"STUDY ON IMPACT OF ELECTRONIC MONITORING ON EMPLOYEES PERFORMANCE IN IT INDUSTRY"

A Thesis submitted to Gujarat Technological University

for the Award of

Doctor of Philosophy

In

Management

by

SHETH CHANDNI HARESH

Enrollment No: 209999903048

Under supervision of

PROF. (DR.) FALDU RAJESH BAVANJIBHAI

Professor, The Charutar Vidhya Mandal University

MBA Program Vallabh Vidyanagar

GUJARAT TECHNOLOGICAL UNIVERSITY AHMEDABAD

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DECLARATION

I declare that the thesis entitled "**STUDY ON IMPACT OF ELECTRONIC MONITORING ON EMPLOYEES PERFORMANCE IN IT INDUSTRY**" submitted by me for the degree of Doctor of Philosophy is the record of research work carried out by me during the period from 2020 to 2026 under the supervision of **Prof. (Dr.) Faldu Rajesh Bavanjibhai** and this has not formed the basis for the award of any degree, diploma, associateship, fellowship, titles in this or any other University or other institution of higher learning.

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The viva-voce of the PhD Thesis submitted by **Sheth Chandni Haresh** having Enrollment No. **209999903048** entitled "**STUDY ON IMPACT OF ELECTRONIC MONITORING ON EMPLOYEES PERFORMANCE IN IT INDUSTRY**" was conducted on _____, Monday at Gujarat Technological University.

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Prof. (Dr.) Faldu Rajesh Bavanjibhai

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Dr. Raju Rathod

2) (External Examiner 2) Name and Signature

ABSTRACT

In the contemporary workplace, monitoring employees and their performance has become increasingly important due to technological advancements and the rise of remote work. While employers view monitoring to enhance productivity, efficiency, security, and accountability, employees often express concerns about privacy and autonomy. Therefore, maintaining a balance between effective monitoring and respect for employee privacy is essential for a positive work culture. This study aims to address these differing perspectives and examine how monitoring technologies influence employee performance and organizational commitment.

The major objectives of this study are multifaceted, focusing on several key areas related to electronic monitoring in the workplace. Firstly, the study aims to evaluate the impact of electronic monitoring practices on the performance of employees. This involves analyzing how monitoring affects productivity, job satisfaction, and overall performance metrics. Secondly, it seeks to identify the perception of employees within the IT sector towards electronic monitoring and its subsequent impact on their performance. Understanding employees' attitudes and feelings towards being monitored can provide insights into how these practices influence their work behavior and efficiency. Thirdly, the study aims to differentiate between the various modes of monitoring preferred by employees and those implemented by the company. This comparison will help in understanding any discrepancies between what employees are comfortable with and what the company enforces, potentially highlighting areas for improvement.

Additionally, the study will highlight the major reasons that employees believe are behind the implementation of monitoring practices. This involves gathering employees' views on the rationale for monitoring, whether it's for productivity, security, compliance, or other reasons, and assessing how these beliefs affect their acceptance and cooperation. Finally, the study aims to provide recommendations to both management and employees for achieving a balanced approach towards electronic monitoring. This includes suggesting best practices, policies, and strategies that ensure monitoring is conducted in a fair, transparent, and effective manner, benefiting both the organization and its workforce.

The sample size of the study, consisting of 400 IT employees, was gathered using a structured questionnaire. This questionnaire included demographic factors such as gender, age, marital status, educational qualifications, experience, nature of family, and income. It also featured binary questions and Likert scale questions to assess employees' perceptions and measure the impact of monitoring on their performance. The research design implemented for the study is a Cross-Sectional Descriptive Design with Retrospective Self-Assessment, focusing on collecting data at a single point in time to allow respondents to reflect on their past experiences in comparison with their present ones. Snowball Sampling and Judgmental Sampling techniques were employed to reach the target sample from cities such as Ahmedabad, Gandhinagar, Baroda, Rajkot, and Surat in Gujarat state.

The findings show that monitoring practices negatively impact employee performance, highlighting the need for organizations to apply them ethically and thoughtfully. Transparency in how monitoring is done, fair and consistent policies, and a clear purpose behind data collection are key to building trust. Involving employees in decisions about monitoring and ensuring their feedback is valued helps create that trust. Data gathered through monitoring should be used constructively—for example, to identify training or development needs—rather than as a tool for punishment. A balanced approach improves both organizational effectiveness and employee well-being.

From the employees' side, engaging positively with monitoring systems and viewing them as opportunities for growth can make a difference. Open communication with management about concerns can help refine these systems. When monitoring becomes a shared effort instead of an imposed measure, it strengthens workplace harmony and aligns organizational goals with employee satisfaction and performance.

The findings not only provide insights into tailoring monitoring practices for certain organizations but also contribute to industry-wide benchmarking standards and best practices. The results provide ways to foster a workplace where employees feel supported, engaged, and aligned with organizational goals.

