.

This study by Hatoum, 2019 examines the impact of financing options on Small and Medium Enterprises (SMEs) in Bahrain. Small and medium-sized enterprises (SMEs) have a significant impact on the private sector, particularly in developing economies. Nevertheless, the presence of unequal access to information between lenders and entrepreneurs gives rise to the concern regarding the varied financial consequences on the post-entry performance of Small and Medium Enterprises. Researchers have contended that the conclusions derived from studies carried out on markets in Western settings face difficulties when applied to non-Western settings. Although there have been many studies on how financing structures impact firm performance in developed markets, there is a lack of research on the effects of financing choices on firms in non-Western environments.

Individuals who believe that privatization enhances the efficiency of enterprises and hence improves their overall performance. Several researchers, such as Djankov and Murrell (2012), Megginson et al., (2014), McKenzie and Mookherjee (2014), Kumar (2014), Ojonugwa and

Lrunmoluo (2015), Wolf and Pollitt (2018), Pratap (2021) have found that the performance of government organizations that have undergone privatization has improved significantly. Their contention is that privatization facilitates enhanced performance of firms by liberating them from political interference and enabling them to concentrate on the economic objective of maximizing returns on their investment, rather than being preoccupied with political considerations. Rastogi and Shukla (2013), Potter (2015), Khurud and Abhang (2016), Jain (2021), and Megginson and Netter (2021) are researchers who have found that privatisation does not affect business performance. They believe that the performance of an organizational firm may or may not improve because of privatisation. They believe that while privatization can potentially enhance efficiency and produce a more streamlined working environment, it also poses the risk of evolving into a private monopoly, which is a more dangerous form of monopoly compared to a public one.

Scholars such as Sathye (2015), Nagaraj (2016), Bortolotti and Milella (2016), Poczter (2016), Paterson et al., (2017), and Etrogiovanna (2020) firmly hold the belief that privatization does not have a significant impact on the performance of government institutions. According to their statement, the primary challenge in the government sector is not a lack of effectiveness, but rather difficulties with pricing and the collection of user charges. They believe that unless these issues are properly tackled, it is unlikely that the performance of the public sector would improve. However, Megginson WL. (2005) explained that on overall assessment of privatization of state-owned enterprises has positive effect on efficiency and discipline. The depiction of same is given in figure 2.3
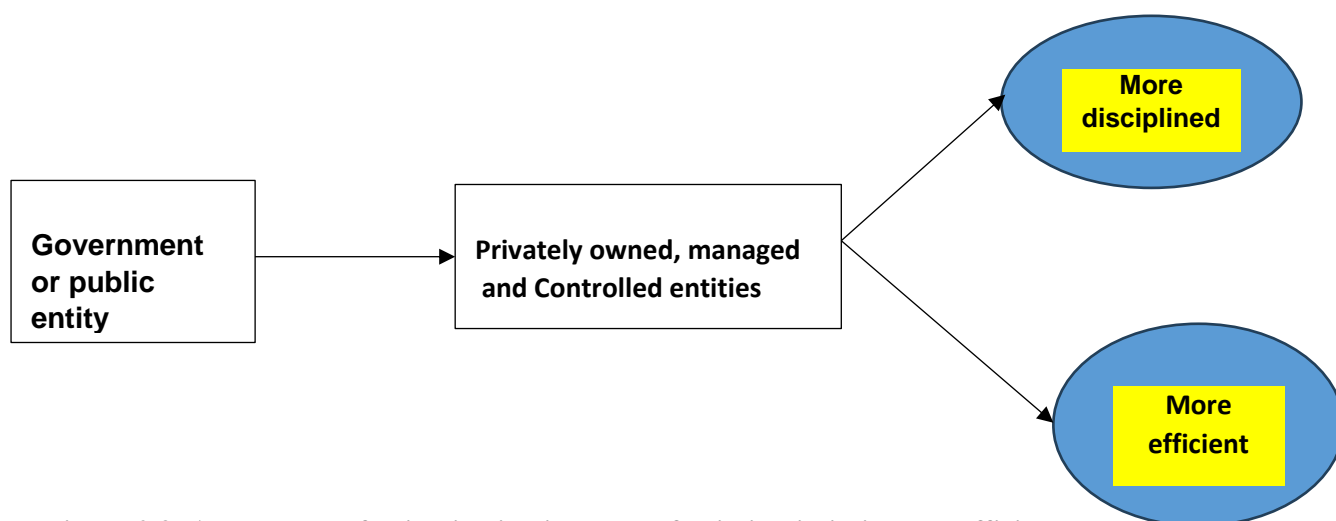
Figure 2.3: Advantages of privatization in terms of gain in discipline and efficiency
(Source: https://www.wallstreetmojo.com/privatization/)

The researchers examined responsibility in the introduction of commercial services from two unique angles in order to gain a more comprehensive understanding of the concept. Firstly, this issue relates to the broader debate surrounding alternate forms of administration, such as the public-private partnership, which are viewed as attempts to avoid accountability to the parliament and other important governmental institutions (Hodge & Coghill, 2017). It has been suggested that creating a complex accountability model to enhance transparency could enhance

the potential benefits of privatization and public-private partnerships. Hodge and Coghill (2017) devised a pyramidal model of accountability that visually represents the various levels of responsibility required for complex setups. Additionally, questions about accountability arise due to the understanding that numerous players are actively pursuing diverse objectives and opinions (Ruuska and Teigland. 2019). The complexity and difficulty of public-private partnership arrangements need the establishment of new accountability systems (Becker, 2012). The increasing focus on accountability aligns with the concern expressed by numerous scholars to hold governments accountable to the institutions that represent the people (Hayllar, 2020). Academics have used various institutional techniques and elements to evaluate the effectiveness of public-private partnerships. These include trust, government efficacy, regulation efficiency, fair depiction of the masses, disclosure, citizen awareness, capacity enhancement, and systemic, comprehensive thinking.

2.1.8   Integration of Public and private services- management strategies

Efficient integration of private services within sensitive and allied government organizations necessitates a strategic approach to organizational change and management, addressing complex dynamics between public and private sectors to maximize operational effectiveness while safeguarding public interests and maintaining regulatory compliance

Claudia Curi et al., 2025 during studies in strategic economy, found gap and fill it with the help of bibliometric analysis of the literature on government enterprises over the period of 1994–2024 .He has taken the extensive help of top-rated journals. The analysis suggests that future research should explore the integration of sustainability into State Owned Enterprises(SOE) governance frameworks. However corporate finance strategies have been adopted into the government from private industries.

The role of the public sector has changed from being a service provider to being a collaborator in the production of services, which reflects the broader change in its job (Bovaird et al., 2016). This significant transformation has been effectively demonstrated by the concept of private-public partnerships.

The study conducted by Schoute et al., (2018) examines the impact of service, political, governance, and financial characteristics on the choices made by municipalities in the Dutch local government regarding four service delivery modes: in-house, inter-municipal cooperation, municipality-owned firm, and private firm.

The effectiveness and productivity of PPP: The current focus on the effectiveness and productivity of private-public collaborations has increased due to the growing prevalence of private services globally (Torchia et al., 2015). Although there has been increased attention on the performance of public-private partnerships, the effectiveness of these collaborations is still a relatively less focused area of research. This is because public-private partnerships have existed for a significant duration of time. Researchers hold diverse ideas and perspectives on the effectiveness of privatization in sensitive areas. For instance, Widdus (2021) expressed substantial concerns on the feasibility of such partnerships in any circumstances, especially regarding their strategic impact on security and confidentiality. Jamali (2004) suggests that to safeguard public interests through public-private collaborations, the government should assume a more prominent role. Accountability, transparency, contract management, and safeguarding

the interests of all stakeholders are crucial for the success of public-private partnerships (Blanken & Dewulf, 2010; Singh & Prakash, 2010). There is limited high-quality research available on the effectiveness and impact of public-private partnerships, however some evidence suggests that they may improve efficiency (Hodge & Greve, 2019; Teicher, et al., 2016).

Strategic effect of digital platform: Digital platforms have caused significant disruption in various sectors, while their impact on highly regulated businesses has not been readily apparent. This research by Ozalp et al., 2022 examines the strategic entry of major technology companies into the healthcare and education sectors, focusing on how these platforms have successfully and methodically entered industries that are subject to strict regulations. The paper introduces a model of platform access consisting of four stages, referred to as "digital colonization." This includes offering data infrastructure services to established companies subject to regulations, collecting data in a heavily regulated business, providing insights based on data analysis, and creating and marketing new products and services.

Efficiency of management procedure: As per Izueke et al., (2020), the optimization of management procedure is required to enhance the procedural efficiency.
Furthermore, Abbasi et al., (2016) introduce an operational performance evaluation framework applicable to industries, including the cement sector in Iran. This framework aids in ranking organizations based on operational effectiveness, providing valuable insights for managers to assess strategies and enhance competitiveness.
Hence it could be constructed that, Research on operational efficiency metrics and frameworks relevant to government organizations is a critical area of study aimed at improving the performance and effectiveness of public sector entities.

2.1.9   DARPA Model and its usefulness in Indian Context

DARPA is an independent private agency of USA (DoD) responsible for the development of military technologies, directed energy program, IT, tactical techniques, AI, Chemistry, Physics, engineering social science, neurosciences and involved in military missions. DARPA operates in academia, industries and government owned laboratories. Director DARPA report to services hence has direct exposure to field emerging technologies. India's R&D is devoid of the Services and burdened with increased bureaucracy, time and cost overrun projects which leads to their foreclosure. Unlike sensitive and allied government organization in India, DARPA work on frontier technologies, define goals for finite duration, promote lasting revolutionary changes, and exhibits high degree of measurable accountability. It is independent of government R&D organization and directly reports to the defense secretary of DoD. They hire quality intellect task oriented people in business having core competence (Bikramdeep Singh, 2014). Unless the technology firms are exposed to international competitiveness there is no impetus for future innovation and growth. India has lesser known potential lies in automobile and allied industrial sectors which needs to be properly identified, extracted/tapped to convert into military technologies. (Yerger R.H., 2024) Empirical Analysis shows distinct advantages over other government R & D organization due to mission oriented approach shows overall increase in productivity. There are certain fault lines in sensitive and allied government

organizations beyond management control which are required to be viewed seriously hence privatization is imminent.

2.1.10 Privatization: The Evaluation of long-term strategic implications on operation of sensitive and allied government organizations

The activities of sensitive and linked government agencies have been significantly affected in the long term by private services, such as security and other functions. Private security firms, which can include both unarmed guards and combat-capable squads, serve as force multipliers in strengthening security (Turbiville, 2007). Director General Resettlement (DGR) assist to train ex-servicemen to acquire additional skills development to maintain youthful profile to meet existing need, challenges of corporate, industry and sensitive government organizations[+].

The implementation of disintermediation and re-intermediation tactics within government multi-channel management systems has demonstrated that intermediaries, regardless of whether they are public or private, may enhance the delivery of customer-oriented services (Klievink & Janssen, 2008).

Governments have progressively employed private military and security businesses to accomplish defence and foreign-policy goals, either to save expenses or enhance combat capabilities (Liivoja, 2012). In addition, there have been collaborations between private and public organizations to offer commercial services within government boundaries (Nikolova, 2015).

In his paper, Sandoval-Ballesteros, 2013 challenges us to fundamentally reconsider the notion of responsibility and to develop innovative approaches to combat corruption. This text examines and evaluates the inherent biases found in prevailing approaches to the study of corruption, namely those related to the public sector and modernization.

As mentioned in Harvard business review (2019), The discourse on privatization is marked by contention, as critics question whether private ownership consistently leads to improved efficiency. They argue that profit-oriented private sector managers may prioritize financial gains over serving the public, potentially leading to essential services becoming unaffordable or inaccessible. Moreover, such endeavours might require subsequent government intervention, yielding few desirable outcomes than direct government provision

Strategic key parameters for protection of sensitive government organizations for long term

 i. Restricted access control to authorised personnel to access sensitive data

ii. Data encryption: for stored data under transmission.

iii. Employees training for security awareness: Through phishing simulators and security policies

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[+] https://dgrindia.gov.in/Content2/about-us/about-dgr

iv. Network security: By updating of VPN and IDS/IPS.

v. Continuous monitoring of security issues on half day basis.

vi. Slipper cell: To establish internal slipper cell to give secret input to the Director of establishment.

vii. Security culture: To foster and implement security culture to all levels of employees.

viii. Strict penal action: Immediate penal action, if found guilty.
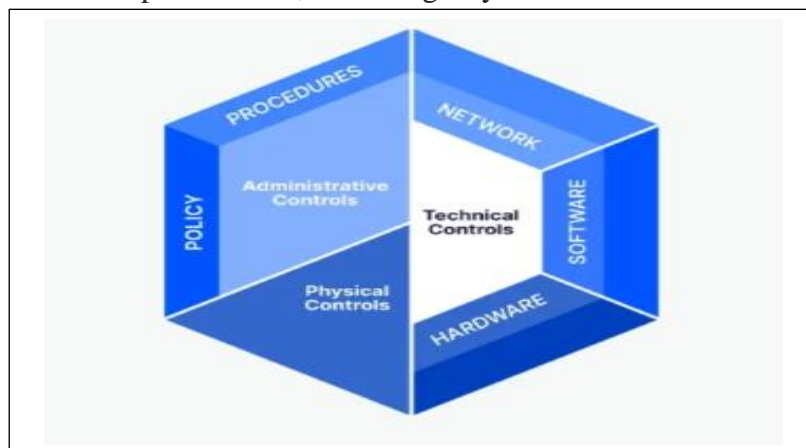
Figure 2.4   : Elements of defence security shield
(*Source: https://sectona.com/technology/what-is-defence-in-depth-security/*)

Traditional security measures explained above may not protect government sensitive organisations and related corporates hence change and proactive approaches are necessary to tackle potential diverse risks Defence in depth is designed to protect vital assets with multiple fronts. One of such measures i.e., strategic elements in depth is shown in Figure 2. which consists of three major strategic controls such as administrative, physical and technical to tackle the threats with multiple defensive layers[++].

In sensitive sectors like defence and space, where national security is paramount, the debate takes on added significance. Here, the government must balance the imperative of efficiency with the need to maintain control and oversight to safeguard national interests. Privatization initiatives in such sectors must ensure that private managers remain accountable to the public interest, with appropriate safeguards to prevent any compromise of national security.

Ultimately, the effectiveness of privatization hinges on managerial accountability and alignment with the public interest, rather than ownership structure alone. Evaluating strategic implications due to privatization initiatives against standards of good management is essential, particularly in sensitive sectors where national security considerations are paramount.

Therefore, the long-term strategic impact of private and public partnerships in developing countries is intricately tied to the fundamental reasons for which these collaborations are formed. In many developing nations, such collaborations are sought to address structural limitations and resource constraints, aiming to enhance efficiency and resource availability.

[++]/https://sectona.com/technology/what-is-defence-in-depth-security

Governments often engage with private entities to leverage their expertise, technology, and investment capacity to overcome infrastructural challenges and promote economic development.

However, the profit motive inherent in private companies can pose risks to government institutions, particularly in sensitive and critical service sectors. While private sector involvement may bring efficiency gains and innovative solutions, concerns arise regarding the potential erosion of governmental sovereignty and the prioritization of profit over public interest.

Understanding the long-term impact of these partnerships is essential, as they can significantly influence the structural framework and functioning of government institutions. Research in this area is crucial for assessing the effectiveness and sustainability of collaborative efforts and identifying potential risks and benefits associated with private sector involvement.

Addressing the research gap in this field requires comprehensive studies that analyse the multifaceted impacts of public-private partnerships on governance structures, service delivery mechanisms, and overall development outcomes.

2.2 Research Gaps Identified

a) **Fragmented Literature on Privatization**: Currently available research on the long-term repercussions of commercial service providers accessing sensitive government institutions and related organizations is characterized by fragmentation. This is the case because of the nature of the research. Most of the research that has been done on privatization in government institutions has focused on instances, non-sensitive government organisations, specialized industries, or individual countries. The fragmented approach to researching privatization across many industries and businesses, particularly from the point of view of India, makes it difficult to gain a comprehensive understanding of the long-term effects and overall risk factors that are involved specially related to highly sensitive government and including associated corporates.

b) **Limited Comprehensive Analysis:** There is a tendency for contemporary studies to present restricted viewpoints on privatization, focusing on individual characteristics or potential risks without providing a thorough understanding of the long-term repercussions of this practice. Because of its narrow perspective, this worldview fails to appreciate the complex effects of privatization and acknowledge the interconnection of many different aspects stated in research objectives for sensitive, related government organisations and corporates involved in. There is no known records of cumulated research given in research objectives because of complexity. To fill this gap, the subsequent research should incorporate a variety of viewpoints from employees of government organizations, professionals in privatization policy, and other relevant stakeholders. This will help to build a more comprehensive understanding of the implications of privatization.

c) **Lack of Research in the Indian Context:** There is a glaring lack of research that specifically investigates the consequences of privatization in the context of India, particularly regarding government enterprises that are sensitive and interlinked. There are studies that have been conducted on the experiences of privatization in other countries; however, there is a shortage of research that especially focuses on the unique challenges and opportunities that government institutions in India face. It is very necessary, to successfully inform policy and decision-making, to carry out research that is specifically geared to address the distinct socio-economic, geopolitical setting and governance systems of India.

d) **Neglect of Stakeholder Perspectives:** Previous research frequently fails to take into account the viewpoints and expertise of key stakeholders, such as government officials and specialists in privatization strategies. The thoughts and experiences that these stakeholders have gained from direct experience are extremely relevant and can make a significant contribution to the overall comprehension of the long-term impacts of privatization. It is possible to develop meaningful connections with stakeholders using qualitative research methodologies such as interviews and focus groups. This can result in useful insights into the obstacles and potential associated with privatization in government enterprises.

e) **Absence of Unified Theoretical Frameworks:** There is a significant absence of coherent theoretical frameworks that guide the investigation of privatization in sensitive and connected government institutions, even though there are a great number of empirical research that are available. To provide substantial insights that can be used to drive future policy and decision-making, it is essential to develop comprehensive models that contain many risk variables and long-term ramifications. By concentrating on these areas of inadequacy, future research has the potential to enhance our understanding of the long-term effects that privatization has on sensitive government enterprises.

Hence, the study has uncovered significant deficiencies in comprehending the enduring consequences of privatization in vulnerable government organizations. The lack of cohesive literature and thorough analysis restricts a comprehensive knowledge of the wide-ranging effects of privatization, especially in the Indian context. Research that encompasses multiple opinions, examines India's specific socio-economic setting, and includes stakeholder perspectives is necessary. Furthermore, the lack of cohesive theoretical frameworks highlights the necessity for inclusive models to direct future policy and decision-making. By addressing these gaps, we may improve our comprehension of the consequences of privatization and develop measures to minimize risks and maximize advantages in government-owned businesses.

2.3 Conclusion

Ultimately, the literature review chapter offers a thorough summary of current studies on the positive as well as retrogressive long-term effects of introducing private services into vulnerable sensitive and related government agencies. By combining many viewpoints and empirical data, some significant conclusions arise. Primarily, the existing literature on privatization is substantial but lacks cohesion, since it primarily examines isolated occurrences, particular industries, or individual nations. This fragmentation hinders our comprehension of the wider ramifications of privatization in various circumstances or governing parameters stated in research objectives. Furthermore, current research frequently offers restricted viewpoints on privatization, disregarding the interrelatedness of many aspects and failing to fully grasp the subtle ramifications. Furthermore, it is worth noting that there is a significant lack of research that particularly investigates the consequences of privatization in the Indian context. This emphasizes the necessity for studies that are tailored to the specific circumstances of India. In addition, prior research has frequently neglected the viewpoints of crucial stakeholders, such as government personnel and experts in privatization policy especially vulnerable government organisations wherein high interest of nation such as security, integrity cannot be compromised. Utilizing qualitative research methodologies to interact with these stakeholders might yield significant insights. There is currently a shortage of comprehensive theoretical frameworks that provide guidance for analysing the privatization of sensitive and allied government agencies. It is crucial to create thorough models that incorporate different risk variables and long-term effects to provide valuable information for future policy and decision-making by the government and allied organisations. Addressing these gaps would enhance our understanding of the positive long-term effects of privatization in sensitive and related government entities. This will also provide valuable insights for future research and policy efforts in this field.

CHAPTER III

METHODOLOGY

3.1 Introduction

The research methodology is the accumulation of comprehensive study of all governing parameters right from method of survey, collection of qualitative and quantitative data its segregation, analysis and interpretation in most effective way. This chapter is the fundamental basis for the entire study. It is a detailed explanation of the strategies, methodologies, and procedures used to effectively address the research objectives and answer the research questions. This section is crucial as it not only explains the method used to gather information but also showcases the thoroughness, accuracy, and consistency of the study's results. The primary objective of this chapter on research methodology is to provide a detailed explanation of the tools and strategies used to thoroughly analyse the effects of privatization on sensitive and related government institutions in India. This chapter enhances the credibility and reliability of the study conclusions by providing transparency and clarity about the research process. It does so by explaining the research design, data gathering methods, sample processes, and analysis techniques.

The chapter commences with outlining the research methodology employed in this study, which may be qualitative, quantitative, or a combination of both, depending on the research questions and objectives. Afterwards, it presents a comprehensive account of the data collection methods employed, encompassing both primary and secondary sources. The privatization of sensitive and allied government organisation is complex process and govern by various parameters having progressive and some part of retrogressive effects. Considering this, the data collection is going to be formulated, structured with realistic approach neutral effect is obtained. The text provides an overview of primary data collection methods, including surveys, interviews, and observations. It also explains the reasons for choosing these methods and the steps used to maintain the quality and reliability of the data. The study also examines secondary data sources, including government papers, academic literature, and industry publications, emphasizing their significance and contribution. In addition, the chapter provides detailed information about the sampling approach used to choose participants or data sources, which guarantees that the findings are representative and may be applied to a larger population. The reason for the sample size, selection criteria, and sampling methodologies is explained to support the methodological choices chosen, regardless of whether probability or non-probability sampling approaches are used.

In addition, the chapter outlines the analytical approaches used to examine the data that was obtained, including statistical methodologies, content analysis, and thematic coding. The justification for choosing analytical tools and techniques is explained, along with factors to ensure the accuracy, consistency, and applicability of the data. Hence, the research methodology chapter acts as a guide for performing the study, leading readers through the research process from collecting data to analysing and interpreting it. This chapter improves the credibility and reliability of the study's findings and contributes to the progress of

knowledge in the field by ensuring transparency, rigor, and coherence in the methodological approach.

3.2 Need for the Study

One of the objectives of the proposed research is to investigate the strategic impacts that privatization has had on sensitive and interconnected government institutions in India. It is important to note that this research is motivated by a diverse range of requirements, which highlights its significance in both academic and practical settings. This includes evaluation of actual or likely benefits as well as negative impacts (Reed M S., 2021). To begin, it is of the utmost importance to evaluate the efficiency, productivity and results of privatization initiatives, particularly regarding sensitive and interconnected government agencies. It is normal practice to seek privatization to bolster operational efficiency and streamline existing as well as new processes. It is critical, however, to scrutinize the implementation of privatization with attention to detail when it comes to sectors that are crucial for national security, defence, and key services. This is because these sectors are essential to functioning well. For policymakers and administrators who are responsible for the creation of public policy, it is of the utmost importance to have a complete grasp of how privatization affects the performance, accountability, and resilience of these institutions Hodge G (2000).

The purpose of the study is to shed light on the real-life experiences and opinions of employees in order to encourage discussion, empathy and collaboration among stakeholders. In turn, this helped to facilitate the creation of policies that are more inclusive and responsive to the needs of the community.

Additionally, the requirement of doing a comprehensive analysis of the long-term effects that privatization has on the internal operations of firms and the well-being of their employees is the impetus for the findings of this study. Workers in essential government sectors are at the vanguard of organizational transformation, coping with changes in job duties, work environments, and institutional cultures. They are also at the forefront of the transformation. Their perspectives on the policies of the government, their participation in the decision-making processes, and their experiences with the changes brought about by privatization provide an essential understanding of the human dimensions of organizational restructuring.