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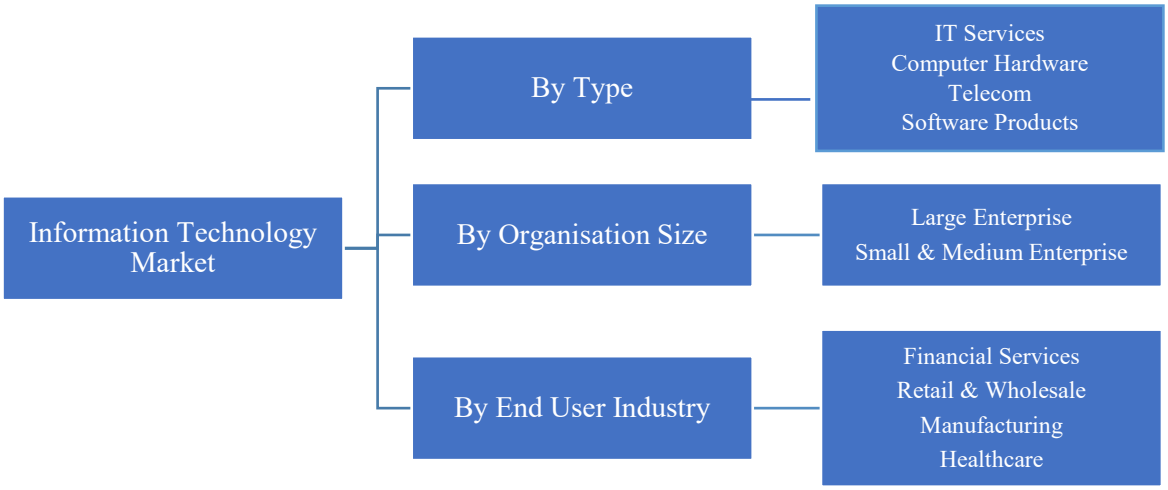
1.1 – OVERVIEW OF IT SECTOR

The Information Technology (IT) market includes revenues generated from services such as network management, system design, broadcasting, and technologies used for information transmission, including television and telecommunication systems. It also accounts for the value of goods supplied along with these services. In addition, the market covers the sale of hardware like computers, peripheral devices, and telecommunications equipment that support IT service delivery. The global IT market can be categorized into different segments, as illustrated in the following figure.

Chart No. 1.1.1: Segmentation of the Global Information Technology Market



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The IT market is further divided into several sub-segments, including hardware support services; software and business process outsourcing (BPO) services; cloud-based solutions; and hardware categories such as computers, peripheral devices, storage systems, and servers. It also covers telecommunication services (both wired and wireless), communication equipment, and satellite and telecom reselling activities. Additionally, the market comprises various software segments, including operating systems and productivity tools, database and backup solutions, enterprise and business analytics software, gaming software, and design, editing, and rendering applications. (The Business Research Company, 2023).

The Asia-Pacific region has emerged as the largest contributor to the global Information Technology (IT) market, driven by rapid digitalization, increasing cloud adoption, and strong economic growth across major economies such as China, India, and Japan (Grand View Research, 2024). The IT market has a global presence, covering countries across North America, Europe, Asia-Pacific, and other emerging regions, reflecting the widespread integration of technology across industries.

In the global economy, India has established itself as a leading exporter of IT and business services, supported by a large skilled workforce and cost advantages, with IT exports exceeding $150 billion in recent years (Reserve Bank of India, 2022). The country's IT and business services sector continues to expand due to rising global demand for digital solutions and outsourcing services (International Data Corporation, 2022).

The global IT market is highly competitive and includes major multinational corporations such as Apple, Microsoft, Verizon Communications, China Mobile, AT&T Inc., Huawei, Deutsche Telekom AG, Dell Technologies Inc., Samsung Electronics, and Comcast Corporation, which significantly contribute to innovation and global technological advancement.

Information technology services have become indispensable for organizations, as they enhance productivity, improve operational efficiency, and support cost-effective growth in a competitive environment. Furthermore, IT has facilitated improved access to public services such as healthcare, education, and governance by enabling efficient service delivery and promoting transparency (Grand View Research, 2024). Overall, the IT sector plays a crucial role in driving economic growth and generating large-scale employment opportunities worldwide (International Data Corporation, 2022).

1.2 – GLOBAL PERSPECTIVE OF IT INDUSTRY

The Information Technology (IT) industry enables organizations to enhance efficiency, improve communication, and manage complex data systems effectively. The increasing adoption of technologies such as cloud computing, artificial intelligence (AI), and analytics has further strengthened its importance. As digitalization accelerates, IT continues to act as a foundation for innovation and competitiveness worldwide (International Data Corporation, 2023; Gartner, 2023).

The United States remains a global leader in the IT industry, supported by innovation hubs like Silicon Valley. Major corporations such as Apple, Microsoft, and Amazon drive advancements in AI, cloud computing, and software solutions. Strong venture capital funding and a dynamic startup ecosystem further accelerate innovation. The country also plays a key role in cybersecurity development and global technological leadership (Gartner, 2023).

India has emerged as a major hub for IT services and outsourcing due to its large, skilled, and cost-effective workforce. Cities such as Bengaluru and Hyderabad serve as major technology centres, hosting companies like Tata Consultancy Services and Infosys. Government initiatives like Digital India and rapid startup growth in AI and fintech have strengthened the sector. India continues to play a significant role in global IT service delivery and exports (National Association of Software and Service Companies, 2023).

China, Japan, South Korea, and Israel are key contributors to global IT innovation. China leads in telecommunications and hardware manufacturing, while Japan excels in robotics and automation. South Korea is known for its advancements in semiconductors and 5G technology, and Israel is a global leader in cybersecurity and deep-tech startups. These countries continue to shape emerging technologies and digital ecosystems (Organisation for Economic Co-operation and Development, 2023).

In Europe, the IT industry is influenced by strong regulatory frameworks, particularly the General Data Protection Regulation. This regulation has set global standards for data privacy and security, impacting businesses worldwide. Countries such as Germany and the United Kingdom are advancing in industrial automation and fintech innovation. Europe also continues to invest heavily in AI research and ethical technology development (European Commission, 2023).

Canada and Australia are emerging as significant contributors to the global IT sector. Growth in these countries is driven by advancements in artificial intelligence, cloud computing, and cybersecurity. Cities like Toronto, Vancouver, Sydney, and Melbourne are becoming key technology hubs attracting global investment. Government support and strong research ecosystems further enhance their global competitiveness (Government of Canada, 2023; Australian Government, 2023).

Overall, the IT industry continues to be a cornerstone of global economic development by enabling innovation, connectivity, and job creation. Different regions contribute uniquely through advancements in software, hardware, telecommunications, and digital services. This interconnected global ecosystem promotes collaboration and knowledge sharing across borders. As digital transformation accelerates, the IT sector will remain central to shaping the future of economies worldwide (International Data Corporation, 2023).

1.3 – THE INDIAN IT LANDSCAPE

The Indian Information Technology (IT) industry has played a crucial role in positioning the country on the global stage. The IT-BPM sector has become a major contributor to economic growth, generating employment and improving living standards. It has also contributed significantly to exports and socio-economic development, making it one of the most dynamic sectors of the economy (National Association of Software and Service Companies, 2023).

The IT and IT-enabled Services (ITeS) sector includes a wide range of activities such as software development, engineering services, research and development, hardware services, and business process outsourcing. IT primarily involves the use of technology infrastructure to store, process, and exchange information for business objectives. ITeS refers to outsourced services like banking support, insurance processing, and customer service enabled through IT systems (NASSCOM, 2023). Government initiatives such as Software Technology Parks (STP), Special Economic Zones (SEZ), and the Digital India programme have supported the rapid growth of the IT industry. These initiatives have strengthened infrastructure, encouraged innovation, and enhanced India's global competitiveness. As a result, India has emerged as a leading provider of IT services and business solutions worldwide (MeitY, 2023; NASSCOM, 2023).

The IT sector is one of the largest employment generators in India, with a workforce exceeding 4 million professionals. It contributes significantly to exports and attracts substantial foreign direct investment (FDI). Additionally, IT services enhance productivity across industries and improve governance by enabling efficient delivery of public services and digital platforms (Ministry of Electronics and Information Technology, 2023).

The COVID-19 pandemic significantly impacted global economies, disrupting supply chains and business operations across sectors. However, the IT industry demonstrated resilience by enabling remote working and digital operations. Demand for digital solutions increased as organizations adopted work-from-home models and relied on technology to maintain continuity (International Data Corporation, 2022). During the pandemic, while many sectors struggled, the IT-BPM industry continued to grow and contributed significantly to India's GDP. The sector accounted for around 7.4% of GDP in FY22 and is projected to increase further due to rising demand for digital services. The widespread use of collaboration tools like Zoom and Microsoft Teams accelerated digital adoption (NASSCOM, 2023).

India is now entering the next phase of its digital transformation, supported by a large and rapidly growing internet user base. With affordable data and widespread connectivity, digital technologies are increasingly integrated into daily life and business operations. This expansion strengthens India's position as a global digital economy leader (Telecom Regulatory Authority of India, 2023).

Digital India has strengthened infrastructure and empowered citizens, driving rapid digital adoption. With support from government and private innovation, the IT sector has reshaped India into a technology-driven economy, fueling startups, entrepreneurship, and global tech leadership. (Ministry of Electronics and Information Technology, 2023).

1.4 – FACTS ABOUT INDIAN IT INDUSTRY

- India improved its position in the Global Innovation Index 2022, moving up to rank 40, reflecting stronger innovation capabilities.
- In FY22, leading IT firms such as Tata Consultancy Services, Wipro, and Infosys collectively planned to generate over 100,000 job opportunities due to rising demand for skilled professionals.
- The Indian IT industry recorded revenues of approximately USD 227 billion in FY22, marking robust year-on-year growth driven by digital transformation initiatives (National Association of Software and Service Companies).

- IT spending in India has shown strong growth, with projections exceeding USD 100 billion in 2022, reflecting increased enterprise technology investments (Gartner).
- The Indian software product industry is expected to witness significant expansion, potentially reaching USD 100 billion by 2025, supported by global market expansion strategies.
- India ranks among the top countries globally in cloud talent, with a large pool of professionals skilled in cloud technologies across industries.
- The data annotation market in India is experiencing rapid growth, driven by increasing adoption of artificial intelligence and demand for labeled data.
- Growth in the IT sector is supported by a combination of skilled, cost-effective talent and strong global demand for outsourcing and digital services.
- IT exports from India remain a major contributor to the economy, with services exports forming the largest share, followed by engineering R&D and software products.
- The sector has seen significant employment growth, adding hundreds of thousands of jobs and reaching a workforce of around 5 million professionals.
- Amazon Web Services expanded its infrastructure in India by launching a new Hyderabad region, expected to create substantial employment and investment opportunities.
- PwC India announced large-scale hiring plans in cloud and digital technologies to strengthen its workforce over the coming years.
- Google committed significant investment in India's digital ecosystem through its partnership with Bharti Airtel to accelerate digital growth.