As an additional point of interest, the research investigates the wider economic and social demands by conducting an analysis of the systemic implications that privatization has on society as a whole.

Furthermore, the purpose of the study is to generate practical insights and policy ideas that are in line with the difficulties and complexities especially strategic implications associated with privatization in sensitive sectors of the government agencies. In order to provide information for evidence-based decision-making, promote organizational effectiveness, social security of employees, to defend the interests of them and the public, the research intends to make use of empirical facts and the viewpoints of stakeholders. This study is to expand our understanding, facilitate the development of policy frameworks, and support the adoption of growth routes that are both sustainable and equitable. This was accomplished by performing a comprehensive examination of both primary and secondary data.

The objective of the proposed research is to conduct an exhaustive investigation into the numerous facets of privatization in India's sensitive and interconnected government organizations. The purpose of this research is to investigate the effects of existing governance paradigms on organizational performance, employee experiences, and its socio-economic outcomes in order to encourage informed discussions, new policies, and transformative changes in governance paradigms. By implementing these improvements, the governing system hopefully became more inclusive, responsive, and sustainable.

3.3. Research gap

The qualitative and quantitative empirical studies, investigation focusing on particular incident, sectors such as in scientific fields, or nations are covered. Recent research by (Wang et. al ,2018) examiner the publications published solely in international public administration journal, where some other studies such as concentrated on country like China, Indonesia, Taiwan and UK. There is no overall review or record that synthesizes risk variables that are applicable for research topic above. The purpose of research work is to address this by defining long-term strategic impacts and generic risk variables linking to part of existing frameworks of risk management and developing the criteria model.

3.4 Objective of Research

In addition to four objectives given in chapter one the additional objective regarding inversion concept is

To verify the applicability of inversion concept for evaluation of performance of sensitive and allied government organizational inconsonance with privatization.

3.5 Research Process

A research technique is comprised of rectifications of number of fundamental procedures that need to be carried out to produce positive results. Several steps are involved in the process, including the following: The research process determining the subject of the research, conducting a literature review on relevant topics, developing a hypothesis, developing a research plan, choosing a sample design, collecting data, carrying out the research project, analysing the data, testing the hypothesis, and interpreting the findings. Every step of the research process is essential, and each one contributes to the achievement of a certain goal.

Furthermore, the research encourages the utilization of scientific and inductive reasoning, in addition to the development of procedures that are both methodical and reasonable for problem-solving. This entails a wide range of responsibilities, such as determining the research problem, doing an exhaustive analysis of the current body of literature, creating a hypothesis, developing the research methodology, and selecting an appropriate sample. The research methodology depicted in Figure 3.1 is done in a systematic manner.

Using a rigorous strategy to collect and analyse data is what we mean when we talk about research techniques. When developing a strategy for doing research, it is of the utmost importance to select the methodology that was utilized with great consideration. In the process of formulating your plan, it is essential for you, as a researcher, to take into consideration two essential components. Research methods are a collection of procedures, protocols, or

frameworks that are utilized in the process of gathering data or evidence for the purpose of analysis. In order to get a more comprehensive understanding of a topic or to discover facts that were previously unknown, a variety of strategies are applied. Every single one of the research procedures that are currently in existence makes use of a different collection of instruments in order to gather information.

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Figure 3. 1: Research Process

3.6 Research Design

This study takes a descriptive method that is based on sample survey techniques in order to investigate the complexities of privatization or entry of private services in India's sensitive and interconnected government organizations. The primary goal is to assess the merits and disadvantages of privatization, as well as to investigate the long-term strategic effects that it had on the processes that are already in place.

The primary focus of this investigation is on the first-hand information that was gathered from individuals who are employed by these government entities. When it comes to providing additional assistance, secondary sources were utilized in addition to primary sources of information. In this investigation, both descriptive and analytical methods were utilized to

investigate these sources. The design of the questionnaire was meticulously modified to ensure that it appropriately reflects the objectives of the study. For determining the long-term consequences of privatization on the operation of sensitive and related government organizations, the research utilized multiple regression analysis. This statistical tool makes it easier to have a comprehensive understanding of the positive effects that privatization has, and as a result, it offers significant insights that may be used to advise future policies. Details of Research attributes in research methodology followed is given in the following table(table 3.1)

Table 3.1: Details of attributes followed in Research methodology

Sr. no	Attributes/criterion of research methodology	Type of study	Justification
i.	Research Design	Descriptive	To investigate the complexities of Privatization
ii.	Method of data collection	Primary and secondary	Quantitative method is more efficient and economical
iii.	Sample frame	Random sample 500 employees	For wide variety of viewpoints
iv.	Population(POP)	From top ten government organizations	For accurate representation
v.	Data analysis technique	ANOVA	Useful for evaluating disparities of two or more groups within data set and for benefits while comparing

4. Conceptual Framework and flow chart

The study's conceptual framework consisted of the components outlined in research objectives is given Figure 3.2 (a). The alternate flow chart(figure 3.6) of conceptual framework of topic under research is shown [as 3.2(b), description given].
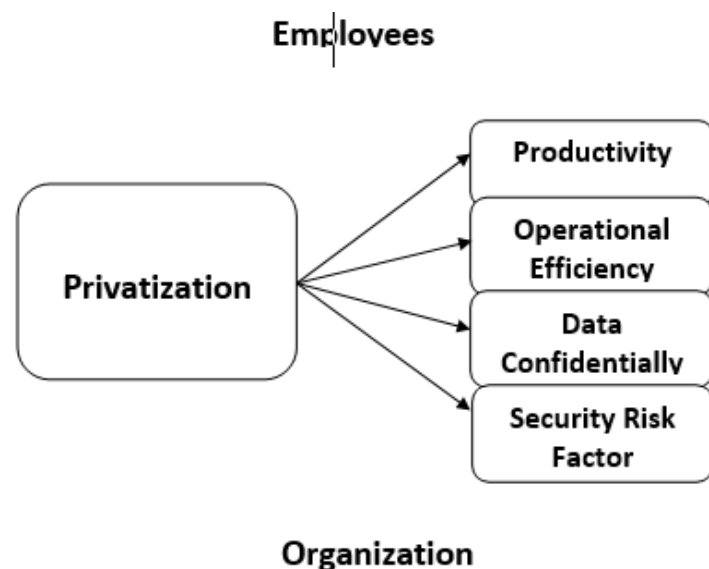
Figure 3. 2 (a): Conceptual Framework

- Independent Variables: Productivity, Data Confidentiality, National security risk factor and overall operational efficiency of sensitive and allied government organizations

- Dependent Variables: Entry of Private Services

This conceptual framework delineates the connections between the independent factors (productivity, data confidentiality, national security risk factor, and overall operational efficiency) and the dependent variable (entrance of private service). The theory proposes that alterations in the independent variables can potentially affect the incorporation of commercial services into sensitive and linked government entities.

The study seeks to analyse the strategic impacts of productivity variations, data confidentiality, national security risk factor, and overall operational efficiency on the entry of private services. It aims to understand how respective organizational performance factors interact with privatization dynamics in sensitive and allied government organizations in India.

Overall Performance of Privatisation in past and present in India

In the past, eleven CPSEs had undergone strategic disinvestment from 1999- 2000 to 2003- 2004.To assess the performance CPSEs in India before and after Privatization the Economic Survey carried out indicates that the privatised firms performed better and CPSEs could unlock and exhibit their potential to create wealth substantiated by improved performance [T]. This indicated by the following figure 3.3. Red lines indicates performance of loss-making companies whereas majority of CPSEs indicted by blue lines has outperformed.
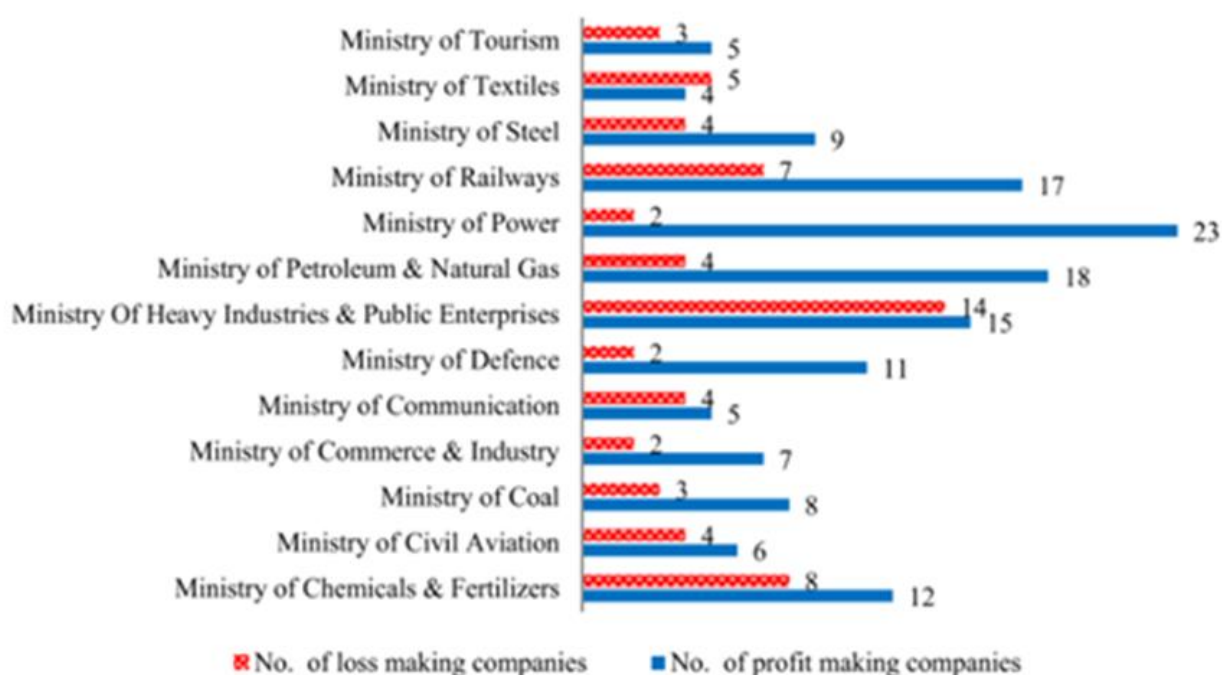
Figure 3.3 : Performance of no. of CPSEs after Privatization in India
(Source :Development of Public Enterprises)

A noticeable reform has contributed to restrict Indian state-run enterprises from dilapidation due to corporation and privatization. On the contrary, it has fostered in terms of financial gain. The state-run PSUs and Private sectors working in defence have contributed about 60% and

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[T] https://www.legacyias.com/v1c9-privatization-and-wealth-creation/

40% respectively during year 2023-2024[$$$]. This represented by the following figure. 3.5 which indicates that nation has exported defence items more than Rs 21,000 crore in 2024.

The findings through Economic survey [TT] carried out for period in the year 2020 – 21. Figure 3.4 shows net revenue generation in pre-and post-privatization

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Figure 3.4 : Revenue generation during year 2020-21
(Source: The Hindu)

Similarly, India's defence exports has increased rupees 21083 crore from financial year 2016-17 to 2023-24 .This performance jump is indicated by figure 3.6 below.

Figure. 3.5 : Rise in defence export from 2016-17 to 2023-24
(Source: BSE)

[$$$]https://www.thehindu.com/business/privatisation-survey-suggests-new-vehicle/article30706188.ece)
[TT]https://www.thehindu.com/business/privatisation-survey-suggests-new-*vehicle/article30706188.ece)*
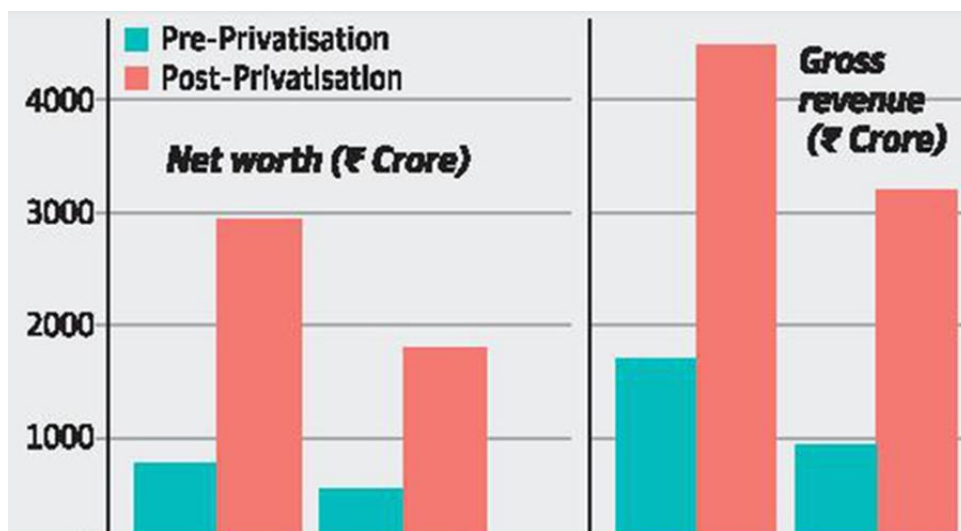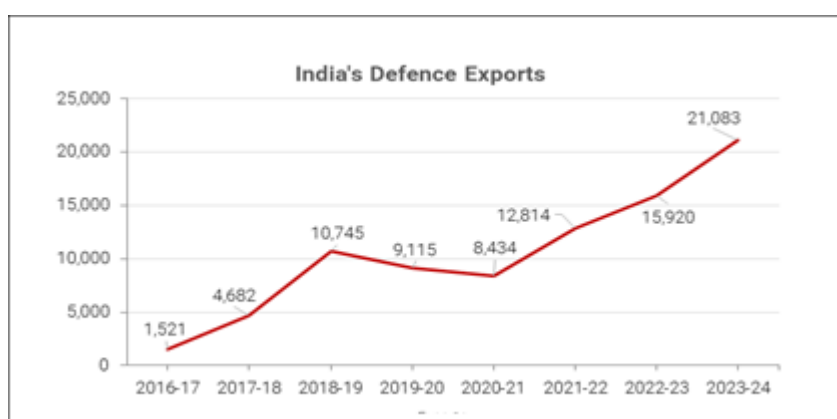
Inversion concept

Unlike both the management types discussed in chapter 1 earlier, the inversion concept in horizontal management, is neoliberal type decision and policy implementation in organization where employees are directly reporting to top brass that promotes decoupling the middle level or higher-level management. This is depicted by figure 3.7 & figure 3.8.

The horizontal management represented by figure. 3.7 & 3.8 shows top manager as Director and subordinates as the employees. There is direct exchange between the Director and employees for all types of information and decisions. It is assumed that employees are versatile and competent to handle technical, financial and administrative decisions or activities. It is also assumed that the operational structure is devoid of middle level management.
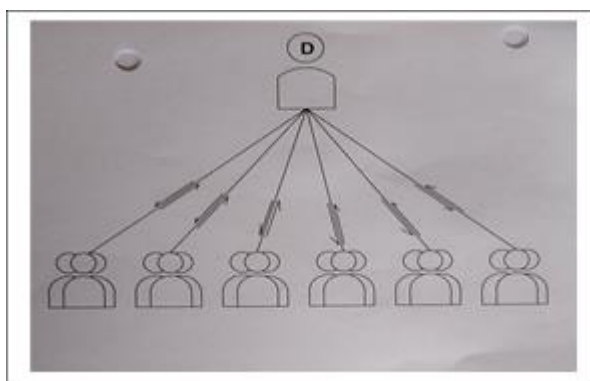
Figure. 3.7 : Inversion concept(Front view)   D = Director
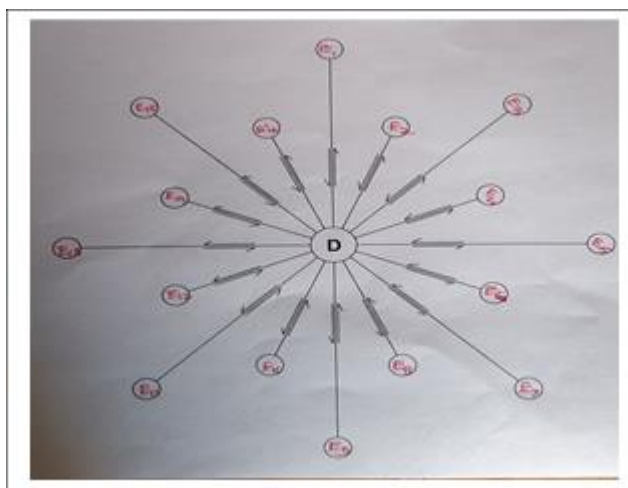
Figure 3.8 : Inversion concept(Top view)   **E-Employees**

The output governed by productivity (H1) and operational efficiency(H2) will be substantiated by data collection from various resources and its analysis by suitable statistical method. The evolution of successful products due to the combination of private firm with sensitive and Allied government organization under PPPs or government turned private organization has culminated into positive financial output contributing to nation's interest which potentially

impacted on productivity and operational efficiency. It will have other multifaceted effects such as inter-organizational changes or reforms within other government agencies for betterment and survival of valuable government organizations.

The factors which affects the productivity and operational efficiency are related to data confidentiality (H3) and national security (H4) which invite the need of data protection measures with Service Level Agreement (SLA) into security related SLAs. There is need for effective governance to enhance the national security. To increase the effectiveness and to streamline the entire management process a new variable (H5) pertaining to the inversion concept is added.

Above cumulative remedial measures will increase the overall output of the system. This is supported by data collection and analysis by suitable method to arrive at the conclusion. The overall evaluation will be discussed, introspected to meet research objectives.

Considering the above aspects, by maximizing implementation of the industry's participation, digitization, strengthening with AI tools in the system, the sensitive and allied government organizations along with suggested remedial measures will fill the research gap. In totality, the conceptual framework and usefulness of evaluation will shift the present goal post towards "Atmanirbhar Bharat".
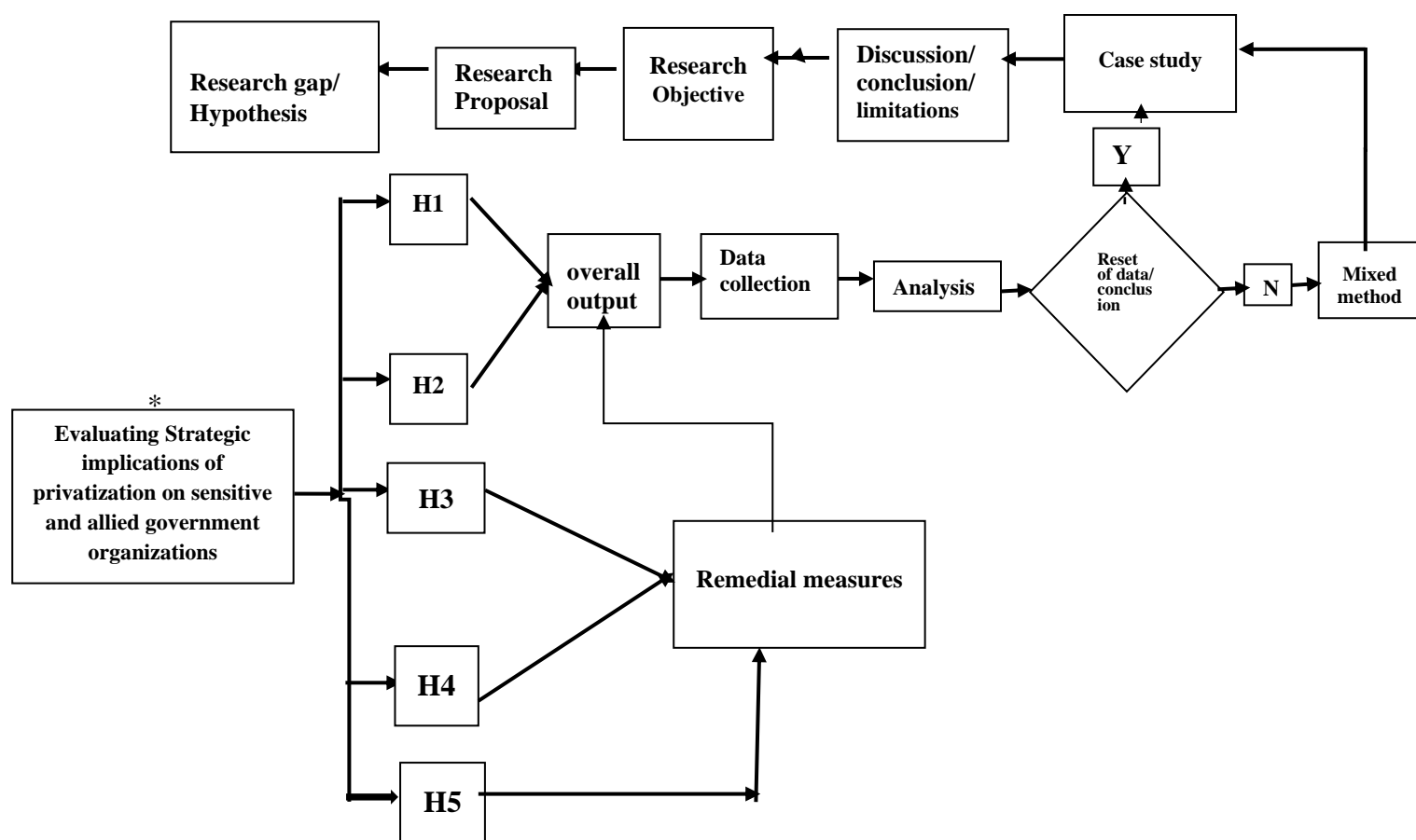
Figure 3.6: Alternate Conceptual framework-Flow chart [3.2(b)]

At the ground level, technically and administratively competent employees are empowered and authorized to take independent decisions about procurement, marketing, sales, customer care etc. in consonance with co employees. In this case, Henry Foyle's management model is referred to and implemented to maximize productivity by emphasizing on organizational base structure for better planning, production and control over the elements that hinder the progress of an organization.

5. Objectives of Study

1. To study the Strategic long-term implications of entry of private services on productivity of sensitive and allied government organizations in India.
2. To study the long-term strategic implications of entry of private services on data confidentiality of sensitive and allied government organizations in India.
3. To study the strategic implication on national security risk factors due to entry of private services into sensitive and allied government organizations in India.
4. To study strategic implications on overall operational efficiency due to entry of private services into sensitive and allied government organizations in India

6. Research Questions

1. What is the effect of Strategic long-term implications of status of productivity sensitive and allied government organizations in India?
2. What are the corresponding long-term impacts on data confidentiality due to entry of private services into sensitive and allied government organizations in India?
3. What are the strategic implications on national security risk factors due to entry of private services into sensitive and allied government organizations in India
4. What are the strategic implications on overall operational efficiency of to entry of private services into the functioning of sensitive and allied government organizations in India?
5. What are the recommendations for successful entry of private services into the functioning of sensitive and allied government organizations in India?

7. Population and Sampling

In the context of research, the following statistical terminology is used meet requirement of survey or investigation.

7.1 Population: The demographic being examined consists of employees of government entities in India that are involved in sensitive and related activities.

7.2 Sampling: A random sample of 500 employees was selected from each of these firms to participate in the survey. The purpose of the sampling method is to encompass a wide variety of viewpoints by involving personnel from different positions such as supervisory, technical, clerical, and non-technical roles to ensure accurate representation of larger workforce.

   a) **Inclusion conditions:** To be eligible to participate in the survey, employees must satisfy specific conditions given above.

   b) **Exclusion Criteria:** Specific groups of employees are omitted from the sample process in order to uphold the study's focus and relevance. Officers, managers, and middle-level executives are omitted from the selection procedure in order to

simplify the sample and focus on frontline staff and lower-tier management positions. Furthermore, Employees who fail to fulfil the requirements of actively participating in their professional responsibilities or lacking adequate comprehension of privatization are eliminated to guarantee the accuracy and dependability of the gathered data.

c) **Sampling technique:** The sampling technique commences by creating a comprehensive list of both sensitive and affiliated government entities that are currently active in India. A study sample is formed by randomly selecting ten firms from this list. A random sample of 500 employees who match the inclusion requirements is picked from each chosen organization to participate in the survey. The selection procedure is carried out with objectivity, guaranteeing that all eligible individuals within the company have an equitable opportunity of being chosen. The study intends to use simple random sampling to collect a representative sample of employees from sensitive and linked government agencies. This allowed for a comprehensive analysis of their viewpoints on privatization and its long-term effects.