1.5 – IT INDUSTRY ON AN UPWARD CURVE

The rapid expansion of the Indian IT industry over the past two decades has significantly enhanced the country's global image as a hub of knowledge and technical expertise. Economic liberalization policies, including reduced trade barriers and increased openness to foreign investment, have supported this growth. Government initiatives such as Software Technology Parks (STPs), Special Economic Zones (SEZs), and FDI reforms have further strengthened the sector's global competitiveness (Ministry of Electronics and Information Technology, 2023; National Association of Software and Service Companies, 2025).

The sector now makes a meaningful contribution to the national economy, accounting for a significant share of GDP and generating substantial export earnings, particularly from markets such as the United States. In addition, it serves as a major source of employment, offering opportunities across a wide spectrum of roles and skill levels.

India's position as a preferred destination for IT and IT-enabled services has been shaped by its ability to combine cost advantages with a large, skilled workforce. The expansion of digital technologies, including cloud computing, e-commerce, and platform-based solutions, has further accelerated the sector's development, aligning it with the growing global demand for digital transformation.

Since the economic reforms of the early 1990s, the Indian IT industry has expanded its global footprint, with companies operating across numerous countries. India accounts for a significant share of the global outsourcing market, reflecting its leadership in service delivery. The sector's revenue has grown substantially over the years and is expected to continue expanding due to rising global demand for technology services (NASSCOM, 2023). India's large pool of digitally skilled talent has positioned it as a key player in emerging technologies such as artificial intelligence, cloud computing, and data analytics. Leading firms like Tata Consultancy Services, Infosys, Wipro, and HCL Technologies employ a significant workforce and drive innovation. The expansion of IT services into tier-II and tier-III cities is further supporting inclusive growth (NASSCOM, 2025).

The IT industry has played a transformative role in India's economic and governance landscape by improving efficiency, transparency, and service delivery. With increasing adoption of advanced technologies and digital platforms, the sector is expected to play a vital role in the ongoing global digital revolution. India is well-positioned to remain a key contributor to the Fourth Industrial Revolution through continued innovation and technological advancement (International Data Corporation, 2023).

1.6 – INDIA'S TOP TECH CITIES

Table No 1.6.1: India's Top 20 Tech Cities

Rank	City	Rank	City
1	Bangalore	11	Lucknow
2	Hyderabad	12	Pune
3	Chennai	13	Vadodara
4	Mumbai	14	Jamshedpur
5	Kolkata	15	Nagpur
6	Ahmedabad	16	Nashik
7	Delhi	17	Agra
8	Chandigarh	18	Madurai
9	Kochi	19	Jaipur
10	Thiruvananthapuram	20	Vishakhapatnam

Bengaluru is widely recognized as the IT capital and the "Silicon Valley of India," owing to its strong ecosystem of technology firms, startups, and R&D centres. Major companies such as Infosys, Wipro, and Mindtree have established a significant presence here. The city's innovation-driven environment and skilled workforce make it a global technology hub (NASSCOM, 2023).

Hyderabad is known as "HITECH City" and often referred to as "Cyberabad" due to its advanced IT infrastructure and growing tech ecosystem. It has emerged as a major centre for IT, biotechnology, and bioinformatics industries. The city attracts global investments and hosts numerous multinational companies (Government of Telangana, 2023).

Chennai is a well-organized IT and BPO hub with robust infrastructure and dedicated IT parks. It hosts major firms such as Infosys, Tech Mahindra, Wipro, and HCL Technologies. The city plays a key role in India's outsourcing and back-office services industry (IDC, 2023).

Mumbai, primarily known as India's financial capital, also hosts a growing IT sector supporting banking and financial services. Companies such as Oracle Financial Services Software, 3i Infotech, and Mastek operate from here. Its strategic importance lies in fintech and enterprise solutions (IBEF, 2023).

Kolkata is an emerging IT hub in eastern India, with Salt Lake Sector V serving as the primary IT cluster. The city has seen steady growth in IT services and infrastructure, contributing to regional development (Government of West Bengal, 2023).

Ahmedabad is emerging as a prominent IT hub in western India, supported by strong infrastructure and policy initiatives. The development of Gujarat International Finance Tec-City has positioned the city as a global financial and technology centre, attracting multinational investments. Several IT and tech firms, including Microsoft and Wipro, have established operations in the region. Additionally, government support through Digital Gujarat initiatives and startup policies is fostering innovation, entrepreneurship, and employment growth in the IT sector (IBEF, 2023).

Gurugram is one of the fastest-growing IT hubs in northern India due to its modern infrastructure and proximity to Delhi. DLF Cyber City hosts major firms such as Cognizant, Mphasis, and Accenture. It is a preferred destination for multinational corporations (NASSCOM, 2025).

Chandigarh is growing as an IT and services hub in northern India, supported by companies like Tech Mahindra and Infosys. Its planned infrastructure and government support contribute to its emerging role in the tech sector (IBEF, 2023).