8. Study of strategic Profile Area

The research area consists of many government entities in India that are sensitive and related. It is a complex and diversified environment that is influenced by the junction of national security needs, public service provision, and economic growth goals. These institutions function in multiple sectors, including as defence, intelligence, law enforcement, finance and key services. They have crucial responsibilities in protecting national interests, upholding public order, and advancing socio-economic growth[&&]. Figure 3.9 shows annulus of defence space program and impacting variables to run defence space programmes.
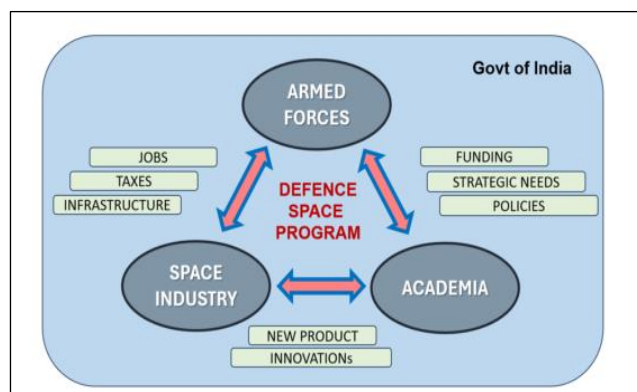
Figure 3.9: Defence space programme variables
(*Source: Indian aerospace and defence bulletin*)

An important component of the study region is its strategic significance within the wider governance framework of India. Government entities with high levels of sensitivity, such as those engaged in defence and intelligence, have the responsibility of protecting the nation's sovereignty, territorial integrity, and security. Their operations involve a diverse array of

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[&&]https://www.iadb.in/2024/04/14/harmonizing-military-space-ambitions-with-indias-national-space-strategy-a-comprehensive-analysis/

actions, such as defence strategizing, gathering intelligence, safeguarding borders, and conducting counter-terrorism initiatives. These activities are crucial for upholding national security in a progressively intricate geopolitical landscape.

In addition, various government entities that are aligned with each other enhance the operations of sensitive agencies by offering crucial support services, infrastructure, and administrative duties. The sensitive and linked government entities work together as a unified system to promote the well-being and safety of citizens, as well as to support economic growth and development.

The research topic exhibits an intricate interaction between public and private interests, particularly with regards to the matter of privatization. Privatization has become a prominent policy strategy in recent years, with the goal of improving efficiency, streamlining bureaucracy, and fostering economic competitiveness. Nevertheless, the use of this technology in sensitive and affiliated government entities raises concerns about responsibility, openness, and the protection of national interests. It is crucial to comprehend the effects of privatization initiatives on organizational performance, employee dynamics, and socio-economic results in order to develop effective governance methods and protect the public interest.

Furthermore, the strategic study area is characterized by a heterogeneous workforce consisting of individuals from numerous origins, disciplines, and skill sets plays specific role in achieving specific goals or mission in their domain. To fully comprehend the human aspects of organizational transformation, policy implementation, and decision-making processes, it is crucial to consider their experiences, viewpoints, and goals hence it is crucial to consider their experience and viewpoints.

Therefore, the research subject of sensitive and allied government entities in India is a multifaceted and intricate realm influenced by strategic, policies priorities, public service obligations, and socio-economic factors. The study aims to gain a thorough understanding of the context in which privatization initiatives are carried out and their impact on organizational performance, employee well-being, and socio-economic development. This was achieved by analysing the area's profile, including its strategic significance, governance difficulties, and human dynamics.

9. Data Collection Tool

Researchers used a grounded theory framework to gather and evaluate data from interviews and observations at the same time. By employing parallel execution, this approach allows for the implementation of ideas gained from data in later interviews that are different from previous ones. Participants can engage in comprehensive inquiries of the subject matter through interviews, which is advantageous when the researcher is unable to directly evaluate every aspect of the participant or the issue. Both the viewpoint of the participant and the impact of group bias might influence the responses they provide throughout the interview. Utilizing interviews as a means of gathering information has a disadvantage (Sharma, 2002). A data collection tool is a methodical and consistent methodology employed to acquire information

from those involved in research. Data collection can be accomplished through various means, including questionnaires, interviews, surveys, and other sorts of observation.

A standardized and structured questionnaire was developed, to suit the requirement of research objectives. A predetermined set of questions that were administered to all participants in a uniform sequence. The questionnaire format is frequently utilized in quantitative research to gather data that can be readily evaluated and compared among various respondents or groups. Depending upon content to understand various groups have been formed to get appropriate answers. The questionnaire comprises characteristics such as productivity, data confidentiality, national security risk factor, and overall operational efficiency. These variables are intended to be responded using a closed-ended Likert scale that ranges from 1 (Strongly Disagree) to 5 (Strongly Agree). As an illustration, in order to evaluate productivity, participants are inquired: "Has the introduction of private services led to a substantial improvement in the productivity of our organization?" In assessing data confidentiality, the topic at hand is whether the engagement of private services has jeopardized the confidentiality of sensitive data within our firm. The statement in question is about the heightened national security dangers our company is facing due to the introduction of privatized services. Finally, in order to assess the overall operational efficiency, participants are asked to answer the question: "Has the integration of private services into our organization led to an improvement in overall operational efficiency?" The study seeks to gain a thorough understanding of the effects of privatization on many parts of sensitive and linked government institutions. This allowed for a complete analysis of both the advantages and difficulties that arise from to study overall strategic implications the introduction of private services into sensitive and allied government organisations

10. Data Collection

In order to address the research problem, confirm the hypothesis, and assess the results, the first stage is to collect data from all relevant sources pertaining to the investigation. By utilizing efficient data collection methods, researchers can analyse important subjects and make accurate predictions about future trends and possibilities. Following the process of data collecting, the subsequent stage involves arranging the accumulated information in a methodical and structured manner.

Online surveys have emerged as an essential research tool for collecting data. This method is not only economical but also readily available to potential respondents based on their background. Studies suggest that online surveys have become a substantial element of market research, accounting for 20% of worldwide expenditure on data gathering techniques. This study uses online surveys as the primary method of data collection owing to the myriad advantages they provide (Pandey & Pandey, 2021).

There are two types of data collection methods that were used in the study:

a)   **Primary Data:** "Primary data" refers to information that is freshly gathered and distinct to the research endeavour. To collect primary data, questionnaires have been distributed to individuals who hold key positions in ten prominent and interconnected government organizations in India. The purpose of these questionnaires is to gather employees' viewpoints on government policies, working conditions, involvement in management and policymaking,

and the long-term effects of privatization. The participant selection procedure has been made easier by using simple random sampling, which involves randomly selecting individuals from the larger pool of employees in each selected firm. A sample of 500 employees has been randomly chosen, including supervisory, technical, clerical, and non-technical positions, but excluding officers, managers, and middle-level executives. Participants are required to have a necessary level of comprehension regarding privatization and must be actively involved in their respective professional positions during the survey. Primary data refers to information that is collected directly from the individuals, companies, or government agencies that originated it. The data in question has not been previously gathered and is exclusive to the ongoing investigation. Collecting primary data entails, the acquisition of information that was utilized for further statistical analysis. Quantitative or qualitative procedures might be employed to gather primary data. Quantitative methods employ mathematical calculations, whereas qualitative methods utilize closed-ended surveys and techniques such as correlation and regression analysis. Acquiring and examining original data offers academics distinct and useful perspectives, but it may be a challenging and time-intensive undertaking.

Data collection involves the direct acquisition of information from original sources. The fundamental purpose of primary data collection is to acquire precise and comprehensive information within the limitations of time and resources. This data can be employed in diverse ways to improve both human welfare and environmental circumstances. Offline data gathering is widely acknowledged as an essential method for obtaining information.

b) **Secondary Data:** Secondary data refers to information that is obtained from sources other than the primary source. Secondary data is defined as information that is not collected directly by the researcher but rather obtained from other sources. Primary sources encompass literary works, scholarly publications, and online resources sourced from the internet. Secondary sources include material of this nature. Secondary data is derived from existing sources, while primary data is gathered directly from the originating source. Primary data is acquired directly from the authentic source of information. When discussing this, we are talking to data obtained for diverse research aims by different individuals or groups, or both. Secondary data, which is gathered indirectly, is often seen as less reliable and accurate than primary data collected directly. The researcher has collected data from numerous published sources to investigate the research question. The collection of secondary data was conducted by a thorough examination of the pertinent literature. This study analysed a diverse array of papers from multiple sources.

The research methodology proposed for this study involves collecting data from both primary and secondary sources. Secondary sources encompass a variety of materials, including reports issued by the Government of India, esteemed scholarly publications, popular magazines, newspapers, books, and websites. The committee scrutinized the reports that specifically address the economic and financial transformations that take place in government firms following privatization.

In order to safeguard the privacy of individuals' personal information, their data has been subjected to anonymization, adhering to privacy principles and ethical standards. Preserving

confidentiality has cultivated confidence and a favourable relationship with participants, while also maintaining the integrity and neutrality of the study procedure.

11. Statistical Techniques

This research has utilized advanced statistical software such as SPSS and Microsoft Excel. To determine the relationship between entrepreneurs and demographic characteristics, researchers have employed statistical techniques like descriptive statistics, the chi-square test, and other ways (Orngreen & Levinsen, 2017). The study has utilized numerous statistical approaches, which are explained as follows:

a) **Descriptive Analysis:** An example of a statistical method that was used to summarize and explain the fundamental characteristics of a dataset is called descriptive analysis. In order to provide a comprehensive description of the data, the technique include the calculation of statistical metrics such as the mean and the standard deviation, as well as the creation of graphical representations. To begin the process of data analysis, it is necessary to first carry out a descriptive analysis. It assists in the identification of patterns, trends, abnormalities, and outliers that may call for additional research (Siedlecki, 2020). Mean Standard deviation, Graphical representation are some of the strategies that are commonly used in descriptive analysis:

b) **Likert Scale:** To evaluate concepts, attitudes, or behaviours via the use of a rating system, a Likert scale is a useful instrument. There is a statement or question that is included in the format, and then there is a series of five to seven different response alternatives. Respondents choose the option that most truly represents how they feel about the message or the subject matter before taking the survey. Due to the fact that they provide a wide variety of response alternatives, Likert scales are an efficient method for determining the extent to which respondents agree or disagree with a certain subject matter. On the other hand, Likert scales are prone to response bias, which occurs when respondents have a tendency to agree or disagree with all claims owing to factors such as fatigue, social desirability, extreme responding habits, or other demand characteristics.

c) **Correlation:** The process of determining the degree to which two variables are related to one another to arrive at a conclusion is what is known as correlation study. The correlation coefficient, which is known as "r," may range anywhere from minus one to plus one. When the correlation value is +1, it indicates that there is a complete positive correlation between the variables that were recorded. There is a direct correlation between an increase in one variable and a comparable increase in the other variable. In the case of the two variables, a correlation value of -1 indicates that there is a complete negative correlation between them. This indicates that there is a link between the two variables that is inverse, meaning that a rise in one variable is followed by a commensurate decrease in the other variable. There is no association between the variables when the correlation value is 0, which shows that there is no link between them.

d) **Bivariate analysis**: It utilizes correlation to determine the type and strength of the relationship between the variables under examination. To assess the strength of the

association between variables, one can calculate the correlation coefficient, which ranges from +1 to -1. This enables the assessment of the intensity of the connection. A correlation is considered "perfect" when the correlation coefficient between two variables is exactly -1, indicating a complete relationship between the two components. This indicates a full correlation between the variables. The correlation value approaching zero indicates a weakening link between the two components. The correlation value is approaching zero. The coefficient's sign might indicate whether there is a positive, negative, or neutral relationship between the variables. One can achieve this by examining the format in which the coefficient is presented (Marks and Yardley, 2004).

e. Regression: Regression is a statistical technique used to predict the value of a dependent variable. This technique utilizes the value of an independent variable to produce a forecast. By employing simple linear regression, which involves fitting a straight line to the data, one can construct a mathematical model that accurately represents the relationship between the variables. This can be accomplished by utilizing the strategy. A line is determined by finding the slope and intercept that reduce the distance between the line and the observed data points. This is done to establish the boundary. A regression equation is a mathematical model used to predict the value of the dependent variable (y) based on a certain value of the independent variable (x). The goal is to establish a connection between the two variables. By calculating the standard error of the estimate, we may determine the level of precision in the predictions generated by the regression equation (Gujarati and Porter, 2010).

Within the scope of this chapter, researchers and data analysts work together to enhance their capacity to forecast future performance and to get a deeper comprehension of the relationships that exist between the numerous factors. The use of regression analysis was applied for a variety of purposes, including the investigation of novel viewpoints and the improvement of one's comprehension of patterns. Data analysts were able to properly investigate the link between factors that are dependent and variables that are independent if they ensure that the dataset for regression analysis is managed in the appropriate manner. Using regression analysis, it is possible to effectively manage enormous datasets by taking into account all of the major factors that have the potential to influence the datasets. Because of the statistical character of regression analysis, it was feasible to do it. As a result, it was feasible to improve the process and address any problems that had surfaced throughout the course of its execution (Chawla & Sodhi, 2011).

One method that is reliable and risk-free, regression analysis is a method that assists researchers in determining the components that are impacting a certain problem. When it comes to studying the subject matter that the researchers were looking into, these tactics were of assistance. The dataset was analysed, alternative and null hypotheses were formulated, and then regression analysis was used to evaluate the hypotheses. The evaluation of the dataset is necessary to achieve this goal.

e) ANOVA: ANOVA, often known as Analysis of Variance, is a statistical technique used to evaluate the disparities in means among two or more groups within a dataset. It is a useful

tool for researchers who want to assess if there are statistically significant differences in means across different categories or levels of an independent variable. ANOVA is especially beneficial when comparing the means of three or more groups since it enables the analysis of both the variability within each group and the differences across groups. ANOVA is primarily driven by the comparison of variance estimates. It assesses the degree to which the observed disparities in average values between groups are greater than what would be anticipated because of random fluctuations within the groupings. ANOVA allows for the measurement of both systematic (variance across groups) and unsystematic (variance within groups) components, providing a better understanding of the individual factors' contributions to the total variability in the data. It relies on several fundamental assumptions, including the independence of observations within each group, the normality of data distribution within each group, and the homogeneity of variance between groups. Deviation from these assumptions can have a significant impact on the accuracy and consistency of ANOVA findings, highlighting the necessity of thorough data screening and validation methods.

ANOVA encompasses a range of distinct variants, each designed to suit research methodologies and purposes. One-Way ANOVA is a statistical method that compares the means of two or more groups based on a single independent variable. On the other hand, Two-Way and N-Way ANOVA expand the analysis to include many independent variables. These variants enable researchers to investigate intricate interactions and linkages among factors that influence the dependent variable. The hypotheses examined in ANOVA are clear-cut but influential. The null hypothesis (H0) states that there are no statistically significant differences between the means of the groups, but the alternative hypothesis (Ha) proposes that at least one group mean differs significantly from the others. The ANOVA test statistic, known as the F-statistic, measures the ratio of variance across groups to variance within groups. This allows for a systematic assessment of differences between groups.

Interpreting ANOVA findings entails assessing the resultant F-value in relation to a pre-established significance level (alpha). If the computed p-value associated with the F-statistic is less than the selected alpha level, the null hypothesis is rejected, showing the presence of significant differences between the means of the groups. Subsequent analyses, such as Tukey's HSD or Bonferroni correction, might be used to pinpoint certain disparities between groups.

ANOVA is a resilient and extensively employed statistical method for comparing means of groups and evaluating disparities across several levels of an independent variable. The tool's adaptability, together with its rigorous assumptions and hypothesis testing procedures, makes it essential for researchers in various sectors who aim to discover significant insights from their data.

Table 3. 2: Summary of Hypotheses and Tests Used

Sr. No.	Hypothesis of Study	Test Used	Justification for the Test
1	H1: The entry of private services has a positive long-term strategic implication on the productivity of sensitive and allied government organizations in India.	**Regression Analysis**	Regression analysis has been employed to evaluate this hypothesis by investigating the correlation between the introduction of private services (independent variable) and productivity (dependent variable). Regression analysis has been used to measure the magnitude of the effect of privatization on productivity and ascertain whether it is both positive and statistically significant.
2	H2: The entry of private services has a more positive long-term strategic implication if data confidentiality of sensitive and allied government organizations in India is strictly observed within a legal institutional framework.	**Two-way ANOVA**	This hypothesis has been examined by conducting a Two-Way ANOVA to assess the interaction effect between the introduction of private services and the rigorous adherence to strategic factories, data confidentiality (independent variables) on productivity or another pertinent result (dependent variable). This study aims to determine if stringent data confidentiality improves the positive effects of privatization.
3	H3: The evaluation of strategic implication of privatization on sensitive and allied government organizations has resulted in useful findings without compromising the national security risk factor in India.	**Descriptive Analysis and Correlation**	Descriptive analysis has aimed to provide a full understanding of the obtained data by summarizing its core tendencies and variabilities. Correlation analysis has been employed to determine whether there is a substantial correlation between privatization and the risk to national security, guaranteeing that security is not compromised while obtaining valuable insights.
4	H4: Based on the study by GOI, the entry of private services has a beneficial long-term strategic implication on the overall operational efficiency of sensitive and allied government organizations in India.	**Regression Analysis**	Regression analysis has been employed to test this hypothesis and evaluate the influence of private service entry on overall operational efficiency. The regression model has aided in assessing the extent to which the strategic long-term influence is advantageous and statistically meaningful.

5	The inversion concept does not assume repercussions of missing middle-level management effects on the overall functioning of the organization.	**Descriptive Analysis and ANOVA**	The descriptive analysis has initially provided an overview of the dataset's characteristics and fundamental tendencies in relation to the existence or absence of middle-level management. ANOVA has been employed to determine whether there are substantial disparities in the overall performance of organizations that have middle-level management compared to those that do not, either confirming or disproving the assumption of the inversion concept.

f) **MS Excel and SPSS Software:** Researchers and analysts require access to essential tools like SPSS and Microsoft Excel for data analysis. Users may easily handle, modify, inspect, and scrutinize data using these software platforms, which offer intuitive interfaces and a wide range of features.

Social sciences and research frequently utilize SPSS due to its wide range of operations. The program offers a wide range of statistical methods such as descriptive and inferential statistics, regression analysis, factor analysis, and more. The graphical user interface simplifies complex statistical investigations, making them accessible to researchers with different levels of statistical knowledge (Bala, 2016).

Microsoft Excel is a commonly used spreadsheet tool that offers essential statistical analysis features. Excel is useful for academics, particularly for basic analyses and data organization, while it lacks the advanced features found in SPSS. Excel allows users to perform inferential statistics such as t-tests and chi-square tests, as well as basic descriptive statistics including mean, median, mode, standard deviation, and variance.

Researchers can analyse data, identify trends, and gain insights to aid decision-making and enhance understanding using SPSS and Microsoft Excel, which are essential tools in contemporary research and academic pursuits. Researchers across many fields rely on fundamental data analysis tools due to their accessibility, adaptability, and substantial functionalities (Rossel, 2024).

12. Pilot Study

Before commencing the comprehensive assessment, preliminary research was conducted to evaluate the feasibility, reliability, and precision of the measurement apparatus. The main aim of the pilot study was to ascertain the suitability of the selected instruments for the investigation's aims. The objective of this examination is to pinpoint particular instances where the suggested techniques or equipment may have been inadequate or overly complex, and to emphasize any specific flaws that may have existed in the study. Considering the outcomes of the pilot study, the instruments employed in the research which did undergo significant enhancements and adjustments.

Conducting a pilot study is crucial when engaging in research, particularly for inquiries that are extensive or intricate. Adopting this approach empowered the researchers to modify their

research design, hence diminishing the potential occurrence of any hazards and enhancing the probability of achieving success in the primary study (Kumar, 2022).

13. Ethical Considerations

Ethical issues are crucial in maintaining the integrity and fairness of the research process in the study "Evaluating strategic implications of Privatisation on Sensitive and Allied Government Organizations." The research followed the specified ethical norms.

a) **Informed Consent:** Obtaining informed permission from all subjects included in the research is crucial. Participants must be well briefed about the research's objectives, their role in it, and the possible advantages or drawbacks of their participation. Participants should be granted the privilege to discontinue their involvement in the research at any time without experiencing any negative consequences.

b) **Confidentiality:** It is crucial to protect the confidentiality of participant information. Researchers must guarantee the confidentiality of individual replies and personal information, ensuring they are not shared with unauthorized individuals. Information should be presented in a combined and anonymous manner, and coding mechanisms may be used to securely connect individuals with their data.

c) **Voluntary Participation:** It is vital to highlight the voluntary aspect of involvement. Participants must not feel pressured or compelled to participate in the research.

d) **Minimization of Harm:** Researchers must take steps to reduce any possible damage or discomfort to participants. The questionnaire and research activities should be structured to prevent creating discomfort or negative consequences. Participants should get support mechanisms and information about resources if they encounter any adverse effects from their involvement.

e) **Honesty and Transparency:** Honesty and integrity are crucial throughout the study process. Researchers must effectively convey the study's objectives, methodologies, and anticipated results to participants. Participants' queries or concerns should be handled honestly and openly.

f) **Respect for Autonomy:** It is crucial to respect the autonomy and rights of participants. Participants should have the autonomy to make informed choices about their involvement and the ability to withdraw from the research at any point should be honoured without hesitation. The shared information shall not be revealed either by participants or researcher to third party except academic research.

Hence, the study attempts to uphold ethical norms by stressing ethical conduct, politeness, transparency, and respecting the well-being and rights of participants. Above ethical norms improves the credibility and accuracy of research results and upholds the honesty of the research procedure.

14. Conclusion

Ultimately, the research methodology or technique chapter establishes the foundation for the methodical examination of the study's goals and research inquiries concerning the strategic implications of privatization on sensitive and allied government organizations in India. This chapter offers a thorough explanation of the research approach, data collection methods, sampling procedures, and analytical methodologies, providing a full guide for conducting the

study. The chapter commences with clarifying the research approach chosen, which may be qualitative, quantitative, or a combination of both, depending on the study questions and objectives. It highlights the significance of aligning the methodology with the goals and objectives of the study to ensure the accuracy and consistency of the results. In addition, the chapter outlines the data collection methods employed, encompassing both primary and secondary sources. The text emphasizes the justification for choosing particular data sources and the methods used to guarantee the accuracy, consistency, and ethical adherence of the data.

The sampling approach is thoroughly explained, providing a detailed explanation of the reasoning for the sample size, selection criteria, and sampling techniques. The study emphasizes the need of ensuring that the findings are representative and generalizable in order to reduce sampling bias and strengthen the reliability of the study conclusions. In addition, the chapter describes the analytical methods used to examine the gathered data, including regression analysis, correlation analysis, ANOVA, and factor analysis, among others. Each technique is chosen based on its appropriateness for addressing the research questions and objectives and its ability to produce significant insights from the data. Hence, the research methodology chapter plays a crucial role in establishing a solid basis for the study, ensuring that the methodological approach is clear, transparent, and coherent. The chapter maintains credibility, validity, and reliability of the study's findings by following strict research standards and best practices. This contributes to the progress of knowledge in the field of privatization and government organizational dynamics.

15. Questionnaire

Aim is to Evaluate the strategic Implications of Privatization on Sensitive and Allied Government Organizations in India

This survey seeks to gather insights on the strategic effects of privatization on sensitive and allied government organizations in India. Demographic information of population and characteristics such as age, gender, highest educational qualifications, years of experience current position departments (including private and public) and their participation in projects with regard to sensitivity has been covered and respective questionnaire is formulated. It is aimed to assess how privatization affects productivity, data confidentiality, national security, and operational efficiency within these organizations.

Your responses will provide valuable data to assess the strategic implications, effectiveness and challenges of privatization in these critical sectors which are sensitive in nature . Please take a few moments to complete the survey, answering honestly and objectively using the provided Likert scale. All responses will be kept confidential and used solely for research purposes. Your participation is greatly appreciated.