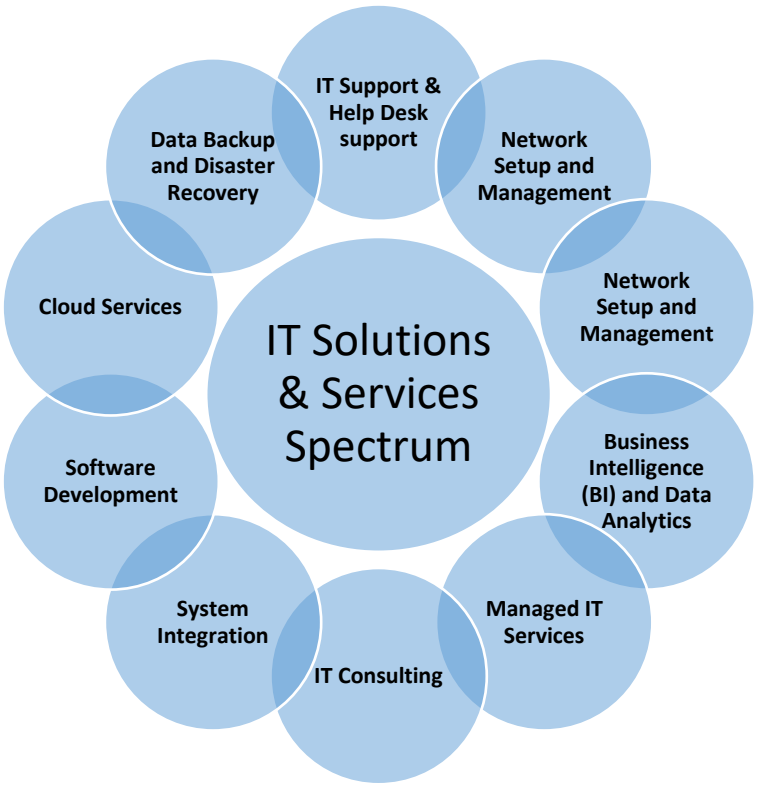
Kochi is a major IT hub in Kerala, with Cochin Special Economic Zone in Kakkanad serving as a key centre. The city supports IT exports and has attracted several domestic and global firms (Government of Kerala, 2023).

Thiruvananthapuram hosts Technopark, one of India's largest IT parks. It houses numerous leading IT companies and plays a vital role in Kerala's digital economy. The city is recognized for its contribution to IT infrastructure and innovation (Government of Kerala, 2023).

1.7 - IT SOLUTIONS AND SERVICES SPECTRUM

IT services play a crucial role in helping businesses leverage technology to improve efficiency, security, and overall performance. As technology becomes more integral to business operations, the demand for comprehensive and adaptable IT services continues to grow. The following figure represents the major services that IT industry offers:

Chart No 1.7.1: IT Solutions & Services Spectrum



Source: Author's Compilation

1.7.1 - IT Support and Help Desk Services

Technical support and help desk services are among the most commonly offered services by the IT sector. Through these services, technical issues are resolved efficiently, ensuring minimal downtime for businesses. Software and hardware problems are troubleshooted, network issues are addressed, and remote assistance is provided to users. As a result, operational continuity is maintained and overall productivity is enhanced.

1.7.2 – Network Setup and Management

Network infrastructure is set up and managed by IT service providers to support business operations. Local area networks (LANs), wide area networks (WANs), and wireless networks are designed, implemented, and maintained. Seamless communication and secure access are ensured through proper configuration. Reliable connectivity across the organization is thereby established and maintained.

1.7.3 – Cybersecurity Services

Digital assets are protected from cyber threats through cybersecurity services offered by IT companies. Firewalls, antivirus software, and encryption protocols are implemented to enhance security. Threat detection systems are deployed, and regular audits and penetration testing are conducted. Employee training is also provided to reduce vulnerabilities and prevent cyber-attacks.

1.7.4 – Data Backup and Disaster Recovery

Business continuity is ensured through data backup and disaster recovery services provided by IT companies. Data is securely stored in offsite locations or cloud platforms. In case of system failures or disasters, critical data is restored efficiently. The risk of data loss is minimized, and operational disruptions are reduced.

1.7.5 – Cloud Services

Cloud computing services are offered to enable remote storage and access to data and applications. Services such as cloud storage, virtual machines, and cloud migration are provided. Collaboration tools are also delivered through cloud platforms. Scalability is achieved without heavy investment in physical infrastructure, making operations more efficient.

1.7.6 – Software Development

Custom software solutions are developed by IT companies to meet specific business requirements. Web applications, mobile applications, and enterprise software are designed and delivered. Existing software is maintained, upgraded, and troubleshooted regularly. Smooth functioning and performance optimization are thereby ensured.

1.7.7 – System Integration

Various IT systems and software are integrated to function as a unified solution through system integration services. Existing software, hardware, and networks are combined to ensure seamless operations. Workflow efficiency is improved, and data sharing is enhanced across platforms. Redundancies in business processes are thereby reduced.

1.7.8 – IT Consulting

IT consulting services are provided to guide businesses in selecting and implementing appropriate technology solutions. Strategic advice is offered on IT infrastructure, software deployment, cybersecurity, and digital transformation. Technology investments are aligned with organizational goals through expert recommendations. Long-term efficiency and performance are thereby enhanced.

1.7.9 – Managed IT Services

IT operations and management are outsourced to third-party providers under managed IT services. Networks are monitored, data centres are managed, and regular software updates are performed. Continuous system performance and security are ensured through proactive support. Businesses are enabled to focus on their core activities.