Questionnaire

Demographic Information

1. Age:
   a) Under 30
   b) 30-39
   c) 40-49
   d) 50-59
   e) 60 and above
2. Gender:
   a) Male
   b) Female
   c) Other
   d) Prefer not to say
3. Highest Educational Qualification:
   a) Bachelor's degree or Diploma
   b) Master's Degree
   c) Doctorate/PhD or above
   d) Other (Please specify)
4. Years of Experience in Scientific Research:
   a) Less than 5 years
   b) 5-10 years
   c) 11-15 years
   d) 16-20 years
   e) More than 20 years
5. Current Position:
   a) Junior Level Employee
   b) Mid-Level Employee
   c) Senior Level Employee
   d) Executive Level
   e) Management Level
   f) Other (Please specify)
6. Department:
   a) Technical
   b) Research & Development
   c) Operations
   d) Management/Administration
   e) Security
   f) Other – Please specify

7. Type of Organization:
   a) Government Research Institute
   b) Public Sector Research Organization
   c) Private Research and Development (R&D) Firm
   d) Academic Institution
   e) Other (Please specify)
8. Participation in Collaborative Projects of government and private sectors:
   a) Yes
   b) No
9. If yes, are you part of the collaborative research team
   a) Yes
   b) No
10. Area of Research Focus:
    a) Basic Research
    b) Applied Research
    c) Translational Research
    d) Policy Research
    e) Other (Please specify)
11. Involvement in Sensitive Projects:
    a) Low (Occasional involvement)
    b) Medium (Regular involvement)
    c) High (Major involvement in multiple projects)

Section 1: Impact on Productivity

1. Privatization has decreased the overall productivity of our organization.
   a) Strongly Disagree
   b) Disagree
   c) Neutral
   d) Agree
   e) Strongly Agree
2. The introduction of private services has negatively impacted the work efficiency of employees.
   a) Strongly Disagree
   b) Disagree
   c) Neutral
   d) Agree
   e) Strongly Agree
3. The quality-of-service delivery has declined due to the entry of private services.
   a) Strongly Disagree
   b) Disagree
   c) Neutral
   d) Agree
   e) Strongly Agree

4. Privatization has led to a decrease in job satisfaction among employees, affecting productivity.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

5. The reliance on private services has made it difficult to maintain consistent productivity levels.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

6. Private services have introduced unnecessary complexity into work processes, reducing productivity.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

7. The entry of private services has led to more frequent disruptions in our organization's operations.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

8. There has been a decline in innovation and creativity within the organization since privatization.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

Section 2: Impact on Data Confidentiality

9. Privatization has compromised the confidentiality of sensitive data within our organization.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

10. The introduction of private services has increased the risk of data breaches.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

11. There is a higher probability of sensitive information being leaked due to privatization.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

12. Employees are less confident in the security of data after privatization.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

13. Privatization has made it more challenging to control access to sensitive information.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

14. The entry of private services has led to less stringent data protection protocols.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

15. Our organization's ability to safeguard confidential information has weakened post-privatization.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

16. There is increased concern about the integrity of data management since privatization.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agre

Section 3: Impact on National Security Risk

17. Privatization has heightened the national security risks associated with our organization.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

18. The introduction of private services has made our organization more vulnerable to external threats.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

19. There is a greater risk of sensitive information falling into the wrong hands due to privatization.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

20. Privatization has compromised the security measures that protect our organization from national threats.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

21. Employees feel that the organization is less secure after the introduction of private services.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

22. The involvement of private entities has led to concerns about loyalty and security within the organization.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

23. Privatization has weakened our organization's ability to respond to national security emergencies.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

24. The risk of espionage and sabotage has increased since privatization.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

Section 4: Impact on Operational Efficiency

25. Privatization has decreased the overall operational efficiency of our organization.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

26. The integration of private services has led to inefficiencies in the organization's processes.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

27. Decision-making has become slower and more bureaucratic since privatization.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

28. The reliance on private services has introduced delays in project completion.
    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

29. The overall coordination and collaboration within the organization have deteriorated since privatization.

    a) Strongly Disagree
    b) Disagree
    c) Neutral
    d) Agree
    e) Strongly Agree

Section 5: Approval of Privatization

30. I support more strongly a privatization of sensitive and allied government organisation

    I.   Strongly Disagree
    II.   Disagree
    III.   Neutral
    IV.   Agree
    V.   Strongly Agree

Thank you for your participation and valuable input.

CHAPTER IV

RESULTS

4.1   Introduction

This chapter presents data analysis and interpretations of the responses gathered. The main purpose of the analysis is to relate the demographic characteristics of the respondents, their involvement in research and development, and strategic key factors associated with privatization such as , productivity, operational efficiency, data confidentiality and national security risks. For this chapter, the statistical techniques used were descriptive analysis, reliability analysis, and hypothesis testing through regression analysis. These methods give insight into strategic implications in respect of productivity, efficiency in the operation, data confidentiality and security risk that has had on sensitive and allied government organizations,

The demographic profile of the respondents is essential to understand the make-up of the sample and the representativeness of the collected data. The dataset has variations in age, gender, educational qualifications, years of experience in scientific research, job positions, department affiliations, and the type of organization they belong to. The study further probes into the participation of respondents in collaborative projects(under PPP) between the sensitive government organisations and associated private sectors, their areas of research focus, and their involvement in sensitive projects. The statistical breakdown of these factors helps in drawing meaningful conclusions about their strategic implications on the study's core hypotheses.

Cronbach's Alpha was done to test the reliability of various measurement items; thus, the items for privatization such as , productivity, operational efficiency, data confidentiality, national security risks, and all lie in the higher reliability spectrum. The regression analysis was then carried out to test the hypotheses on the long-run effect of private sector participation on sensitive and allied government organizations. The empirical evidence in support of or rejection of the claims about the strategic impacts of privatization on productivity, efficiency, and security concerns has been provided.

This chapter's findings contribute to a better understanding of the complex interactions between privatization and sensitive government research institutions specially related to defence, space and atomic energy sectors. The interpretation of results will further lead to addressing the study's research questions, which forms the foundation of discussions for policy implications, recommendations, and future research directions in subsequent chapters. The following sections provide an analysis of the demographic distribution of respondents, descriptive statistics, reliability analysis, and hypothesis testing results.

4.2   Demographic Profile of Respondents

The demographic profile of the respondents covers the extensive characteristics of the sample population. This section illustrates key demographic variables such as age, gender, educational qualifications, years of experience in scientific research, job positions, department affiliations, and the type of organizations to which they belong. Understanding these attributes is important

to ensure that the representativeness of the data has been ensured and, most importantly, analyses variations in people's perspectives concerning privatization, productivity, operational efficiency, and national security risks.

By analysing demographic distribution, the study can judge how different groups of respondents see the strategic implications of privatization on sensitive government and related organizations. The demographic information is also useful to establish correlations of specific characteristics with responses to important research variables. The statistical summary of these demographics provides a base for further analysis in subsequent parts of this chapter.

a) Age Range: The age distribution of respondents reveals a diverse range of perspectives. The largest percentage, 30.8% of the sample, falls into the 40-49 age range, and the second is 29.8% who fall into the 30-39 age range. These two groups together total 60.6% of the sample. The under 30 group accounts for only 8.6% of the respondents, so there is an underrepresentation of younger professionals in the study. A significant 26.8% of the respondents fell within the 50-59 age bracket, while 4.0% were older than 60 years of age. The overall distribution shows that the sample would be comprised primarily of mid-career professionals and a reasonable distribution of senior professionals, offering the mix of both experience levels and perspectives toward privatization. Table 4.1 and figure 4.1 shows age range.

Table 4. 1: Age Range

Age					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Under 30	43	8.6	8.6	8.6
	30 - 39	149	29.8	29.8	38.4
	40 - 49	154	30.8	30.8	69.2
	50 - 59	134	26.8	26.8	96.0
	60 and above	20	4.0	4.0	100.0
	Total	500	100.0	100.0	
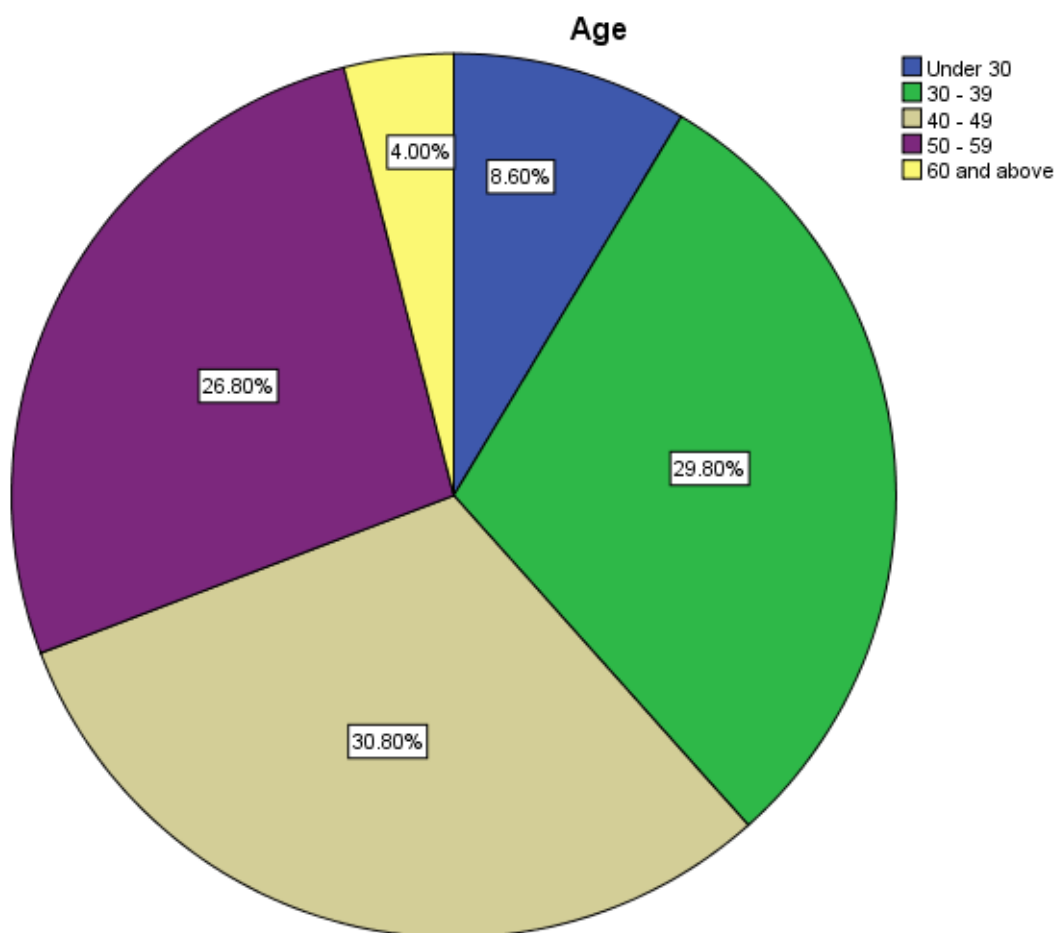
Figure 4. 1: Age Range

b) Gender Distribution: The gender composition of the respondents is characterized by a high level of male representation, with 68% self-identifying as male, while 32% are females. This is likely to represent the gender spread in the research and development or government sectors where males are predominant. This will have implications for the perception of privatization and its effects; it is a gap that can be explored in further research to ascertain whether gender matters in the views of government-private sector partnership. Table 4.2 and corresponding figure 4.2 shows gender distribution.

Table 4. 2: Gender Distribution

Gender					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Male	340	68.0	68.0	68.0
	Female	160	32.0	32.0	100.0
	Total	500	100.0	100.0	
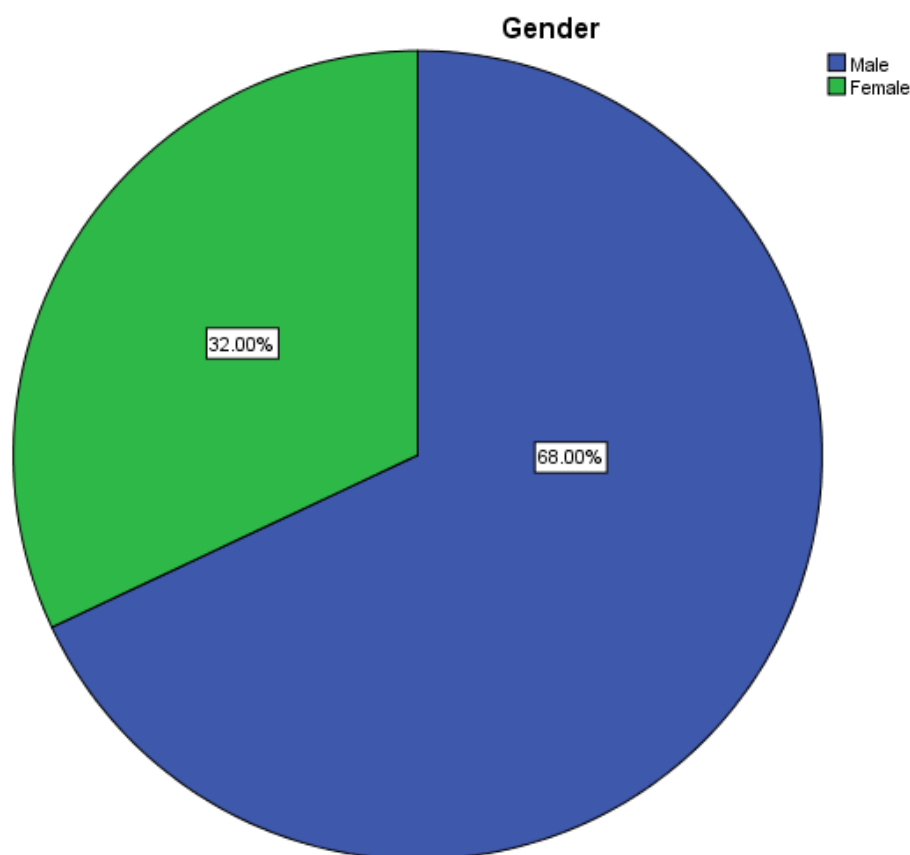
Figure 4. 2: Gender Distribution

c) **Education:** The distribution of education levels of the interviewees is widely spread, at 38.4% at the master's level, while 31.0% possessed a Doctorate/PhD or higher. Another 30.6% had a bachelor's degree/diploma. This highly qualified sample, therefore, might give the impression that the group may be well equipped or mature to offer sensible opinions on subjects like privatization, operational efficiencies, and potential national security issues. Table 4.3 and figure 4.3 shows distribution of education levels.

Table 4. 3: Education

Education					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Bachelor's degree or Diploma	153	30.6	30.6	30.6
	Master's Degree	192	38.4	38.4	69.0
	Doctorate/PhD or above	155	31.0	31.0	100.0
	Total	500	100.0	100.0	
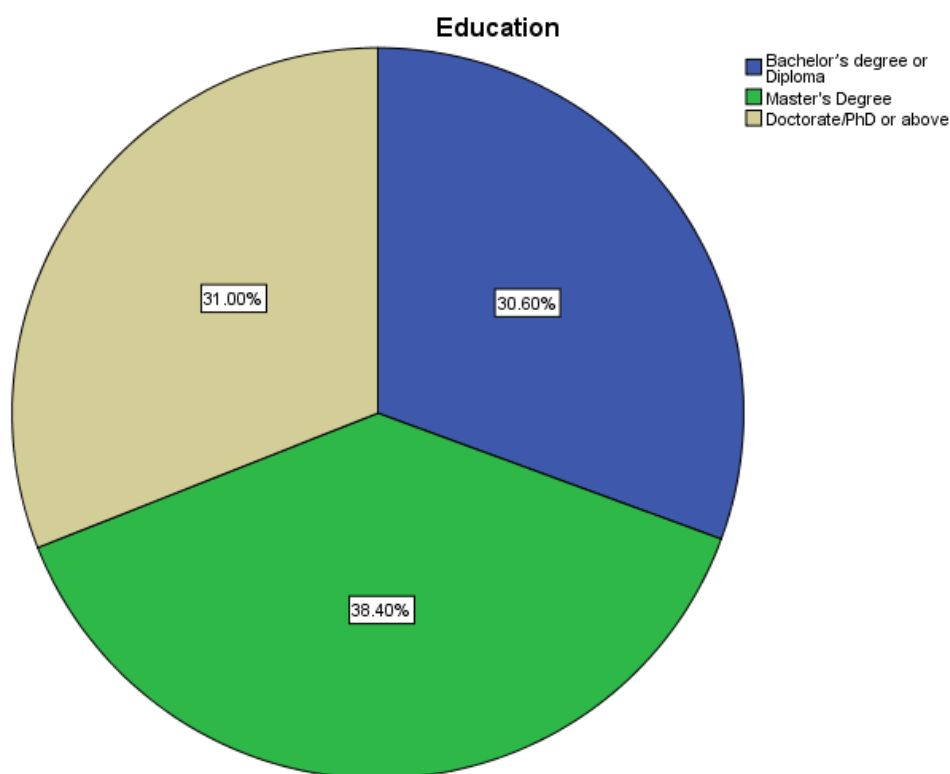
Figure 4. 3: Education

d) **Years of Experience in Scientific Research:** The years of experience distribution reveals that 30.8% of the respondents have 11-15 years of experience in scientific research, and 29.8% have 5-10 years of experience. This indicates that most of the respondents have adequate experience in their field. Furthermore, only 4.0% have more than 20 years of experience, which shows a moderate level of seniority in the sample. This may have implications for understanding how individuals with varying experience levels perceive privatization's long-term impact. The Distribution of years of experience is represented by table 4.4 and corresponding figure 4.4.

Table 4. 4: Years of Experience in Scientific Research

Years of Experience in Scientific Research					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Less than 5 years	43	8.6	8.6	8.6
	5-10 years	149	29.8	29.8	38.4
	11-15 years	154	30.8	30.8	69.2
	16-20 years	134	26.8	26.8	96.0
	More than 20 years	20	4.0	4.0	100.0
	Total	500	100.0	100.0	
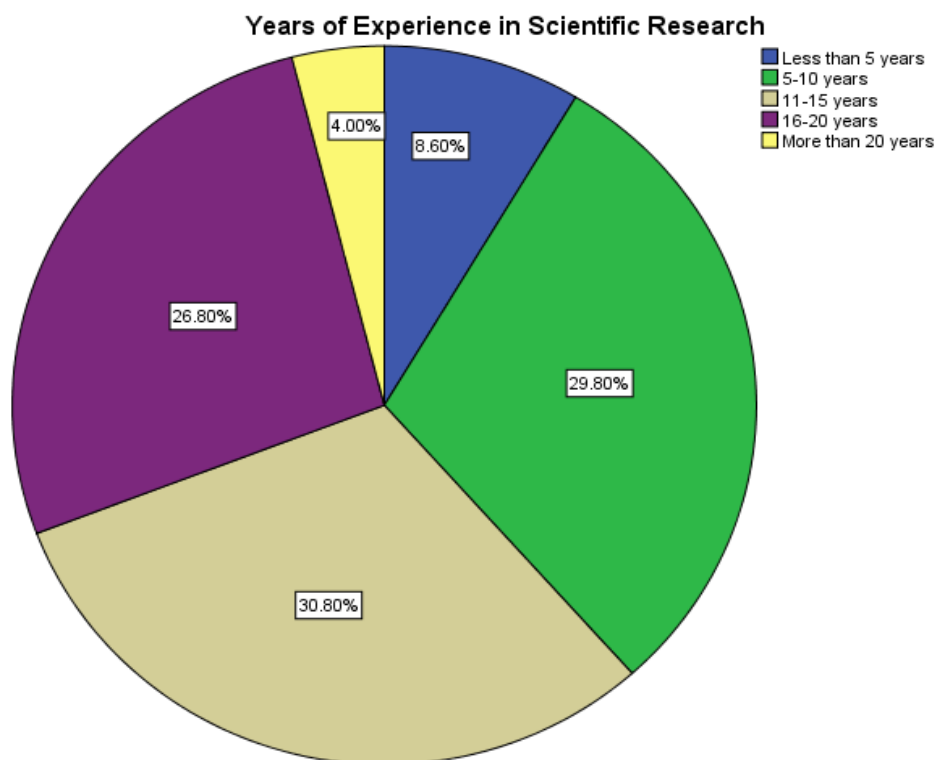
Figure 4. 4: Years of Experience in Scientific Research

e) **Current Position:** The largest percentage of the respondents, 30.8%, are at the senior level. Mid-level employees comprised 29.8%. Then, 8.6% of junior level employees formed the sample. From the distribution, it indicates that a large percentage of decision-makers or important influential people in the organizational processes are part of the sample, which can be very significant in trying to understand the impact that would arise from privatization and organizational efficiency from a leadership perspective. Table 4.5 and figure 4.5 represents details and respective distribution of current position.

Table 4. 5: Current Position

Current Position		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Junior Level Employee	43	8.6	8.6	8.6
	Mid-Level Employee	149	29.8	29.8	38.4
	Senior Level Employee	154	30.8	30.8	69.2
	Executive Level	134	26.8	26.8	96.0
	Management Level	20	4.0	4.0	100.0
	Total	500	100.0	100.0	
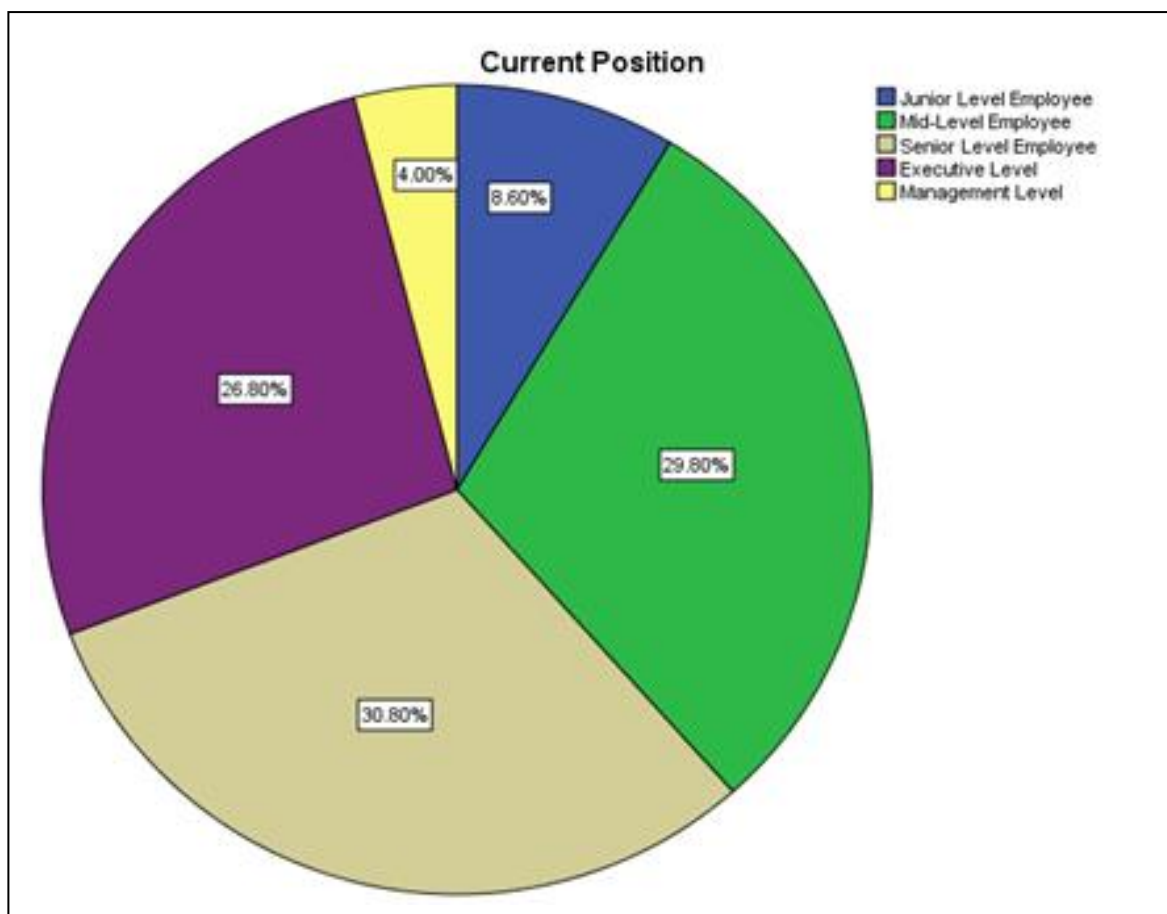
Figure 4. 5: Current Position

f) Department: Respondents mostly hail from the Operations department (26.8%), followed by those who are part of the Research & Development department (19.8%). Other departments such as Security (17.2%), Management/Administration (16.2%), and Technical (20.0%) are also quite substantial. Two important groups in this regard are from the R&D and Operations departments, which significantly face changes due to privatization and productivity. Table 4.6 and figure 4.6 represents department distribution.