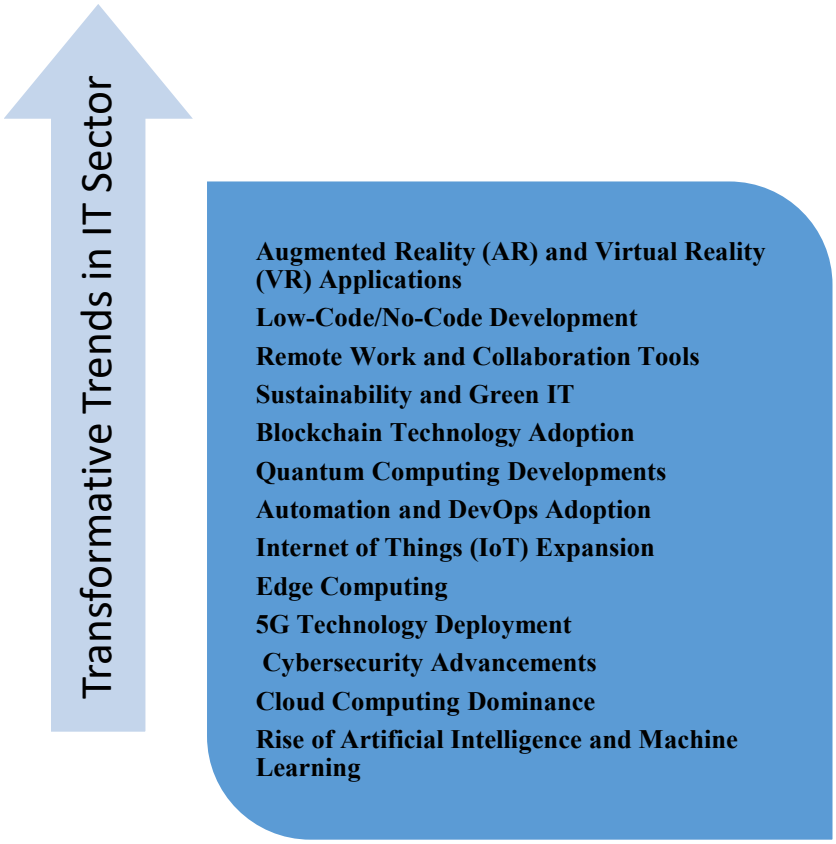
1.7.10 – Business Intelligence (BI) and Data Analytics

Business intelligence and data analytics services are provided to analyse large volumes of data effectively. Performance metrics are tracked, and actionable insights are generated using analytical tools. Decision-making processes are improved through data-driven strategies. Operational efficiency and customer experience are thereby enhanced.

1.8 - TRANSFORMATIVE TRENDS IN IT SECTOR

A significant shift is being witnessed in the IT sector from traditional services such as hardware support and network management to advanced digital transformation services. This transition is driven by the growing need for businesses to remain competitive in a technology-driven environment. Processes are being automated, customer experiences are being enhanced, and data-driven decision-making is being enabled through digital transformation. As a result, a new era of innovation-led IT service delivery is being established, offering greater flexibility, scalability, and efficiency (International Data Corporation, 2023; Gartner, 2023).

Chart No 1.8.1: Transformative Trends in the IT Sector



Source: Author's Compilation

1.8.1 – Artificial Intelligence and Machine Learning

Artificial Intelligence (AI) and Machine Learning (ML) are increasingly being adopted across industries to support automation and data-driven decision-making. Tools such as predictive analytics and intelligent virtual assistants are being widely utilized. Valuable insights are being generated through advanced data analysis techniques. Operational efficiency and personalized user experiences are thereby enhanced.

1.8.2 – Cloud Computing Dominance

Cloud computing is being extensively used to provide scalable and flexible IT infrastructure. A transition from traditional on-premises systems to hybrid and multi-cloud environments is being observed. Services such as SaaS, PaaS, and IaaS are being widely implemented. Cost efficiency, collaboration, and data accessibility are thereby improved.

1.8.3 – Cybersecurity Advancements

Advanced security solutions are being adopted to combat the increasing complexity of cyber threats. Technologies such as multi-factor authentication, zero-trust models, and intelligent threat detection systems are being implemented. Continuous monitoring and preventive measures are being emphasized. Protection of digital assets is thereby strengthened.

1.8.4 – 5G Technology Deployment

The deployment of 5G technology is being accelerated to enable high-speed data transfer and reduced latency. Improved connectivity is being achieved, supporting modern applications such as IoT and smart infrastructure. New opportunities for innovation and digital services are being created. Business operations are thereby enhanced through faster communication networks.

1.8.5 – Edge Computing

Edge computing is being increasingly utilized to process data closer to its source. Latency and bandwidth usage are being reduced through decentralized data processing. Real-time analysis is being enabled, especially in sectors requiring immediate decision-making. System efficiency and responsiveness are thereby improved.

1.8.6 – Internet of Things (IoT) Expansion

IoT technologies are being widely adopted to connect devices and enable continuous data collection across industries. Smart homes, wearable devices, and connected vehicles are increasingly being integrated into daily life. Real-time monitoring and data-driven insights are being utilized to optimize operations. Customer experiences and operational efficiency are thereby enhanced.

1.8.7 – Automation and DevOps Adoption

Automation and DevOps practices are being implemented to streamline the software development lifecycle. Repetitive tasks are being automated, and collaboration between development and operations teams is being improved. Faster and more reliable software delivery is being achieved. Agility, product quality, and time-to-market are thereby enhanced.

1.8.8 – Quantum Computing Developments

Quantum computing is being explored as an emerging technology capable of solving complex problems beyond traditional computing capabilities. Significant investments are being made in research and development. Potential applications are being identified in areas such as cryptography and artificial intelligence. Transformational impacts across industries are thereby anticipated.