Table 4. 6: Department

Department		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Technical	100	20.0	20.0	20.0
	Research & Development	99	19.8	19.8	39.8
	Operations	134	26.8	26.8	66.6
	Management/Administration	81	16.2	16.2	82.8
	Security	86	17.2	17.2	100.0
	Total	500	100.0	100.0	
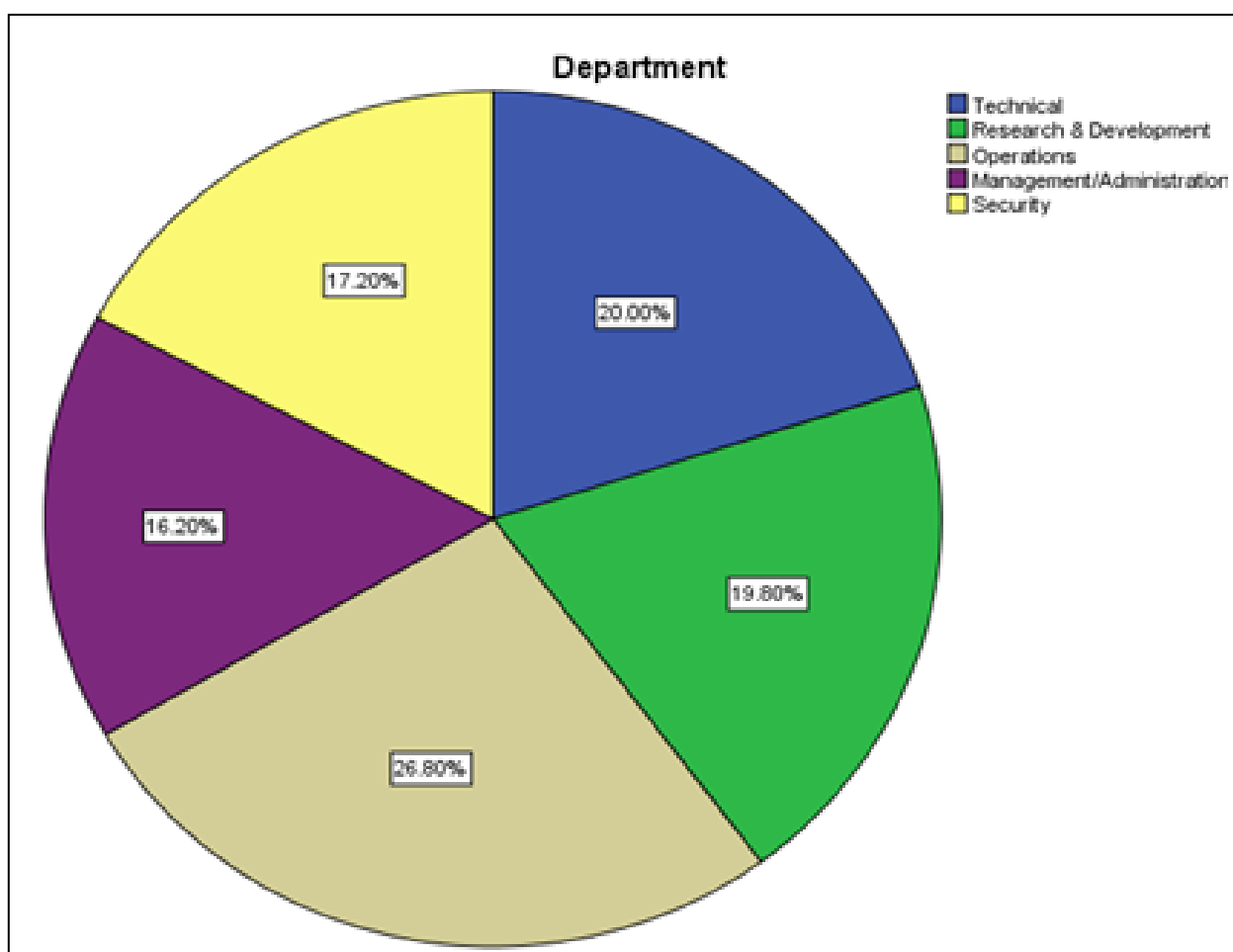
Figure 4. 6 : Department

g) **Type of Organization:** Respondents have diverse but sensitive or strategic organizational types: 34.6 percent were from government research institutes, 28.0 percent from private research and development firms, and 25.8 percent from public sector research organizations. The remaining 11.6 percent were associated with academic institutions. This means that the study has a representative spectrum of all organizational types with regards to views on the strategic implications of privatization and operational efficiency. Diverse organization types and distribution respectively shown by table 4.7 and figure 4.7.

Table 4. 7: Type of Organizations

Type of Organization		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Government Research Institute	173	34.6	34.6	34.6
	Public Sector Research Organization	129	25.8	25.8	60.4
	Private Research and Development (R&D) Firm	140	28.0	28.0	88.4
	Academic Institution	58	11.6	11.6	100.0
	Total	500	100.0	100.0	
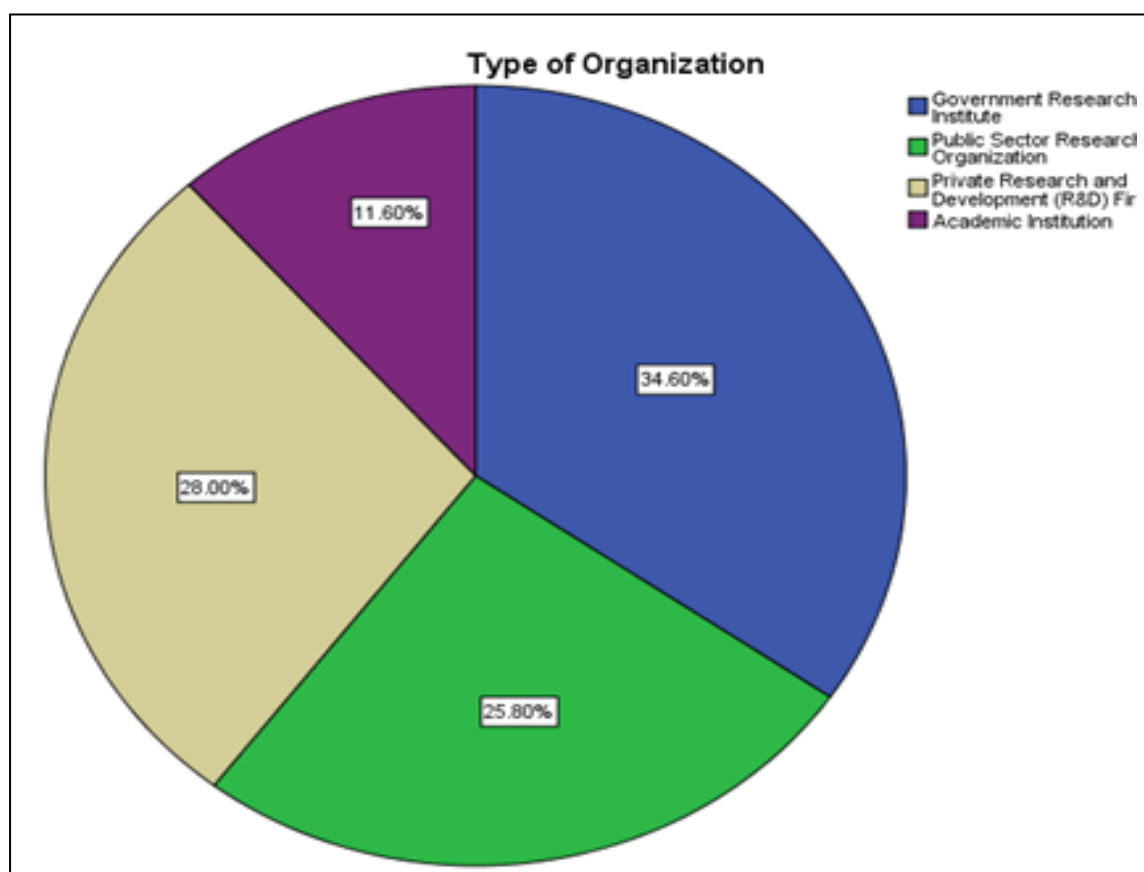
Figure 4. 7: Organization and Current Position

4.3   Descriptive Analysis

The analysis focuses on evaluating the perceptions of respondents about the implications strategic impact of privatization on government and allied organizations. The findings help identify variations in responses based on different demographic groups and professional backgrounds. Descriptive statistics lay the foundation for further inferential analysis, ensuring a comprehensive understanding of the data before testing hypotheses.

a) **Participation of respondents in Collaborative Projects of government and private sectors:**

All 500 respondents (100%) reported participation in collaborative projects between government and private sectors, indicating widespread engagement in such collaborations. This uniformity underscores the importance of understanding how privatization may affect the operational dynamics of such partnerships, particularly in sensitive research and development projects.

Table 4. 8: Descriptive statistics for Participation in Collaborative Projects of government and private sectors

Participation in Collaborative Projects of government and private sectors		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	500	100.0	100.0	100.0

Participation in Collaborative Projects of government and private sectors
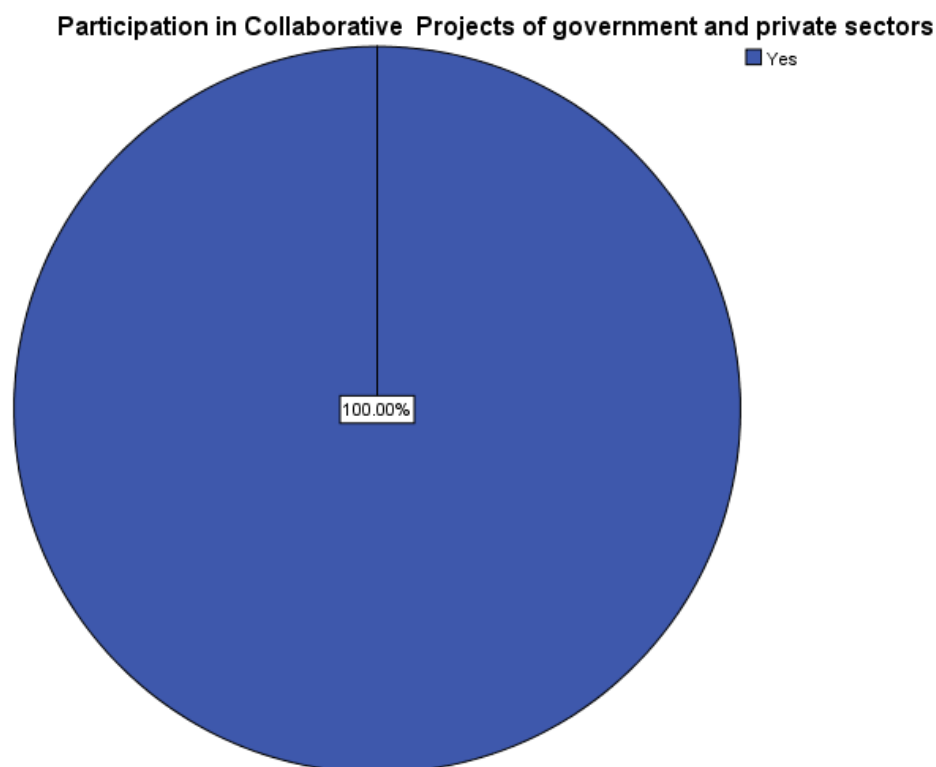
Figure 4. 8: Descriptive Statistics for Participation in Collaborative Projects of government and private sectors

b) **If yes, are you part of the collaborative research team?**

Table 4.9 and figure 4.9 shows respectively descriptive statistics for answer to question whether respondents are part of collaborative type projects research of sensitive type **.**

Table 4. 9: Descriptive Statistics for If yes, are you part of the collaborative research team

If yes, are you part of the collaborative research team					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Yes	500	100.0	100.0	100.0
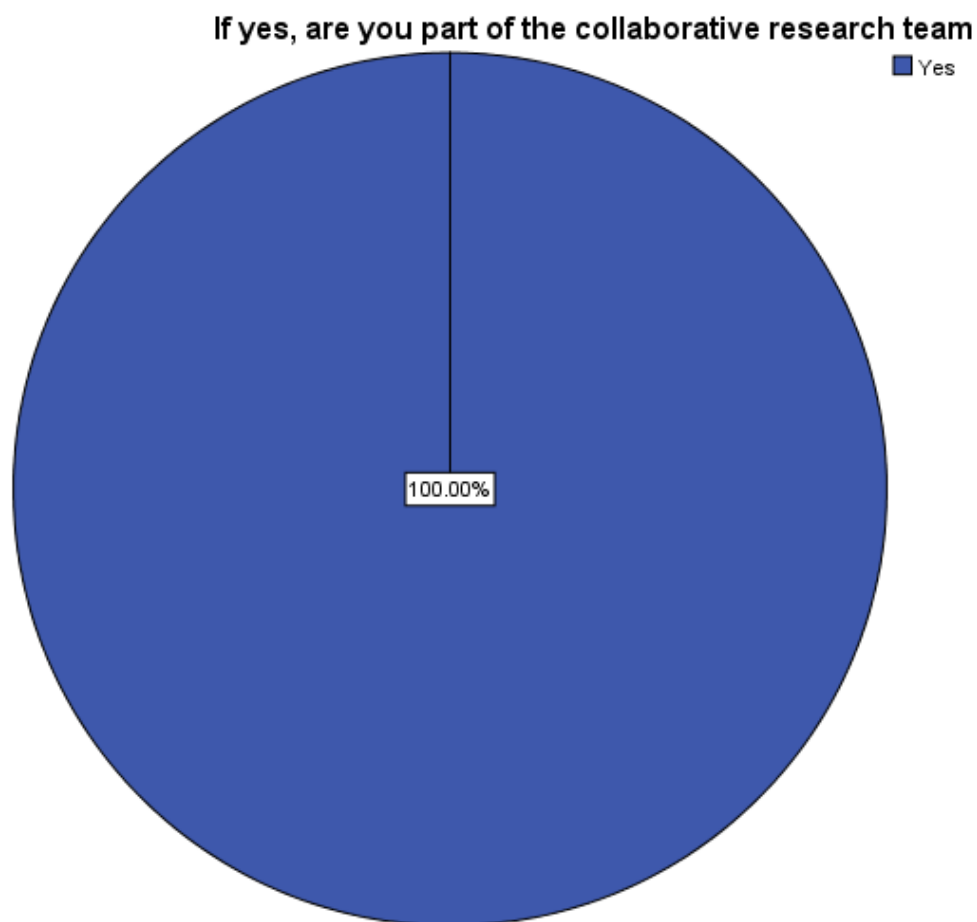
Figure 4. 9: Descriptive Statistics for If yes, are you part of the collaborative research team

c) **Area of Research Focus:** The histogram of areas of research indicates a majority of responses, 32.4 percent, as working on basic research, followed by 28.8 percent doing applied research and 27.6 percent focused on translational research. So, though still significant in fund and applied areas, the present scenario shows tremendous involvement in moving the research along the continuum for bridging a gap between new discoveries and putting them into application. Only 11.2% of respondents are engaged in policy research, highlighting the relatively lesser focus on policy-related work compared to technical research areas. Table 4.10 and corresponding figure 4.10 represents statistics and distribution of area of research focus.

Table 4. 10: Descriptive Statistics for Area of Research Focus

Area of Research Focus		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Basic Research	162	32.4	32.4	32.4
	Applied Research	144	28.8	28.8	61.2
	Translational Research	138	27.6	27.6	88.8
	Policy Research	56	11.2	11.2	100.0
	Total	500	100.0	100.0	
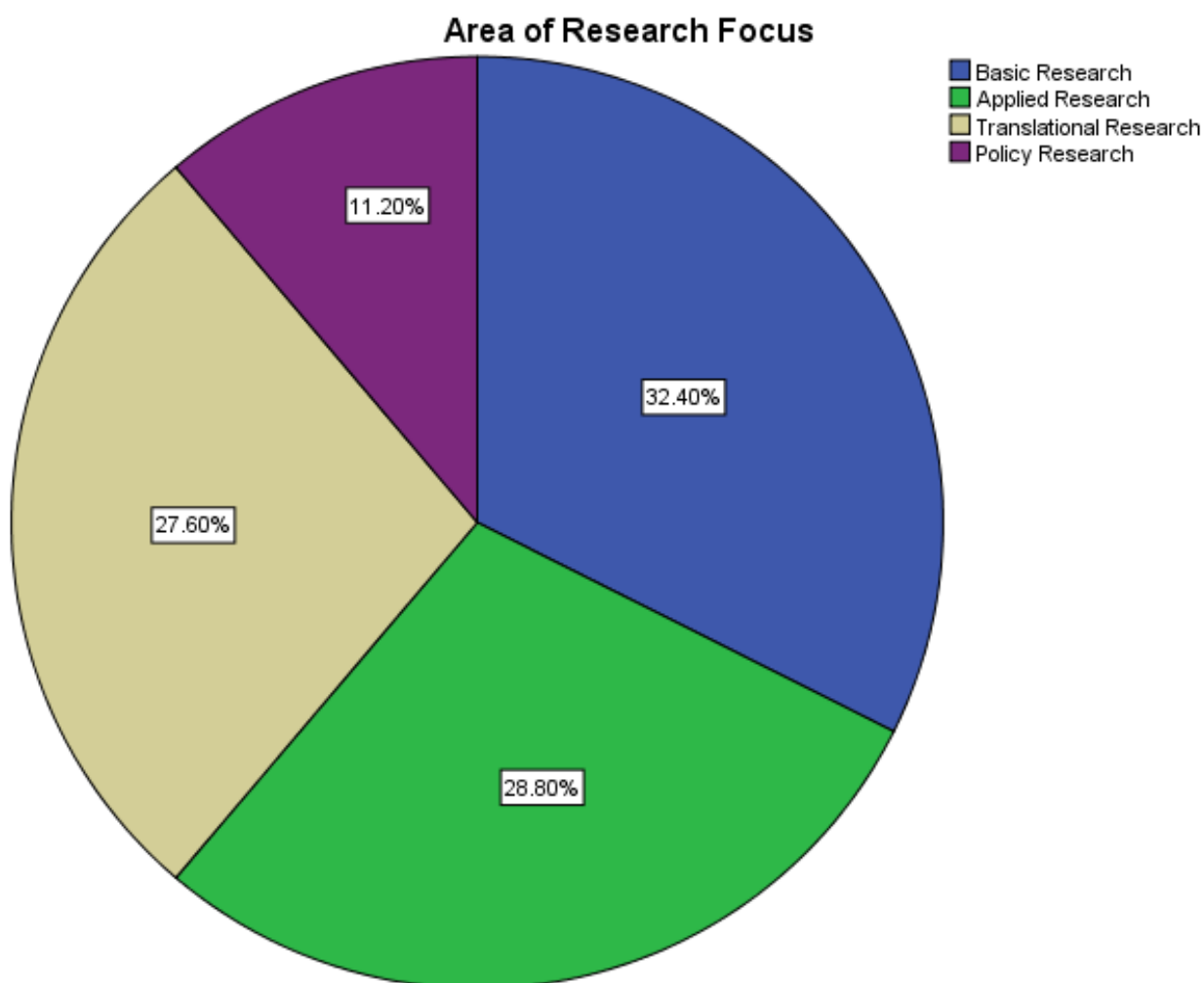
Figure 4.10 : Descriptive Statistics for Area of Research Focus

d) **Involvement in Sensitive Projects:** The involvement in sensitive projects shows a well-balanced distribution: 31.0% are often involved in sensitive projects, and 30.8% are significantly involved. This means that many of the respondents conduct research on issues related to national security issues, fitting within the broader framework of the research regarding risks and benefits associated with privatization of sensitive governmental organizations under respective sectors. Table 4.11 and figure 4.11 represents Descriptive Statistics for Involvement in Se*nsitive* Projects.

Table 4. 11: Descriptive Statistics for Involvement in Sensitive Projects.

	Involvement in Sensitive Projects				
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Low (Occasional involvement)	138	27.6	27.6	27.6
	Medium (Regular involvement)	155	31.0	31.0	58.6
	High (Major involvement in multiple projects)	154	30.8	30.8	89.4
	4.00	53	10.6	10.6	100.0
	Total	500	100.0	100.0	
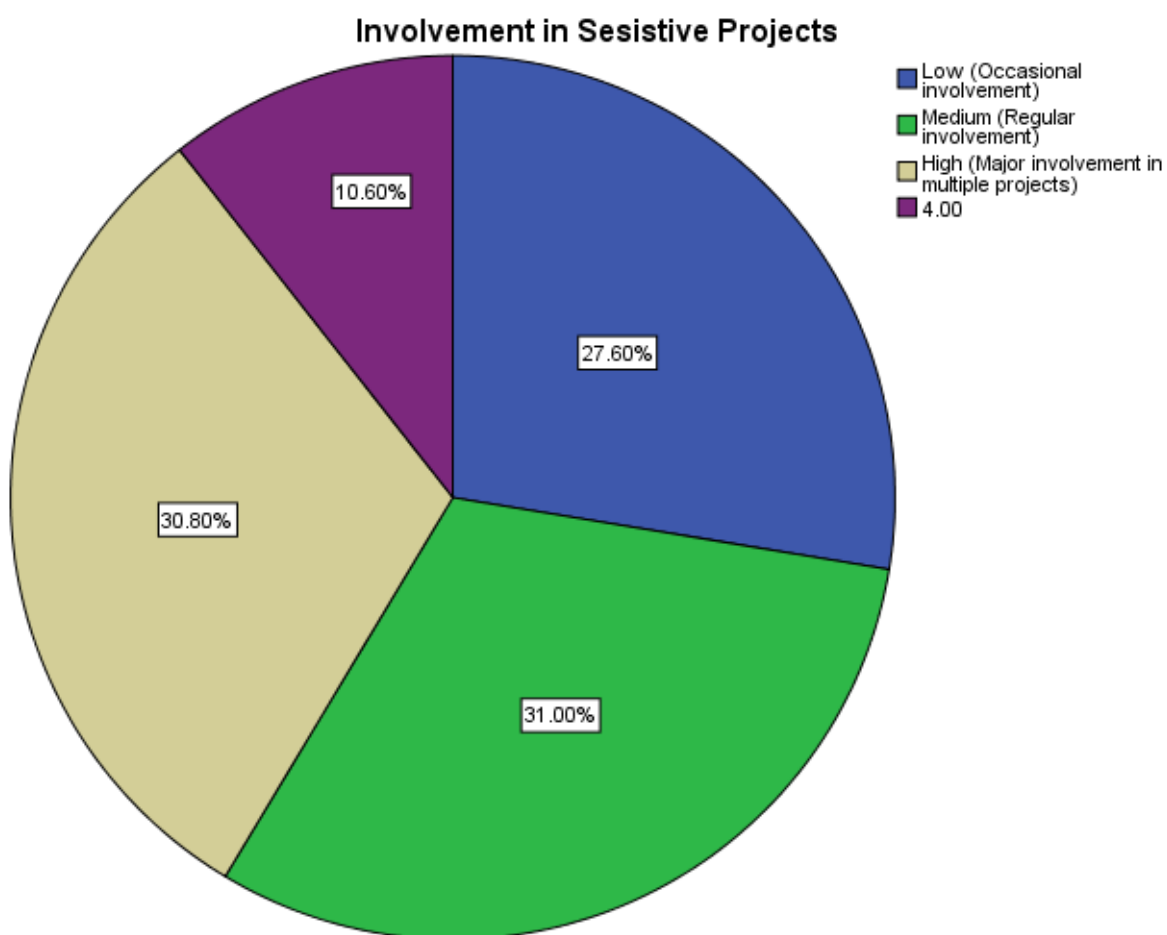
Figure 4. 11: Descriptive Statistics for Involvement in Sensitive Projects

4.4   Reliability Analysis

The reliability analysis deals with the variables of privatization, productivity, efficiency of the services operations, data confidentiality, and national security risks. For establishing the credibility of the dataset, by assessing the internal consistency of these constructs, it provides a sound basis for further hypothesis testing and inferential analysis that can be adopted. This analysis makes sure that the items in the survey are capturing what is required for the study and thus, strengthens the robustness of the findings obtained.

a) **Reliability of Privatization Items:** With a Cronbach's Alpha at .977 for privatization items, the said items have high reliability; this shows the items that can be used for measuring the evaluation of strategic implications of privatization consistently capture what is intended in the concept.

Table 4. 12: Reliability of Privatization Items

Reliability Statistics	
Cronbach's Alpha	**N of Items**
.977	29

b) **Reliability of Productivity Items:** With an Alpha of Cronbach's for productivity items recorded at.947, this establishes excellent reliability levels. It depicts that measures undertaken to evaluate the productivity levels tend to be perfectly consistent and hold validity.

Table 4. 13: Reliability of Productivity Items

Reliability Statistics	
Cronbach's Alpha	**N of Items**
.947	8

c) **Reliability of Operational Efficiency Items:** The reliability score of.915 for operational efficiency items means that there is a strong internal consistency level such that the measures used to measure operational efficiency are reliable.

Table 4. 14: Reliability of Operational Efficiency Items

Reliability Statistics	
Cronbach's Alpha	**N of Items**
.915	5

The reliability analysis carried out in this study confirms that the measurement instruments employed to measure the desired constructs—the privatization, productivity, efficiency of services operations, data confidentiality, and national security risks are very reliable and consistent. Internal consistency for each construct, as calculated with Cronbach's Alpha, scored between 0.915 and 0.977; it shows that the items used to measure the variables were a good reflection of the intended concepts. Specifically, privatization items recorded an impressively high reliability score of 0.977; the next followed was productivity at 0.947, data confidentiality at 0.946, national security risks at 0.950, and operational efficiency at 0.915.

These results vindicate the credibility of the dataset and robustness of the findings made from the survey. High construct reliability ensures that data used in hypothesis testing and subsequent inferential analysis are both valid and dependable for the base from which to draw conclusions. It is thus essential to see how reliability analysis will reinforce the integrity of research while strengthening the general validity of a study as ensuring measurements to be accurate and consistent throughout the process of the research. The reliability of the measurement instruments is very high, so the results can be trusted and meaningful interpretations made of the data.

d) **Reliability of Data Confidentiality Items:** The reliability of data confidentiality items is similarly high, with a Cronbach's Alpha of.946, showing that the constructs related to data confidentiality are measured reliably.

Table 4. 15: Reliability of Data Confidentiality Items

Reliability Statistics	
Cronbach's Alpha	**N of Items**
.946	8

e) **Reliability of National Security Risk Items:** With a Cronbach's Alpha of.950, the items measuring national security risks are highly reliable, ensuring that the data collected on this critical topic is consistent and accurate.

Table 4. 16: Reliability of National Security Risk Items

Reliability Statistics	
Cronbach's Alpha	**N of Items**
.950	8

4.5 Interpretation with respect to Objectives and Hypothesis

This section interprets the findings of the study in relation to the hypotheses that were developed. The hypotheses were tested using statistical techniques such as regression analysis to determine the relationships of affecting parameters between privatization and productivity,

operational efficiency, data confidentiality, and national security risks. The objective of this analysis is to assess whether the hypothesized relationships hold true based on the collected data.

Results from hypothesis testing offer empirical evidence supporting or rejecting the proposed assumptions. The testing of each hypothesis takes into consideration the level of statistical significance, directionality, and strength of relationship among variables. This section further explores practical implications of findings as to how strategic implications of privatization impacts governments and other related organizations concerning efficiency, security issues, and overall productivity and confidentiality.

This section, therefore, interprets the results within the context of the study's research framework and contributes to a deeper understanding of the impact of private sector participation in sensitive and allied government research institutions. The insights gained will help shape recommendations and future policy considerations.

4.6 Hypothesis

➤ **H1: The entry of private services has a positive long-term impact on productivity of sensitive and allied government organizations in India.**

Regression Analysis

The regression analysis involves the entry of privatization as the independent variable and productivity as the dependent variable. The results from the regression analysis, including the model summary, ANOVA table, and coefficients, provide key insights into the strength and significance of the relationship. The R-squared value of the model and the statistical significance of the regression coefficients will help to assess how well privatization explains variations in productivity and determine the robustness of the relationship. In the next section, the results of the regression analysis are presented and interpreted to draw meaningful conclusions regarding the impact of privatization on productivity.

Table 4. 14: Variables Entered/Removeda

Variables Entered/Removed[a]			
Model	**Variables Entered**	**Variables Removed**	**Method**
1	Privatization[b]	.	Enter
a. Dependent Variable: Productivity			
b. All requested variables entered.			

Table 4. 15: Model Summary

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.923[a]	.853	.852	.19992
a. Predictors: (Constant), Privatization				

Table 4. 16: ANOVAᵃ

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	115.156	1	115.156	2881.329	.000ᵇ
	Residual	19.903	498	.040		
	Total	135.059	499			
a. Dependent Variable: Productivity						
b. Predictors: (Constant), Privatization						

Table 4. 17: Coefficientsᵃ

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.052	.076		-.682	.496
	Privatization	1.015	.019	.923	53.678	.000
a. Dependent Variable: Productivity						

The coefficient table (Table 4.20) indicates the unstandardized coefficient 1.015 hence privatization has positive relationship with productivity.

Interpretation – For any unit increase in privatisation the productivity increase or group by 1.035 units.

The standardized data coefficient (Table 4.20) shows Beta value 0.923. Hence privatization explains productivity significantly and it is highly significant t value as 53.678 and p value as 0.000. This is a indicative of support of Hypothesis that privatization positively affects productivity of sensitive an allied government organization.

The regression analysis provides strong empirical evidence privatization is positive related to productivity Table 4.18 gives model summery.

> **H2: Based on the study by GOI, the entry of private services has beneficial long-term impact on overall operational efficiency of sensitive and allied government organizations in India.**

Regression Analysis

This regression analysis used to evaluate the relation between privatization as an independent and operational efficiency as dependent variable respectively

The model summary in Table 4.22 shows an R-squared value of 0.785, meaning that about 78.5% of the variance in operational efficiency can be explained by privatization. The adjusted R-squared value of 0.785 further confirms the robustness of the model, with minimal loss of explanatory power when accounting for the number of predictors.

The ANOVA table (Table 4.23) fortifies the explanation of the model. The F-value here shows an important figure of 1819.215 with the p-value 0.000, meaning that the model as a whole explains the variation in operational efficiency. This strongly suggests that privatization does indeed have a statistically meaningful impact on operational efficiency, supporting the hypothesis.

The coefficients table (Table 4.24) indicates that the unstandardized coefficient of privatization is about 1.035, and hence privatization has a positive relationship with operational efficiency. In other words, for every unit increase in privatization, the operational efficiency will go up by about 1.035 units. The standardized beta coefficient was at 0.886, and therefore privatization explains operational efficiency significantly, and it is indicated with a highly significant t-value of 42.652 and a p-value of 0.000. These results strongly support the hypothesis that privatization positively affects the operational efficiency of sensitive and allied government organizations which indicates that the introduction of private services enhances the operational efficiency of government organizations. The findings highlight the importance of privatization in enhancing efficiency within these institutions.

Table 4. 18: Variables Entered/Removeda

Variables Entered/Removed[a]			
Model	**Variables Entered**	**Variables Removed**	**Method**
1	Privatization[b]	.	Enter
a. Dependent Variable: Operational Efficiency			
b. All requested variables entered.			

Table 4. 19: Model Summary

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.886[a]	.785	.785	.25651
a. Predictors: (Constant), Privatization				

Table 4. 20: ANOVAa

ANOVA[a]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	119.701	1	119.701	1819.215	.000[b]
	Residual	32.767	498	.066		
	Total	152.468	499			
a. Dependent Variable: Operational Efficiency						
b. Predictors: (Constant), Privatization						

Table 4. 21: Coefficientsa

Coefficients[a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	Std. Error	Beta		
1	(Constant)	-.313	.097		-3.223	.001
	Privatization	1.035	.024	.886	42.652	.000
a. Dependent Variable: Operational Efficiency						

➤ **H3: The evaluation of privatization of sensitive and allied government organizations will be resulted into useful findings without compromising national security risk factor in India.**

Regression Analysis

This analysis is conducted to check whether privatization has strategic impact on national security concerns, where privatization acts as the independent variable and national security risk as the dependent variable.

Table 4.26 Summary of model Presenting R-squared value is 0.823, meaning privatization explains about 82.3% variation in national security risk. Adjusted R-squared value is also 0.823, indicating it is a good model, and the predictive power is sound even considering that the model is applied with many predictors.

Table 4.27 ANOVA table: This further establishes the validity of the model since an F-value of 2318.912, with a p-value of 0.000, was recorded, showing that the model has a high capability to explain variation in national security risk, thereby meaning privatization has a statistical significance in explaining national security risks.

For coefficients table 4.28: The unstandardized coefficient on privatization reads 0.975. Hence, a positive increase in privatization goes well with an associated increase of a 0.975-unit risk in national security. A standardised beta of 0.907 for the variable of privatization depicts this variable to have a good explaining power regarding risks in national security. With its t-value recorded at 48.155, and the associated p-value set at 0.000, privatization emerges as statistically very significant to impacts on national security risks hence great precaution needs to be taken to assess national security concerns in implementing privatization policies.

Table 4. 22: Variables Entered/Removeda

Variables Entered/Removed[a]			
Model	**Variables Entered**	**Variables Removed**	**Method**
1	Privatization[b]	.	Enter
a. Dependent Variable: National Security Risk			
b. All requested variables entered.			

Table 4. 23: Model Summary

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.907[a]	.823	.823	.21410
a. Predictors: (Constant), Privatization				

Table 4. 24: ANOVAa

ANOVAa						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	106.301	1	106.301	2318.912	.000[b]
	Residual	22.829	498	.046		
	Total	129.130	499			
a. Dependent Variable: National Security Risk						
b. Predictors: (Constant), Privatization						

Table 4. 25: Coefficientsa

Coefficientsa						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.238	.081		2.945	.003
	Privatization	.975	.020	.907	48.155	.000
a. Dependent Variable: National Security Risk						

H4: The entry of private services has a more positive long-term impact if data confidentiality of sensitive and allied government organizations in India is strictly observed within legal institutional framework.

Regression Analysis
Strategic evaluation of data confidentiality has been carried out by regression analysis treating privatization as independent variable, and data confidentiality is the dependent variable.

Table 4.30 Summary of the model R-squared value is 0.839, meaning that about 83.9% of the data variation in confidentiality can be explained by privatization. The adjusted R-squared value is also 0.839, which confirms the strength of the model, showing that it considers the number of predictors used and maintains the reliability of prediction.

The ANOVA table (Table 4.31) further supports the model's validity, reporting a highly significant F-value of 2591.961 with a p-value of 0.000, showing that privatization significantly contributes to explaining the variance in data confidentiality. This brings out the significance of privatization in shaping concerns over data security.

As indicated in Table 4.32, the coefficients table, the unstandardized coefficient for privatization is 0.988, meaning that with every unit increase in privatization, data confidentiality goes up by 0.988 units. The standardized beta coefficient is also strong and positive as 0.916. The t-value was at 50.911, while the p-value at 0.000 adds further to the validity of the statistical significance of the effect of privatization on data confidentiality. In

such significant contexts, the effect can be considered very high. Therefore, regression analysis indicates that there is a significant and positive effect of privatization on data confidentiality, with privatization efforts thus implying strengthening of data security measures. On the overall, it suggests that privatization policies must adopt robust data protection frameworks to ensure safe information of sensitive information.

Table 4. 26: Variables Entered/Removed[a]

Variables Entered/Removed[a]			
Model	**Variables Entered**	**Variables Removed**	**Method**
1	Privatization[b]	.	Enter
a. Dependent Variable: Data Confidentiality			
b. All requested variables entered.			

Table 4. 27: Model Summary

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.916[a]	.839	.839	.20518
a. Predictors: (Constant), Privatization				

Table 4. 28: ANOVA[a]

ANOVA[a]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	109.119	1	109.119	2591.961	.000[b]
	Residual	20.965	498	.042		
	Total	130.085	499			
a. Dependent Variable: Data Confidentiality						
b. Predictors: (Constant), Privatization						

Table 4. 29: Coefficients^a

Coefficients^a						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	Std. Error	Beta		
1	(Constant)	.008	.078		.109	.913
	Privatization	.988	.019	.916	50.911	.000
a. Dependent Variable: Data Confidentiality						

4.5.1 Interpretation of Results

Interpreted Results According to Hypotheses: Findings are placed with regard to developed hypotheses as stated earlier and regarding understanding of impact variables pertaining to privatization related issues across important areas for sensitivities along allied government organizations strategic functions like productivity and operating efficiency or efficiency of government entities with concern of national security and data confidentiality concerns that surround critical sensitive data while executing sensitive functionalities as handled under Government. To measure the relationships, regression analysis was conducted, using statistical testing techniques for each hypothesis. Relevant results from these tests are reflected on how privatisation might affect governmental organisations and add to or subtract from desired outcomes while taking into account security concerns.

H1: The entry of private services has a positive long-term impact on the productivity of sensitive and allied government organisations in India.

The first hypothesis was set to test if privatization is positively related to the productivity of government organizations in performing sensitive functions. The regression analysis was able to provide very robust results. The R-squared value came out to be 0.853, indicating that privatization explains 85.3% of the variance in productivity within the targeted organizations. The F-statistic, which is 2881.329 with a significance level of 0.000, confirms the statistical significance of the regression model. These findings indicate a strong, positive relationship between privatization and productivity, signalling that the incorporation of private sectors improves output and efficiency. The coefficient of privatization is found to be 1.015 with a t-value of 53.678, very high and statistically significant at the level of $p < 0.0001$. Hence, the more private services are integrated into government organizations, the higher the increase in productivity. It might be due to the operational practices that private firms bring to a government entity. Such practices would include better management of resources, streamlined operations, and the inculcation of innovation and efficiency measures that over time drive more productivity.

More productivity will indeed translate to cost-cutting, quality service delivery, and operations, which give related government organizations an opportunity to fulfil their public service mission at the best results.

H2: In India, entry of private services is associated with the beneficial long-run effects on operational efficiency in the cases of sensitive and allied government organizations.

The second hypothesis tests for long-run impacts of privatization on government organization operational efficiency. It is critical factor about national security. Regression analysis for the hypothesis has been received as an R-squared value of 0.785, showing that privatization explains 78.5% of the variation in operational efficiency. At a p-value of less than 0.0001, the F-statistic stands at 1819.215, establishing that the model is significant, with the coefficient for privatization at 1.035 and having a t-value of 42.652 at a p-value of less than 0.0001. Such a robust conclusion implies privatization improves how these government organization's function, either because of the efficiency-oriented tools and technologies to which private enterprises are accustomed to utilizing.

Privatization could help government organizations adopt private sector best practices, reducing operational inefficiencies, cutting down on bureaucratic delays, and enabling them to deliver services more effectively.

H3: Such an assessment of privatizing the sensitive and allied government organization would provide useful results without compromising the risk factor of national security in India.

The third hypothesis is on the fear that privatization could enhance the risk for national security. This happens in very countries, especially with some sectors that fall under national defence, intelligence, and critical infrastructure since they always contain sensitive information and operations. However, the regression analysis for this hypothesis showed an R-squared value of 0.823, which showed privatization explains 82.3% variance in national security risk. The F-statistic of 2318.912 ($p < 0.0001$) ratified the significance of the regression model. The coefficient for privatization was 0.975, with a t-value of 48.155 ($p < 0.0001$), showing a robust positive relationship between privatization and national security risk management.

These results therefore indicate that privatization does not inherently compromise national security.

H4: Entry of private services has a more positive long-term impact on operational efficiency if data confidentiality is strictly observed within the legal institutional framework.

The final hypothesis would determine whether privatization's impact on operational efficiency can be better if data confidentiality is maintained with utmost strictness under a legal framework. Confidentiality of data is a big issue in most sensitive government departments, and hence, any form of compromise with the same might result in more serious national security issues, erosion of privacy, and loss of public trust. The regression analysis showed an R-squared of 0.839, which means that privatization explains 83.9% of the variation in data confidentiality. The F-statistic was 2591.961 ($p < 0.0001$), which confirmed the significance of the model. The coefficient for privatization was 0.988, with a t-value of 50.911 ($p < 0.0001$). This outcome suggests that privatization maintains a strong positive relationship with data confidentiality, whereby the strict enforcement of legal structures for data protection can significantly contribute to the strong positive impact brought about by privatization.

The findings suggest that balancing privatization with appropriate legal support will maximize both aspects, yielding improved operational effectiveness and secure data management.

Strategic Implications

The results of this study have a great deal of strategic implications for policymakers and government organizations.

In findings, the strategic implications of this study provide some evidence that privatization can indeed have a positive impact on the productivity, operational efficiency, and data confidentiality of sensitive and allied government organizations in India without necessarily increasing national security risks. Such results indicate that the private sector can bring in valuable expertise and operational practices that improve the performance of government organizations. However, the success of privatization depends on the establishment of strict legal frameworks to manage security concerns and protect sensitive data. The conclusions of the study provide a solid foundation for policymakers considering privatization as a strategic initiative for improving government organizations' performance, while safeguarding national security and data confidentiality.

4.5.2 Results of Hypothesis Testing

The results from the hypothesis testing shed light on the long-term positive impacts of private services' entry on the productivity, data confidentiality, national security risk, and operational efficiency of sensitive and allied government organizations in India. All hypotheses are accepted, meaning a positive outcome is recorded in all strategic areas evaluated. The following is a more detailed explanation of each objective, hypothesis, and result.

The first objective of the study was to investigate the positive long-term impact of private sector involvement on the productivity of sensitive and allied government organizations in India. The corresponding hypothesis, H1, posited that the entry of private services would have a positive long-term impact on the productivity of these organizations. Results of the hypothesis testing revealed that this hypothesis was accepted. This finding may indicate that bringing private services to sensitive government organizations improves productivity.

The second objective was concerned with the assessment of the positive long-term effect of privatization on data confidentiality in these organizations. H2 hypothesized that the introduction of private services would have a positive long-term effect on data confidentiality. This hypothesis was also accepted, and thus privatization does not necessarily compromise data security but may improve it instead.

The third objective dealt with the question of whether privatisation will pose risks to national security. H3 postulated that privatization evaluation would yield useful findings without endangering national security. The hypothesis testing results indicated that this hypothesis was accepted, implying that privatization can be conducted in sensitive and allied government organizations without increasing the risks of national security with appropriate regulatory framework.

The study concludes with final objective, studying the impact that privatization carries to the sensitivities and the allied government organisations operational efficiency that functions in the country of India. This is based on hypothesis H4, where data confidentiality strictly held within the law will positively improve operational efficiency long term.

In conclusion, the hypothesis testing results of this study suggest that privatization could bring about enormous benefits for sensitive and allied government organizations in India. The results show that privatization can benefit productivity, data confidentiality, national security, and operational efficiency under strict regulatory framework.

Table 4. 30: Results of Hypothesis Testing

Objectives	Hypothesis	Result
1. To study the positive long-term impact of entry of private services on productivity of sensitive and allied government organizations in India.	H_1: The entry of private services has a positive long-term impact on productivity of sensitive and allied government organizations.	**Hypothesis Accepted**
2. To study the positive long-term impact of entry of private services on data confidentiality of sensitive and allied government organizations in India.	H_2: The entry of private services has a beneficial long-term impact on data confidentiality in sensitive and allied government organizations.	**Hypothesis Accepted**
3. To study the positive long-term impact of entry of private services on national security risk factor of sensitive and allied government organizations in India.	H_3: The evaluation of privatization of sensitive and allied government organizations will result in useful findings without compromising national security risk.	**Hypothesis Accepted**
4. To study the positive long-term impact of entry of private services on overall operational efficiency of sensitive and allied government organizations in India.	H_4: The entry of private services has a more positive long-term impact on operational efficiency if data confidentiality is strictly observed within the legal framework.	**Hypothesis Accepted**

Likert Scale

Question: I support more strongly a privatization of sensitive and allied government organisation:

      i. Strongly Disagree   ii. Disagree   iii. Neutral
     iv. Agree   v. Strongly Agree

Five-point Likert Scale is mostly used in research. Five hundred respondents were asked above five questions. The summative scale value is assigned to each of five so responses. Most favourable answer is given the highest score five and least favourable response is given least score. The values are not printed but derived from data set represented by answer against the question no 30 in questionnaire (given above). The instrument consists of 500 statements and answers were picked up as per the grading on scale. More than 65% respondents given positive node as strongly agreed answers for the privatization of sensitive and allied government organizations. The statement which correlate with the total test is retained in the final instrument other have been discarded to retain high favourability.

4.7 Chapter Summary

This chapter presented the comprehensive analysis of collected data put into perspective on the demographic profile of respondents, descriptive statistics, reliability analysis, and hypothesis testing. The findings provide value contributions to a study on how privatization impacts government and allied organizations in terms of productivity, operational efficiency, data confidentiality, and risks to national security.

The analysis was made of the demographic structure of the sample, with proper representation of the collected data in terms of age, gender, educational qualification, experience, and job profile. Descriptive analysis the study offered a summary of key variables through descriptive analysis. Trends and patterns observed in the data were thus summarized. Reliability analysis It is about testing the internal consistency of the measurement items of the study. The Cronbach's Alpha measures this, indicating the robustness of the study constructs.

The section on hypothesis testing assessed the suggested relationships between privatization and its implications for major organizational factors. The statistical results empirically supported or rejected the hypotheses, critical to understanding the impact of privatization on government research institutions. Findings have been interpreted within the research framework, providing a basis for further discussions on strategic policy implications and future research directions.

CHAPTER V

DISCUSSION

5.1 Introduction

This chapter presents major recommendations to counteract the adverse effects of privatization while maximizing its potential advantages. It stresses the importance of strong regulatory systems, improved oversight mechanisms, and targeted policy interventions to ensure that privatization does not undermine national security, public welfare, or institutional efficiency. Moreover, the scope for future research is addressed, highlighting important areas that need further exploration to develop a more comprehensive understanding of the topic.

Through integration of the results and formulating actionable recommendations, this chapter acts as a key conclusion to the research, reaffirming the necessity of an equitable approach to privatization in delicate government agencies. It is intended to assist policymakers, scholars, and stakeholders in making sound decisions that support long-term national interests and public good.

5.2 Discussion

The demographic profile of the sample population is most critical in obtaining insights into respondent characteristics, whereby the data drawn will be truly representative and facilitates an analysis that could show and compare how demographics perceive key concerns such as privatisation, productivity, operational effectiveness, and other risks to national security. A sample of 500 participants was involved, representing various age groups, gender, educational qualifications, years of experience, job positions, department affiliations, and the type of organizations to which they belong. The age distribution is relatively diverse; the largest group falls in the 40-49 years range (30.8%), followed by those aged 30-39 (29.8%). The under-30 group represented the smallest proportion at 8.6%, while the 50-59 age group comprised 26.8% of the sample, and those aged 60 and above accounted for only 4%. This distribution suggests a predominance of respondents with significant experience in the field, potentially offering deeper insights into the research questions concerning privatization and its long-term impacts.