1.8.9 – Blockchain Technology Adoption

Blockchain technology is being adopted beyond cryptocurrencies for secure and transparent data management. Decentralized and tamper-resistant systems are being implemented across industries. Applications in supply chain, finance, and healthcare are being expanded. Trust, security, and transparency are thereby improved.

1.8.10 – Sustainability and Green IT

Sustainable practices are being integrated into IT operations to reduce environmental impact. Energy-efficient data centres and optimized resource usage are being emphasized. Eco-friendly technologies and infrastructure are being adopted by organizations. Cost efficiency and environmental responsibility are thereby achieved.

1.8.11 – Remote Work and Collaboration Tools

Remote work solutions and collaboration platforms are being widely adopted to support

distributed work environments. Virtual communication and project management tools are being utilized to maintain productivity. Seamless collaboration among teams is being enabled through digital platforms. Business continuity and workforce flexibility are thereby ensured.

1.9 - GOVERNMENT INITIATIVES

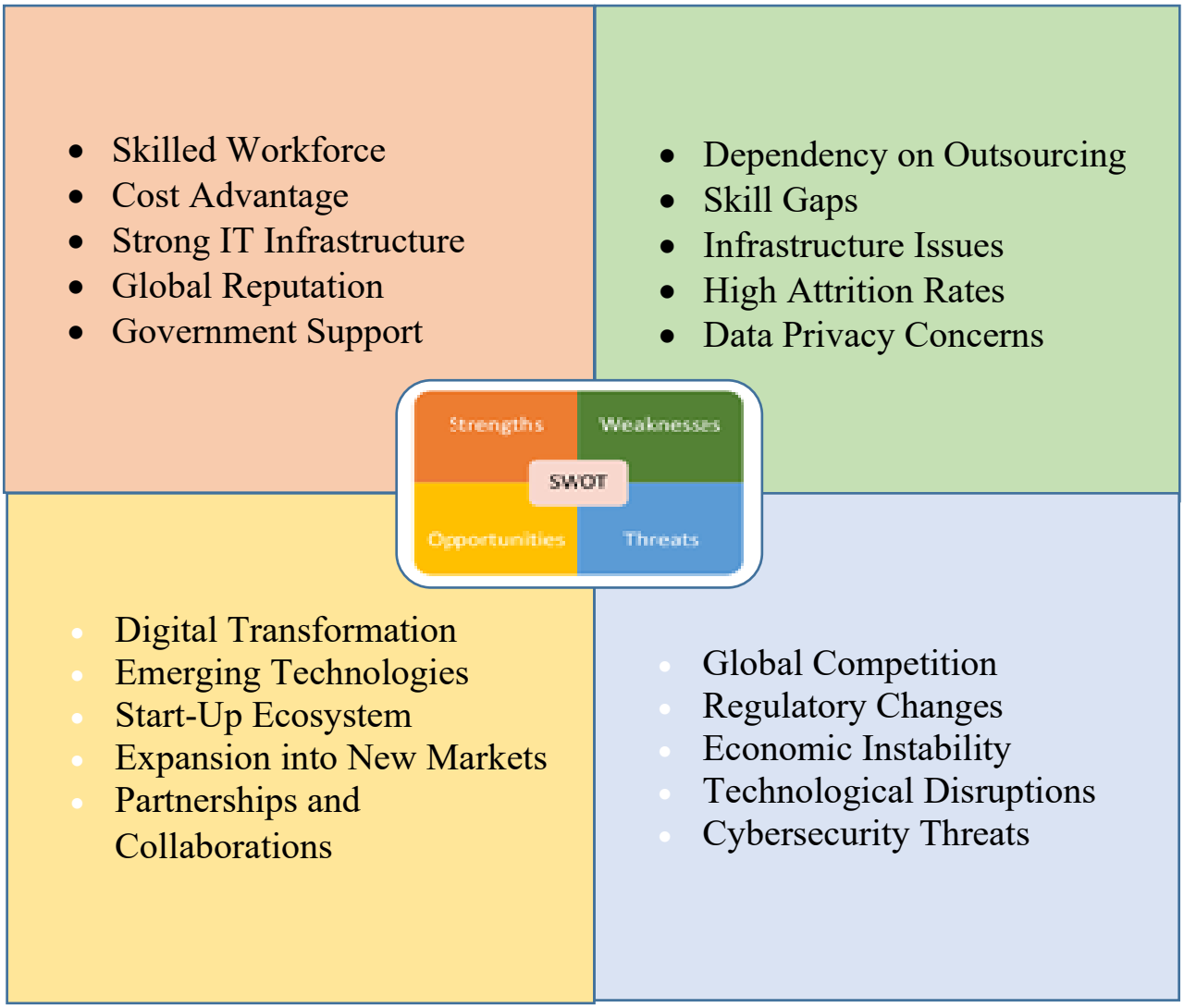
- In 2025, continued investments were made in AI innovation, research, and skill development. These efforts aim to strengthen India's position as a global leader in emerging technologies (PIB, 2025; MeitY, 2025).
- In 2025, the Digital Personal Data Protection (DPDP) Rules were introduced to operationalize India's data protection framework. These rules aim to ensure responsible data processing and strengthen individual privacy rights (MeitY, 2025; PIB, 2025).
- In 2024, the government introduced frameworks to promote blockchain adoption in governance and digital services. These initiatives support secure, transparent, and decentralized systems in public administration
- In 2023–24, the Union Budget allocated ₹97,579 crore to the IT and telecom sector, reflecting a strong push toward digital infrastructure. This funding supports connectivity expansion, innovation, and technology-led economic growth.
- In 2022, the Telecommunications Bill was introduced to modernize India's telecom framework. It aims to improve regulatory clarity, enhance consumer protection, and support emerging communication technologies.
- In 2022, international cybersecurity collaboration was strengthened through the "Synergy" exercise. This initiative enhanced global cooperation and preparedness against ransomware and cyber threats.
- By FY2022, exports through Software Technology Parks of India (STPI) had grown significantly. This reflects the rising contribution of IT services to India's export economy.
- In 2022, Digi Locker services were integrated with platforms like WhatsApp. This improved accessibility and convenience for citizens in managing official documents digitally.
- In 2022, updated cybersecurity directions were issued to strengthen digital safety. These measures focus on improving incident response and ensuring a secure IT ecosystem.