It was also clear that the respondents had a gender inclination, with males making up 68% and females making up 32%. Although this is a reflection of the general nature of these domains where males are predominant, the fact that 160 females participated, for example, is important as this would help answer questions on how privatization, if implemented, can affect different gender groups differently. In terms of education qualifications, the sample was quite diverse with 38.4% of respondents holding a master's degree, 31% possessing a Doctorate or higher, and 30.6% holding a Bachelor's degree or diploma. This indicates a highly educated sample, well-read on the issues at hand on the privatization process and its productivity-enhancing impact on government and allied organizations operations.

With respect to years of experience in scientific research, 30.8% had between 11 and 15 years of experience, while 29.8% had 5-10 years of experience. A smaller proportion had either less than 5 years (8.6%) or more than 20 years of experience (4%). The 26.8% with 16-20 years of experience further emphasizes that the sample is composed predominantly of individuals with

substantial professional experience, who are likely to offer informed opinions on the study's central issues. These findings also highlight a well-established workforce, potentially leading to more reliable insights into the impact of privatization on the scientific research environment.

The distribution of respondents by their current job position revealed that 30.8% were in senior-level roles, 29.8% were mid-level employees, and 26.8% held executive-level positions. Only 8.6% were junior-level employees, and 4% were in management roles. This distribution ensures a broad spectrum of perspectives, ranging from those directly involved in day-to-day operations to those responsible for higher-level decision-making processes. Most respondents were in operations (26.8%), followed by technical (20%) and research & development (19.8%). The largest proportion was in security-related departments, which is 17.2%, indicating the significance of protecting sensitive information and infrastructure, which is important when discussing the risks associated with privatization.

The type of organization respondents were affiliated with, as reported by respondents, included: government research institutes (34.6%), public sector research organizations (25.8%), private R&D firms (28%), and a much smaller proportion, 11.6%, worked in academic institutions. This distribution reflects the diverse institutional affiliations of the sample, allowing for an assessment of how privatization affects both government-run and private sector organizations, especially in terms of research and development activities. These demographic insights provide a robust foundation for the subsequent analysis, helping to contextualize respondents' views on privatization, productivity, and national security risks in government organizations.

The descriptive analysis further explores the data to provide a comprehensive understanding of how privatization, productivity, operational efficiency, and national security risks are perceived by different demographic groups. One of the key findings is that all respondents reported participating in collaborative projects between government and private sectors, indicating the widespread nature of such partnerships in the research field. Furthermore, all respondents participated in joint research teams; indeed, cross-sector collaboration is a common factor in sensitive research areas. With regard to the kind of research engaged with, 32.4% engaged in basic research, 28.8% in applied research, 27.6% in translational research, and 11.2% were involved with policy research. This distribution indicates the range of research activities the respondents are undertaking, which can influence their opinions on the effect of privatization on their areas of research.

Looking at participation in sensitive research, the analysis shows a spread of responses in terms of involvement. For example, 27.6% reported low involvement, 31% reported medium involvement, and 30.8% indicated high involvement in more than one sensitive research activity. This difference in involvement can only help provide insight into whether the degree to which one interacts with sensitive research matters for opinion regarding the prospective risk's privatization may bring along. The result shows that there is a relatively large percentage of respondents working under conditions of privacy and security. This, for them, presents a situation more susceptible to vulnerability in the arena of national security.

The reliability analysis shows that the measurement instruments are consistent and reliable. Cronbach's Alpha values for privatization (.977), productivity (.947), data confidentiality (.946), national security risks (.950), and operational efficiency (.915) are all very high, meaning that the items in the survey consistently measure the intended constructs. These high values give a good platform on which further hypothesis testing and inferential analysis may

be based to confirm whether the research instruments are reliable enough in capturing meaningful data on the key variables of this study.

Lastly, the hypothesis-testing result gives insights to the relationship existing between privatization and major results such as productivity, operational efficiency, and national security risks. The regression analysis supports the hypotheses, indicating a positive long-term effect of privatization on productivity and operational efficiency in sensitive and allied government organizations. Privatization, therefore, is beneficial without any compromise on national security, which is a very important finding for policymakers and organizations considering privatization initiatives. This strengthens the validity of these findings because of the statistical significance of the relationships indicated by the p-values. These relationships thus provide empirical evidence supporting the study's proposed assumptions about the effects of privatization on government operations.

5.3   Key Findings

☐   The population profile of the sample group is responsible for ensuring that the research gathers varied opinions regarding privatization, productivity, operational efficiency, and threats to national security. The research involved 500 participants covering a broad age spectrum, education level, work experience, and organization affiliation. The distribution of the respondents by age was quite varied, with 30.8% of respondents aged between 40-49 years being the largest group, followed by 29.8% of the 30-39 years old. The 26.8% of the respondents belonged to the 50-59 years old group. The youngest group (less than 30 years) comprised only 8.6%, and the oldest group (60 years and over) comprised 4%.

☐   The sample's gender structure was biased in favour of males, who comprised 68% of the respondents, compared to 32% females. Nonetheless, the involvement of 160 female respondents yielded useful information on the possible gendered effects of privatization. Educational levels among the respondents were very high, with 38.4% having a Master's degree, 31% with a Doctorate or higher, and 30.6% with a Bachelor's degree or diploma. This highly educated sample indicates that the respondents were well aware of privatization .

☐   As for professional experience in scientific research, a significant percentage of respondents (30.8%) possessed 11-15 years of experience, and 29.8% possessed 5-10 years of experience. Furthermore, 26.8% possessed 16-20 years of experience, while just a minority had less than five years (8.6%) or over 20 years (4%) of experience. This dispersal shows that most respondents were experienced practitioners, whose views regarding privatization would be influenced by deep practical exposure to collaboration between the government and private sectors in research.

☐   The research also analysed respondents' positions, which showed majority of senior level This blend guarantees the equal representation of viewpoints, covering from operational staff to top-tier decision-makers. Departmental inclinations also tended to emphasize widespread distribution, The high incidence from security-related departments emphasizes that protection of confidential information and infrastructures is imperative in privatization risk discussions.

☐   Respondents had a range of affiliation with the institutions, 34.6% with the government research institutions, 25.8% with the public sector research organisations, 28% with private R&D corporations, and 11.6% with academia. This ensured diverse institutional base of the data so that what happened in all institutions, government, public or private, be examined. The research further determined that every one of the interviewees had undertaken collaborative efforts in government and private sector joint efforts, cementing the ubiquity of cross-sector collaboration within research-intensive sectors.

☐   An examination of the pattern of research involvement among the respondents revealed that 32.4% had engaged in basic research, 28.8% in applied research, 27.6% in translational research, and 11.2% in policy research. This proportion reflects the nature of research engagement by respondents and implies that what they perceive of privatization may be determined by the type of work they engage in. These findings offer a robust basis for further analysis.

☐   The comparison of the interpreted findings indicates that privatization contributes to improved productivity and operational efficiency of allied and sensitive government institutions. The study indicates that private sector participation introduces contemporary management methods, technology, and maximized resource allocation, resulting in improved operations. Organizations privatized have seen enhanced efficiency in workflow, minimized bureaucratic holdups, and a more formalized system of performance measurement.

☐   Among the most urgent issues of privatization in such sensitive areas is the threat it presents to national security and confidentiality of data. Nevertheless, the findings show that with strong legal and regulatory frameworks, these threats can be adequately addressed. The research discovered that although the outsourcing of operations to private organizations poses the risk of data breaches and abuse of information, the imposition of strict security procedures, compliance requirements, and responsibility mechanisms guarantees the protection of sensitive data.

☐   The empirical evidence also brings to the fore that privatization is not an across-the-board solution but a strategic one that needs to be planned and implemented carefully. The success of privatization programs is contingent upon the formulation of well-defined regulatory policies, detailed contractual agreements, and ongoing government monitoring. The existence of a robust legal system deters monopolistic behaviour, guarantees equitable competition, and enforces adherence to national security standards.

☐   Another important discovery is that privatization can bring in foreign investments and talent, thus promoting economic growth and technological innovation. Where government agencies do not have the financial ability to improve infrastructure and undertake digital transformation, partnerships with the private sector have worked well in plugging these holes. With the use of private funding and expertise, government agencies are able to upgrade their operations without compromising core administrative and regulatory duties.

☐   The research also highlights the importance of a balanced privatization approach, where government retains regulatory authority while private players are encouraged to spearhead operational improvements. This hybrid model allows national security issues to be kept at the forefront while leveraging the efficiency and experience of the private sector. This paradigm has been found to work well in many nations where privatization has led to economic development without compromising security interests.

☐   The applied implications of such findings are quite relevant for policymakers and decision-making stakeholders involved in decision-making concerning privatization. For proper implementation, privatization programs should be planned with embedded monitoring mechanisms, cybersecurity investments, and rigorous data protection legislation.

☐ Finally, the research gives strong empirical evidence that supports the notion that privatization, if done under well-established rules and security policies, can raise the productivity and operating efficiency of sensitive government institutions. The findings indicate that while concerns regarding national security and data privacy are warranted, they could be adequately contained by strict controls and strong legal structures. Through strategic privatization policies, governments are able to leverage technological advancements, cost-effectiveness, and enhanced delivery of services, hence contributing to public administration progress and modernization. These findings serve as a source of guidance for policymakers looking at privatization as a tool to maximize government function while ensuring security-sensitive and vital information is not compromised.

5.4 Ethical and Governance Challenges in Privatization

Government functions also privatization raises serious ethical and governance issues that must be properly scrutinized. One concern is the danger of corporate lobbying, conflict of interest, and regulatory capture when private companies abuse their influence to make government policy serve their profit interests. It must be examined how governments may develop stronger governance mechanisms to counteract unethical acts, promote competition on a level playing field, and maintain public accountability.

The privatization of allied and sensitive government functions is a developing world phenomenon with deep-reaching implications. Where short-term efficiency dividends can be expected, longer-term implications on security, financial stability, social balance, and government remain such concerns that require exhaustive examination. Potential research gaps for future analysis involve studying empirical case studies, impact evaluations conducted longitudinally, and formulating policy guidelines on maximizing privatization tactics while upholding public interests. By prioritizing these areas, policymakers and researchers can make sure that privatization is a means of innovation and efficiency and not a cause of instability and security risks.

5.5 Summary of Chapter

The purpose of this study is to evaluate the strategic implications of privatizing sensitive government organisations, including the negative repercussions that may result from such privatization. The study focuses on areas that are sensitive, such as the military, intelligence space, DAE, law enforcement, and national security. The oversight of sensitive information, strategic resources, and key services essential for maintaining social stability and security is frequently required in these areas, which are essential for the protection of national interests.

The study presents substantial empirical evidence suggesting that privatization, when carried out in accordance with predetermined norms and security measures, has the potential to improve the operational efficiency and productivity of essential government organizations. Even though concerns regarding national security and data privacy are warranted, the findings indicate that these concerns can be effectively controlled through the implementation of tough rules and powerful legal frameworks. Through the implementation of strategic privatization initiatives, governments can make use of technical advancements, enhance cost-effectiveness, and improve service delivery, so facilitating the overall improvement and modernization of

public administration.   The findings of this study offer valuable insights for policymakers who are contemplating privatization as a means of enhancing the efficiency of the government while also protecting sensitive and essential information.

5.6   Conclusion

The study's conclusions unveil substantial implications of the privatization of critical government domains and the potential risks. The research identifies the significance of preserving government management of core areas like defence, intelligence, law enforcement, and national security, as these play an invaluable role in securing national interests. The research identifies that although private sector engagement might introduce operating advantages, it introduces very critical issues in respect of data protection, national sovereignty, and institutional stability over the long term.

One of the main issues revealed in this research is the possible weakening of state control in strategic areas when privatization is done without proper precautions. The handing over of core services to the private sector may result in conflict of interest, compromised decision-making, and giving priority to profit interests over national security needs. The findings indicate that private actors, as much as they can innovate and be efficient, tend to lack the requisite regulatory environment to manage classified information and sensitive operations with the discretion and integrity required.

Moreover, the longitudinal analysis of defence privatization processes in sensitive areas shows that although immediate gains like cost-cutting and efficient management are apparent, long-term dangers like undermined security infrastructure and heightened susceptibility to external attacks arise over time. The research also points out cases where privatized intelligence and defence functions have led to security violations, leakage of sensitive information, and diminished public confidence in public institutions should attract strong penal actions.

The study also highlights the need to develop thorough regulatory structures to counterbalance the risks entailed in privatization. Sound legal frameworks, strict contractual commitments, and rigorous compliance checks are vital to preventing private players from deviating from national security norms. The research suggests that governments implement a hybrid privatization strategy, where the private sector is only involved in non-core functions while core strategic activities are kept under state control.

The empirical evidence indicates that, when strategically adopted, privatization has the potential to increase productivity and operational efficiency in specific areas of government. The study highlights several instances where private sector involvement has brought in contemporary management practices, optimized resource utilization, and eliminated bureaucratic delays. But such gains must be balanced against the risks inherent in them, especially in industries where confidentiality of data and national security are crucial. The research recommends a model of privatization that is well thought out, with special focus on transparency, accountability, and flexibility against possible threats to security.

Finally, the research is an addition to the ever-increasing literature on the privatization of sensitive government areas through an analysis of its gains and limitations. It underlines the paramount importance of policymakers adopting a careful approach towards privatization so that national security and public good take precedence. Research in the future should concentrate on formulating sophisticated models to gauge the effects of privatization in different geopolitical situations, utilizing real-time data analysis to monitor its effectiveness over a long duration. Through a careful and well-governed strategy, governments are able to utilize the best of the private sector while protecting the integrity of key public services and national security interests.

CHAPTER : VI

SUMMARY IMPLICATIONS AND RECOMMENDATIONS

6.1 Introduction

The anticipated public service delivery after introduction and implementation of NPM in 1980 was gloomy for want of modern economic reforms in India. Due to under performance of many government institutions at multiple economic fronts which culminated them into NPAs and had become the liabilities to government. This could not be tolerated for long run hence imperative initiatives like decentralization, disinvestment, FDI, and ultimately privatization of these institutions including sensitive and allied government organization was imminent. Privatization of above institutions has been expedited by GOI because of their typical or complex nature. The research topic titled as "Evaluating strategic implications of privatization on sensitive and allied government organizations" is an attempt made through research to identify and evaluate the effects of strategic governing parameters on sensitive and associated government institutions to protect the national interests.

6.2 Summery

This research aims to assess the consequences of privatizing sensitive government sectors, particularly focusing on the potential negative outcomes that may arise from such actions. The study zeroes in on critical areas deemed sensitive, including the military, intelligence, law enforcement, and national security. These sectors often require stringent oversight of sensitive information, strategic resources, and essential services that are vital for ensuring social stability and security, all of which are crucial for safeguarding national interests. To investigate the long-term impacts of private sector involvement, this study employs a longitudinal approach. It seeks to evaluate the enduring effects of privatization initiatives on government institutions, service delivery mechanisms, and broader societal outcomes, potentially spanning several years or even decades. By adopting this temporal perspective, the research aims to provide a comprehensive understanding of the evolving dynamics of privatization and its subsequent influence on the resilience, efficiency, and accountability of organizations.

In order to fill the research gap, that is lacked on India that particularly determine strategic implications or consequences of privatisation of sensitive and allied organisations and integrity of India. In order to substantiate research, the viewpoints of expert's government personnel, crucial stockholders who are involved in sensitive defence sectors have been considered for questionnaire and data generation by suitable statistical methods and analysed the privatisation of institutions given above

In science and engineering there are calibrated instruments available to measure the various physical or electronic engineering related parameters which are governing each part of subsystem or system as a whole. On similar lines. The hypothesis of study indicates positive and negative aspects of privatisation. The research is aimed to fulfil research objectives and corresponding research questions on strategic implications parameters such as productivity, operational efficiency security risks and data confidentiality to determine strategic implications the inversion concept is introduced to improve the overall performance of the organisation under some assumptions.

The data collection is based on demographic characteristics of selected populations correspondents such as age, gender experience education qualification, type of organization, job position job affiliation was considered. The statistical techniques such as descriptive reliability analysis hypothesis through regression analysis. The complex interactions between privatisation and sensitive and allied government organizations is facilitated by chapter's findings based on research questions. Descriptive analysis lay foundation of further inferential analysis ensuring comprehensive understanding of the data before testing the hypothesis

The study presents substantial empirical evidence suggesting that privatization, when carried out in accordance with predetermined norms and security measures, has the potential to improve the operational efficiency and productivity, data confidentiality and security risks of sensitive and essential government organizations. Even though concerns i.e. strategic implications regarding national security and data privacy are warranted, the findings indicate that these concerns can be effectively controlled through the implementation of tough rules and powerful legal frameworks. Through the implementation of strategic privatization initiatives, governments can make use of technical advancements, enhance cost-effectiveness, and improve service delivery, so facilitating the overall improvement and modernization of public administration.   The findings of this study offer valuable insights for policymakers who are contemplating privatization as a means of enhancing the efficiency of the government while also protecting sensitive and essential information.

One of the primary risks associated with privatization in sensitive sectors is the potential erosion of state control over critical functions, leading to vulnerabilities in national security and intelligence operations. Private entities, driven by profit motives, may prioritize financial returns over national interests, potentially compromising strategic autonomy. Moreover, privatization can lead to the concentration of sensitive information in the hands of a few corporate entities, increasing cybersecurity threats and the risk of foreign influence. Another key challenge is the potential decline in public accountability and transparency, as private firms are not subject to the same levels of scrutiny as government agencies. This can lead to ethical concerns, mismanagement, and reduced public trust in critical sectors.

Despite these risks, privatization can also offer substantial benefits, particularly in terms of operational efficiency, cost-effectiveness, and technological advancements. Private sector participation can introduce cutting-edge innovations, streamline bureaucratic inefficiencies, and attract investments that might be constrained in state-controlled environments. Strategic partnerships between the government and private firms can enhance resilience by leveraging market-driven solutions while maintaining oversight mechanisms.

6.3 Implications

To mitigate risks and maximize benefits, this study emphasizes the need for a well-regulated, phased approach to privatization in sensitive sectors. Key recommendations include implementing stringent legal and regulatory frameworks, ensuring robust public-private partnerships, and establishing strong oversight mechanisms to prevent undue foreign influence and security breaches. Additionally, hybrid models of privatization—where the state retains a controlling stake while allowing private sector expertise—can provide an optimal balance between efficiency and security.

The integration of private sector services into government operations has emerged as a significant topic of discussion and research worldwide. This literature review aims to deliver a thorough examination of the key themes related to this complex process. By tracing the development of privatization and partnership models globally, it highlights the historical evolution of private sector involvement in governmental functions. Furthermore, it explores the implications of these collaborations on productivity by reviewing studies that address issues such as workforce dynamics, technology adoption, and changes in organizational culture. The review also addresses the critical issue of data confidentiality within government-private partnerships, including an assessment of literature on data security challenges, breaches, and the legal and regulatory frameworks that support data protection. Additionally, it examines the national security risks associated with private sector integration, such as cyber threats and insider risks, while analysing comparative studies of different engagement strategies. In conclusion, the research evaluates the operational efficiency of government-private partnerships by scrutinizing management strategies, case studies, and operational metrics designed to enhance efficiency while incorporating private services. This comprehensive analysis aims to illuminate the complex dynamics of government-private partnerships and their implications for public administration and policy.

The essential requirement i.e., security and integrity of the nation cannot be compromised at the cost of mere economic gain. One of the major issues revealed in the research is possibility of loss of part or full control by the government on security issues which may endanger the country's integrity .This can be mitigated by implementation of sound legal parameters, SLAs, rigorous compliance checks ,longitudinal analysis and immediate strict legal or punitive action against the perpetrators .However research suggests that hybrid privatization strategy to core sectors while those must be under strict government control to avoid security lapses. This would make able private industry to exhibit innovation and increase in efficiency to contribute nations overall prosperity.

6.4   Suggestions and Recommendations

Though privatization could increase efficiency and decrease the government's financial burden, it could also be dangerous if not well regulated. To offset the adverse effects and ensure that privatization does not compromise public interest, there needs to be a well-formulated set of policies and guidelines. The below recommendations offer a strategic framework to reconcile the advantages of privatization with the imperative of national security and long-term sustainability.

1.   Regulatory Frameworks
2.   Guaranteeing Accountability and Oversight
3.   Protection of National Security and Data Privacy
4.   Avoiding Monopolization and Profit-Motivated Exploitation
5.   Building Public-Private Partnership Models
6.   Employee Issue Resolution and Stability of Workforce
7.   Analysis of Long-Term Economic and Social Effect
8.   Crisis Management and Redundancy Plans Strengthening
9.   Increasing Transparency and Public Participation
10.   Revisiting Privatization Policies Based on Performance Metrics

1. **Regulatory frameworks**

In order to avoid negative effects on sensitive government institutions, the government needs to institute a strong regulatory framework for private sector involvement.

2. **Guaranteeing Accountability and Oversight**

Private sector participation in government activities poses one of the significant risks of accountability dilution. Private firms are mostly driven by profit motives, which may result in cost-cutting, lowering of service standards, and moral compromises. To avoid this, a tight accountability system must be instituted.

3. **Protection of National Security and Data Privacy**

Private companies working in government agencies should be subjected to intense background checks and security clearances. Data protection policies must be strictly followed, with all information kept within secure national databases and not made available to unauthorized individuals. Cybersecurity protocols, such as encrypted communication, multi-layered authentication, and round-the-clock monitoring, must be put in place to safeguard sensitive data from cyber-attacks and corporate espionage.

4. **Avoiding Monopolization and Profit-Motivated Exploitation**

Privatization in government agencies must not result in monopolization, where one private company has control over vital services, thus reducing competition and raising the cost of services. In order to overcome this, the government must define competition laws that deter monopolistic tendencies and promote the entry of several private companies.

5. **Building Public-Private Partnership Models**

Instead of total privatization, a better model should take the form of public-private partnerships (PPPs). In this model, the government still owns strategic infrastructure but only outsources non-sensitive functions to private actors.

6. **Employee Issue Resolution and Stability of Workforce**

One of the most direct consequences of privatization is the displacement of public employees and shifting employment policies. To avoid labour instability, the government must guarantee that privatization does not result in large-scale dismissal or discrimination against workers provided work out put and efforts to increase efficiency or competency level.

7. **Analysis of Long-Term Economic and Social Effect**

Prior to admitting private sector participation in sensitive sectors, an adequate long-term analysis of impact needs to be done. Governments ought to request independent research bodies to examine the economic, social, and security aspects of privatization. Such analyses ought to interrogate whether private sector engagement results in better service provision, cost-effectiveness, and public satisfaction

8. **Crisis Management and Redundancy Plans Strengthening**

Government agencies are important in crisis management, disaster relief, and emergency services. Private services entering these fields should not compromise the government's capacity to manage emergencies well. To avoid service disruptions at times of crises, redundancy provisions must be available so that the critical functions are still under government control.

9. Increasing Transparency and Public Participation

Privatization decisions in sensitive areas of government need to be taken with more openness and people's participation. Public hearings, stakeholder forums, and expert panel meetings should be held prior to taking decisions on privatization policy.

10. Revisiting Privatization Policies Based on Performance Metrics

Privatization policies must not be permanent but should be reviewed on a regular basis based on their actual performance. Regular reviews must be done to determine if privatization has enhanced efficiency, ensured security, and preserved public welfare. Private sector involvement should be immediately reversible if it proves ineffective or harmful.

5.7   Scope for Further Research

Privatization of services in sensitive and allied government organizations represents a multifaceted set of issues and implications that demand further study. A number of areas offer possibilities for further research are illustrated below.

1.   **Long-Term Effect on National Security**

 Since private companies have profit motivations, their risk management measures and loyalty to national security priorities may not always match government goals. Further, studies should examine how governments can enforce tighter regulatory frameworks to make sure that private firms dealing with sensitive information and operations meet the highest standards of security.

2.   **Comparative Analysis of Privatization Models**

A comparative analysis of various models of privatization carried out in different countries and sectors is another research area with high potential. Understanding these differences can assist policymakers in crafting frameworks that reduce risks while capitalizing on the advantages of private sector efficiency and innovation.

3.   **Economic and Social Impacts of Privatization**

The economic and social implications of privatization in sensitive government agencies call for extensive long-term studies. Moreover, studies can also concentrate on the social impacts, specifically how privatization impacts employment security for public employees, access to services for marginalized groups, and public trust in government overall. Longitudinal research following economic and social changes over a period of decades would be especially helpful in ascertaining the actual effect of privatization.

4.   **Role of Public-Private Partnerships (PPPs) in Sensitive Sectors**

Public-Private Partnerships (PPPs) have proven to be a successful model in reconciling government control with the efficiency of the private sector because of close monitoring system. The success of PPPs in managing sensitive government activities is, however, a subject that needs further research. Research can assess the success and failure of the existing PPPs in areas such as defence ,Space, DAE, intelligence, public health, and disaster management.

5. **Research in academia**

Based on this research , the academia can further fortify the research on economical as well as security aspects in respect of privatization of sensitive and allied government organizations.

APPENDIX 'A'

SURVEY COVER LETTER

20 September 2024

Dear participants

My name is Mr. Milind Bokade, India. Being a student of faculty of management in Swiss School of Business and Management (SSBM) Geneva, I am carrying out the research on strategic implications of privatization on sensitive and allied government organizations.

Since you are the core part of population involved in government as well as in private organisations related to research activities, I am inviting you to take part and contribute to my research. The hard copies of questionnaire are given to everyone. I weigh your opinion and appreciate your efforts to complete the survey by answering the questions.

This research is very useful for policymakers in government as well as in private companies to increase overall effectiveness. The survey will take approximately 10 minutes to complete. There is no risk and anonymity is protected. After completion of analysis, interpretation and results , the dissertation will be submitted to my respected guide Professor (Dr.) Anuja Shukla at SSBM.

It is therefore requested to all participants to answer the questions .your time and participation   is valuable, but it is voluntary. You may withdraw at any time. If you need any clarification, please contact me.

Thanking you,

Yours's Sincerely ,

Milind Bokade

Mail: milindbokade@yahoo.com

APPENDIX B

INFORMED CONSENT

I understand that I have been asked to take part in in survey of specific population for dissertation written by Mr. Milind Bokade at Swiss School of Business and Management for the degree of Global Doctor of Business Administrator (GDBA). The aimed study has used open literature as well as accessed relevant information available at social media to study the effects of privatisation of specific government as well as private organisations. I have read and understood the consent from the authority, and I agree to take part in above study.

REFERENCES

Abbasi, Ahmed, Sarker, Suprateek; and Chiang, Roger H.L. (2016). Big Data Research in Information Systems: Toward an Inclusive Research Agenda. Journal of the Association for Information Systems, 17(2), DOI: 10.17705/1jais.00423 Available at: https://aisel.aisnet.org/jais/vol17/iss2

Albalate, D., Bel, G., González-Gómez, F., Hernández-Gutiérrez, J. C., & Picazo-Tadeo, A. J. (2024). Changing prices after the reform of local public services: re municipalization versus privatization. Journal of Regulatory Economics, 65(1), 1-26.

Alford, J., & Greve, C. (2017). Strategy in the public and private sectors: Similarities, differences and changes. Administrative Sciences, 7(4), 35.

Amrantou, Kazakapopoulou. (2018). Resistance to change: "Empirical investigation of its antecedents" Journal of organizational change management (31)(1),00-00 DOI:10:1108/JOCM-05-2017.

Argy, F. (2011). The liberal economic reforms of the last two decades: A review. Australian Journal of Public Administration, 60(3), 66–77. doi:10.1111/1467-8500.00225

Arnold, J., Javorcik, B., & Mattoo, A. (2006). The productivity effects of services liberalization: Evidence from the Czech Republic. World Bank working paper, 1-38.

Avishai Melamed. (2024). A going to outer space with new space : The rise and consequences of evolving public-private partnership space Policy Volume 68, May 24 101626.

Bachiller, P. (2023). Privatization in central government. In Global Encyclopaedia of Public Administration, Public Policy, and Governance (pp. 10122-10130). Cham: Springer International Publishing.

Bala, H. and Venkatesh, V. (2016). Adaptation to Information Technology: A Holistic Nomological Network from Implementation to Job Outcomes," Management Science (62:1), 2016, 156-179. https://doi.org/10.1287/mnsc.2014.2111

Becker, C. J. (2012). Democratic accountability and business improvement districts. Public Performance & Management Review, 36(2), 187-202.

Bikramdeep Singh. (2014). Study of US DARPA model and its applicability to the Indian Defence Research and development System., Manekshaw paper no. 20104, Centre for land warfare studies ,New Delhi.

Bishop, Kay, Mayer. (1994). Privatization and Economic Performance. Oxford university Press. Sept 1994. ISBN: 9780198773443.

Blanken, A., & Dewulf, G. (2010). PPPs in health: Static or dynamic? Australian Journal of Public Administration, 69(s1), S35-S47.

Bommakanti K, Yogesh Joshi. (2023). Emerging technologies and India's defence preparedness, Observers Research Foundation, special report no 209.

Bortolotti, B. and Milella, V. (2016). Privatization in Western Europe: Stylized facts, outcomes, and open issues. FEEM Working Paper No. 124.06, available at: https://ssrn.com/abstract=936911 or Doi: 10.2139/ssrn.936911.

Bovaird, T., Stoker, G., Jones, T., Loeffler, E., & Pinilla Roncancio, M. (2016). Activating collective co-production of public services: influencing citizens to participate in complex governance mechanisms in the UK. International Review of Administrative Sciences, 82(1), 47-68.

Boycko, M., Shleifer, A., & Vishny, R. W. (2016). A Theory of Privatization. Economic Journal (London, England), 106(435), 309. doi:10.2307/2235248.

Brown, J. Earle, John, Telegdy, Almos. (2004). Does Privatization Raise Productivity? Evidence from Comprehensive Panel Data on Manufacturing Firms in Hungary, Romania, Russia, and Ukraine. SSRN Electronic Journal, December 2004. DOI:10.2139/ssrn.634081.

Chawla, Deepak, Sondhi, Neena. (2011). Research Methodology- Concepts and Cases," . Edition: First edition, September 2011. Publisher: VIKAS PUBLISHING HOUSE PVT. LTD. https://www.researchgate.net/publication/283481855_Research_Methodology

Claudia curie, Paolo Mancuso b, Alessandro Scarpa b. (2025). State-owned enterprises: A bibliometric review and research agenda. Finance Research Letters Volume 74, March 2025, 106749 https://doi.org/10.1016/j.frl.2025.106749

Cox, S. M., and M. McDonald. (2013). Ethics is for human subjects too: participant perspectives on responsibility in health research. Social science & medicine (1982) 98: 224–231.

Deb, S. (2020). Privatisation of defence sector: Pros & cons. Retrieved from Defence XP - Indian Defence Network website: https://www.defencexp.com/privatisation-of-defence-sector/

Dixit, R. (2020). Privatisation of atomic energy sector: A step in right direction. Retrieved August 10, 2022, from The Week website: https://www.theweek.in/news/sci-tech/2020/05/17/privatisation-of-atomic-energy-sector-a-step-in-right-direction.html

Djankov, S. and Murrell, P. (2012). Enterprise restructuring in transition: a quantitative survey. Journal of Economic Literature, Vol. 40 No. 3, pp. 739-792.

Endris, M. A., Alemu, A. E., & Kibret, A. T. (2023). Erratic Views and Policy Inconsistency on Privatisation Modalities in Ethiopia: Implications on The Performance of Firms in The International Market a Systematic Review. Research on Enterprise in Modern Economy theory and practice, 2(37), 5-27.

Etrogiovanna, R.G. (2020). The benefits of privatization? The Mexican experience in the telecommunications industry", Paper presented at the Emerging Research on Political Economy and Public Policy Conference, London School of Economics and Political Science, available at: www.lse.ac.uk/europeanInstitute/events/2008-09/Gonzalez_Pietrogiovanna.pdf.

Fabre, A., & Straub, S. (2023). The impact of public–private partnerships (PPPs) in infrastructure, health, and education. Journal of Economic Literature, 61(2), 655-715.

Filipovic, Adnan. (2005). Impact of Privatization on Economic Growth. Journal of Undergraduate Economic Review, vol 14,Jan 2005.

Gakhar, D.V. and Phukon, A. (2018). From welfare to wealth creation: a review of the literature on privatization of state-owned enterprises, Vol. 31, No. 2, pp. 265-286, available at: https://doi.org/ 10.1108/IJPSM-03-2017-0096

Godinho R M, Hinggis P, Gonsalvis C.(2020), Assessing the reliability of virtual construction of mandibles May2020, DOI : 10 1002/ajpa.24095

Gujarati, D.N. and Porter, D.C. (2010). Essentials of Econometrics. McGraw-Hill/Irwin, New York. 4th Edition.

Hatoum, H. (2019). The Effect of the Choice of Financing on Small and Medium Enterprises' Post-Entry Performance-Case of Bahrain. In 2019 International Conference on Innovation and Intelligence for Informatics, Computing, and Technologies (3ICT) (pp. 1-6). IEEE.

Harvey A, (2005). Brief History of Neoliberalism. Oxford University Press. Chapter 2, P(64) ISBN 0–19–928326–5 978–0–19–928326–2, ISBN 0–19–928327–3 (Pbk.) 978–0–19–928327–9 (Pbk.)

Hayllar, M. R. (2020). Public-private partnerships in Hongkong: Good governance–the essential missing ingredient? Australian Journal of Public Administration, 69(s1), S99- S119.

Hodge, G. (2000). Privatization: An International Review of Performance (1st ed.). Routledge. https://doi.org/10.4324/9780429498022

Hodge, G. A., & Coghill, K. (2017). Accountability in the privatized state. Governance-an International Journal of Policy Administration and Institutions, 20(4), 675-702.

Hodge, G. A., & Greve, C. (2019). Public Private Partnerships: The passage of time permits a sober reflection. Economic Affairs, 29(1), 33-39.

Hong, J.-Y., & Yi, S.-Y. (2016). A study on impact of privatization: Focus on efficiency and productivity. Journal of the Korea Academia-Industrial Cooperation Society, 17(6), 249-257.

Izueke, E., Onah, F., Ugwuibe, C. O., Okueze, F., Agu, S., Ugwu, C., and Ezeibe, C. (2020). Implementation of international public sector accounting standards and transparency & accountability in the public sector. International Journal of Finance and Accounting, 9(3), 67-76. DOI:10.5923/j.ijfa.20200903.03

Jamali, D. (2004). Success and failure mechanisms of public private partnerships (PPPs) in developing countries: Insights from the Lebanese context. International Journal of Public Sector Management, Vol. 17 No. 5, pp. 414-430. https://doi.org/10.1108/09513550410546598.

Johnson, G., Smith, S., & Codling, B. (2020). Micro processes of institutional change in the context of privatization. Academy of Management Review, 25(3), 572–580.

Kehinde, J. O. (2010). Privatization: The strategic options as pathway to Nigerian's sustainable economic development. International Business Management, 4(3), 145–150.

Khurud, B.S. and Abhang, S.B. (2016). Performance review of disinvestment policy of India: a study of post reform era. European Academic Research, Vol. III No. 10, pp. 10875-10888.

Klievink, B., & Janssen, M. (2008). Improving Government service delivery with private sector intermediaries. European Journal of e Practice, 5(October), 1-9.

Korba, L., Wang, Y., Geng, L., Song, R., Yee, G., Patrick, A.S., Buffett, S., Liu, H., You, Y. (2008). Private data discovery in collaborative environments. Journal of Computer Security, 16(5), 671-695.

Kumar, P. (2014). Impact of disinvestment on profitability of selected public sector units. International Journal of Reviews, Surveys and Research, Vol. 3 No. 2, pp. 28-42.

Kumar, R. (2022). Research Methodology: A Step-by-Step Guide for Beginners (6th ed.). Sage Publications.

Leary, W. E. (2001). NASA ends project on rocket meant to replace space shuttle. The New York Times. Retrieved from https://www.nytimes.com/2001/03/02/us/nasa-ends-project-on-rocket-meant-to-replace-space-shuttle.html.

Leruth, L. (2012). Public-private cooperation in infrastructure development: A principal-agent story of contingent liabilities, fiscal risks, and other (un)pleasant surprises. Networks and Spatial Economics, 12(2), 223–237.

Liivoja, R. (2012). Regulating the private military and security industry: A quest to maintain state control and preserve public values. Leiden Journal of International Law, 25(4), 1019-1028.

Li, W., Meng, P., Hong, Y., Cul. (2020). Using deep learning to preserve data confidentiality. Appl Intel 50, 341–353 (2020). https://doi.org/10.1007/s10489-019-01515-3. Feb. 2020.

Maraš, Darija , Dangubić, Miloš (2022). Cooperation between government agencies and private companies in space: The case of the United States. Astro politics, 20(1), 18-36.

Marks, D. F., & Yardley, L. (2004). Research Methods for Clinical and Health Psychology. Sage. https://doi.org/10.4135/9781849209793.

Megginson, W.L. and Netter, J.M. (2021). From state to market: a survey of empirical studies on privatization. Journal of Economic Literature, Vol. 39 No. 2, pp. 321-389.

McKenzie, D. and Mookherjee, D. (2014), "Distributive impact of privatization in Latin America: an overview of evidence from four countries (Argentina, Bolivia, Mexico and Nicaragua)", research project commissioned by the Inter-American Development Bank, available at: www.bu.edu/ econ/files/2012/11/dp128.pdf.

Megginson, W.L., Nash, R.C. and Randenborgh, M.V. (2014). The financial and operating performance of newly privatized firms: an international empirical analysis. The Journal of Finance, Vol. 49 No. 2, pp. 403-452.

Megginson (2005). The lessons and future privatisation chapter 2, PP(338-406). Oxford Scholarship Online, Feb. 2005. https://doi.org/10.1093/0195150627.003.0011.

Misra SN. (2024). Proposed reforms for DRDO: Challenges and way forward. Defence and technology, Vol.13 ,No. 3, ISSN 2347-5705.

Moretti E., Steinwender C, Van Reenen J. (2019). The intellectual spoils of war? defence R&D, productivity, and international spillovers. The Review of Economics and Statistics, 101(4), 594-606.

Nagaraj, R. (2016). Public sector performance since 1950- A fresh look. Economic and Political Weekly, Vol. 41 No. 25, pp. 2551-2557.

Nikolova, M. (2015). Government funding of private voluntary organizations: Is there a crowding-out effect? Nonprofit and Voluntary Sector Quarterly, 44(3), 487-509.

Nikolova, Milena. (2016). "Minding the happiness gap: Political institutions and perceived quality of life in transition," European Journal of Political Economy, Elsevier, vol. 45(S), pages 129-148. DOI: 10.1016/j.ejpoleco.2016.07.008.

Nugraha, Y. Martin A. (2022). Understanding government data confidentiality requirements in service level agreements. Government Information Quarterly, 39(1), 101578.

Ojonugwa, U. and Lrunmoluo, J. (2015). "Does privatization increase firm performance in Nigeria? An empirical investigation", MPRA Paper No. 69675, Eastern Mediterranean University, available at: https://mpra.ub.uni-muenchen.de/69675/

Orngreen, R., & Levinsen, K. T. (2017). Workshops as a research methodology. Electronic Journal of E-learning, 15(1), 70-81.

Ozalp, H., Ozcan, P., Dinckol, D., Zachariadis, M., & Gawer, A. (2022). "Digital colonization" of highly regulated industries: an analysis of big tech platforms' entry into health care and education. California Management Review, 64(4), 78-107.

Owen, Geoffrey (2012). Industrial policy in Europe since the Second World War: what has been learnt? ECIPE Occasional paper , 1. The European Centre for International Political Economy, Brussels, Belgium. February 2012.http://eprints.lse.ac.uk/41902/

Pandey, P., & Pandey, M. M. (2021). Research methodology tools and techniques. Bridge Centre,2015. ISBN 978-606-93502-7-0

Parker, D. (2014). The UK's privatization experiment: the passage of time permits a sober assessment. CESifo Working Paper Series 1126, CESifo Group Munich, available at: https:// papers.ssrn.com/sol3/papers.cfm?abstract_id=514224.

Paterson, A., James, B. and Karimi, A. (2017). Putting the cart before the horse? Privatization and economic reform in Afghanistan", Briefing Paper Series, Afghanistan research and evaluation unit, available at: https://areu.org.af/wp-content/uploads/2016/01/632E-Putting-the-Cart-Beforethe-Horse-BP-web.pdf.

Perandres de Vicente. 2024 Assessing Military Privatization and the Wagner Group's strategic engagement in Sub-Saharan Africa, International master's in security, Intelligence and Strategic Studies (IMSISS) May 2024 GUID: 2684954P DCU ID: 21109095 CU ID: 39312151.

Pheko, M. M. (2013). Privatization of public enterprises in emerging economies: Organizational development (OD) perspectives. International Journal of Business and Management, 8(20). doi:10.5539/ijbm.v8n20p25.

Phuyal M. (2024). Analysing Indian way of Public-Private Partnership (PPP). Volume 31 N0. 2.

Piao. (2021). Privacy protection in government data sharing: an improved LDP-based approach. Service Oriented Computing and Applications, Volume 15, Issue 4 , Pages 309 - 322. https://doi.org/10.1007/s11761-021-00315-3. Published: 01 December 2021.

Poczter, S. (2016). The long-term effects of bank recapitalization: evidence from Indonesia. Journal of Financial Intermediation, Vol. 25 No. C, pp. 131-153.

Potter, A. (2015). Privatization in Ghana successes during economic collapse and authoritarianism. Discussion Paper of CUTS International, available at: www.cuts-ccier.org/pdf/Privatization_ in_Ghana-Alan_Potter.pdf

Pratap, K.V. (2021). Does privatization lead to benign outcomes? A case study of India. Sanford Journal of Public Policy, Vol. 2 No. 1, pp. 225-237

Pukova M., Irina Makolina, Bashkev (2021). Developing Public Private Partnership project to enhance innovation capability in defence Industry. Emerging economy and sustainable growth, http://doi.org/10.3390 economics9040147, pp.6-7.

Rastogi, M.K. and Shukla, S.K. (2013). Challenges and impact of disinvestment on Indian economy. International Journal of Management and Business Studies, Vol. 3No. 4, pp. 44-53.

Reed. M S, M. Fery, Martin Otega (2021). Evaluating impact from research: A methodological framework. Research policy. Volume 50, Issue 4, May 2021, 104147.journal homepage: www.elsevier.com/locate/respol, pp(2-3).

Rossel, (2024). Fundamentals of data analysis. Dual Degree in Business Administration & Data and Business. Dept. of Applied Mathematics.IE university. September 2024. E-mail: alopezr@faculty.ie.edu.

Roberts, P. (2022). Government-led innovation acceleration: Case studies of US federal government innovation and technology acceleration organizations. Review of Policy Research. Advance online publication.

Robertson. (1978). Confidentiality in Government. School of Public Administration, Queen's University, 19 November 1977.Number 6 (Summer 1978),Pg(3-11)

Ruuska, I., & Teigland, R. (2019). Ensuring project success through collective competence and creative conflict in public-private partnerships-a case study of bygga villa, a Swedish triple helix e-government initiative. International Journal of Project Management, 27(4), 323-334.

Samson, V. (2022). The complicating role of the private sector in space. Bulletin of The Atomic Scientists, 78(2), 92-105.

Sandoval-Ballesteros, I. (2013). From institutional to structural corruption: Rethinking accountability in a world of public-private partnerships. Edmond J. Safra Working Paper, (33).

Santacesária, M. (2001). Data confidentiality using error correction coding. International Journal of Mobile Communications, 1(1), 21-33.

Sathye, M. (2015). Privatization, performance, and efficiency: a study of Indian banks. Vikalpa: The Journal for Decision Makers, Vol. 30 No. 1, pp. 7-16.

Schoute, M., Budding, T., & Gradus, R. (2018). Municipalities' choices of service delivery modes: The influence of service, political, governance, and financial characteristics. International Public Management Journal, 21(4), 502-532.

Siedlecki, S. L. (2020). Understanding Descriptive Research Designs and Methods. Clinical Nurse Specialist, 34, 8-12. https://doi.org/10.1097/NUR.0000000000000493.

Sharma, K R. (2002). Research methodology K R Sharma. Jaipur National Publishing House 2002. ISBN: 81-86803-76-9 ,xiv,514p.

Singh.(2022). National conference on Atmanirbhar Bharat: Building a Self-Reliant India. Department of Humanities and Management B R Ambedkar National Institute of Technology, GT Road Bye-Pass, Jalandhar 144027 Punjab. May 25-26, 2022.

Singh, A., & Prakash, G. (2010). Public–private partnerships in health services delivery: A network organizations perspective. Public Management Review, 12(6), 829-856.

Snyder, C. M., Trost RP, Trunkey D. (2001). Reducing government spending with privatization competitions: A study of the Department of Defence experience. The Review of Economics and Statistics, 83(4), 647-657.

Stiel, C. (2023). Re municipalization, corporatization, and outsourcing: The performance of public-sector firms after reorganization. International Public Management Journal, 26(4), 463-488.

Susha I, Gil-Garcia J. . (2019). Collaborative Governance Approach to Partnerships Addressing Public Problems with Private . Hawaii International Conference on System, January 2019. DOI:10.24251/HICSS.2019.350.

Swaminathan S, Krishnan K. (2023). A conceptual review on privatization of Indian airports - a new dimension in people management explored. Journal of the International Academy for Case Studies 29(s3):1-14, December 2023.

Talukdar, K. (2020). Opinion: It's imperative for India to privatise its defence sector. Here's why. Retrieved from Youth Ki Awaaz website: https://www.youthkiawaaz.com/2020/08/privatization-a-much-needed-step/

Teicher, J., Alam, Q., & Van Gramberg, B. (2016). Managing trust and relationships in ppps: Some Australian experiences. International Review of Administrative Sciences, 72(1), 85- 100.

Torchia, M., Calabrò, A., & Morner, M. (2015). Public–private partnerships in the health care sector: A systematic review of the literature. Public Management Review, 17(2), 236–261.

Turbiville, G. H. (2007). Private security infrastructure abroad: Criminal-terrorist agendas and the operational environment (p. 0067). JSOU Press.

Verma, M. (2018). Data protection and confidentiality in government contracts. Journal of the Indian Law Institute, 60(3), 349-366.

Wang, H., Xiong, W., Wu, G., & Zhu, D. (2018). Public–private partnership in Public Administration discipline: a literature review. Public management review, 20(2), 293-316.

Wells , Samuel Bendett (2012). Public-Private Cooperation in the Department of defence: A Framework for Analysis and Recommendations for Action. National Defence University. DH No.74.Pp(1-12).www.ndu.edu/inss. https://digitalcommons.ndu.edu/cgi/viewcontent.cgi?article=1010&context=defense-horizons

Widdus, R. (2021). Public-private partnerships for health: Their main targets, their diversity, and their future directions. Bulletin of the World Health Organization, 79(8), 713-720.

Winchip, E., Stevenson, H., & Milner, A. (2023). Measuring privatisation in education: methodological challenges and possibilities. In Mapping the Field (pp. 70-89). Routledge.

Wolf, C. and Pollitt, M.G. (2018). Privatising national oil companies: assessing the impact on firm performance. Working paper series 02/2008, Judge Business School, Cambridge University, available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1088327

Yerger, R.H. (2024). A Case Study on DARPA: An Exemplar for Government Strategic Structuring to Foster Innovation? In: Henrekson, M., Sandström, C., Stenkula, M. (eds) Moonshots and the New Industrial Policy. International Studies in Entrepreneurship, vol 56. Springer, Cham. https://doi.org/10.1007/978-3-031-49196-2_7.

Yousefi, B., Imran, M., Laskey, K.B. (2019). Synthesizing Inference Enterprises from Redacted Data. In: Adams, S., Beling, P., Lambert, J., Scherer, W., Fleming, C. (eds) Systems Engineering in Context. Springer, Cham. https://doi.org/10.1007/978-3-030-00114-8_52. 22 June 2019.

Zandee. D, Bobqueen Kimberlry, Kruijver, Stemsn. (2020). European Strategic Autonomy in Security and Defence. Clingendel report. Netherland Institute of International relations,(pp. 6-7).