- In 2022–23, the Union Budget allocated ₹88,567 crore to IT and telecom. Continued investment has supported infrastructure growth and technological advancements.
- The Software Technology Park (STP) scheme, introduced earlier and ongoing, has consistently promoted export-oriented software development. It has played a key role in establishing India as a global IT hub.
- In 2021, internet exchange infrastructure was expanded to improve connectivity in regions like Uttarakhand. This initiative enhanced internet quality and accessibility.
- In 2021, plans for cyber labs and capacity-building programs were introduced. These initiatives aimed to strengthen cybersecurity skills and investigation capabilities.
- In 2021, digital inclusion programs were launched to expand internet access across India. These efforts focused on connecting remote and underserved areas.
- In 2021, digital governance projects such as state-level enterprise architecture initiatives were implemented. These improved public service delivery through technology integration.
- In 2021, schemes supporting research in emerging technologies were introduced. These programs encouraged innovation in IT, electronics, and digital services.
- In 2021, new training centres and institutes were established to enhance skill development. This helped in building a workforce aligned with industry demands.
- In 2021, international collaborations and technology platforms were launched. These partnerships strengthened advancements in areas like 5G, telecom security, and manufacturing innovation.
- Since its launch in 2020, the Atmanirbhar Bharat initiative has emphasized domestic hardware manufacturing. Recent efforts focus on semiconductor production to reduce import dependency and boost self-reliance.

1.10 – IT INDUSTRY: SWOT ANALYSIS

This comprehensive SWOT analysis highlights the key factors influencing the Indian IT industry, providing insights into its current strengths, areas for improvement, growth opportunities, and potential threats.

Chart No 1.10.1: SWOT Analysis of the IT Industry



Source: Author's Compilation

1.10.1 Strengths

- **Skilled Workforce:** India has a vast base of qualified IT professionals, many with strong English communication skills, enabling smooth interaction with international clients. The education system consistently produces a large number of engineering and IT graduates, ensuring a continuous talent pipeline.

- **Cost Advantage:** Labour costs in India are comparatively lower than in Western nations, making it a cost-effective hub for outsourcing and offshoring. This allows companies to significantly reduce operational expenses while maintaining efficiency.
- **Strong IT Infrastructure**: The country has built a solid IT ecosystem, especially in cities like Bengaluru, Hyderabad, Pune, Chennai, and Mumbai. These locations host advanced IT parks and SEZs that offer high-quality infrastructure and facilities.
- **Global Reputation:** Leading firms such as Tata Consultancy Services, Infosys, Wipro, and HCL Technologies have built strong international credibility through quality services and innovation, strengthening India's position globally.
- **Government Support:** The government actively promotes the IT sector through policies and initiatives like Digital India, along with incentives, tax benefits, and funding programs that encourage growth and investment.

1.10.2 Weaknesses

- **Dependency on Outsourcing**: A large portion of India's IT revenue depends on outsourcing contracts from regions like the United States and Europe, making the sector sensitive to external economic and regulatory changes.
- **Skill Gaps**: Despite having a large workforce, there is a shortage of specialized skills in advanced domains such as AI, cybersecurity, blockchain, and data analytics, which can impact competitiveness.
- **Infrastructure Issues:** While major cities are well-developed, several other regions still face issues like unreliable power supply, weak internet connectivity, and inadequate transport systems, limiting IT expansion.
- **High Attrition Rates:** Frequent job changes among employees lead to high turnover, increasing recruitment and training costs and making talent retention difficult.
- **Data Privacy Concerns**: With growing emphasis on data protection, companies must adopt strong security measures, as any breach can damage reputation and lead to legal consequences.

1.10.3 Opportunities

- **Digital Transformation:** The increasing global adoption of digital technologies offers immense growth potential for Indian IT firms to expand and diversify their services.
- **Emerging Technologies**: Innovations in AI, machine learning, blockchain, and IoT create new opportunities for companies to develop advanced solutions and gain a competitive edge.
- **Start-Up Ecosystem:** India's growing start-up culture, especially in technology, promotes innovation and new business models, contributing to the sector's expansion.
- **Expansion into New Markets**: Emerging regions in Asia, Africa, and Latin America present untapped opportunities for IT services as digital adoption rises in these areas.
- **Partnerships and Collaborations**: Strategic alliances with global organizations can enhance technological capabilities, broaden market access, and support joint innovation efforts.

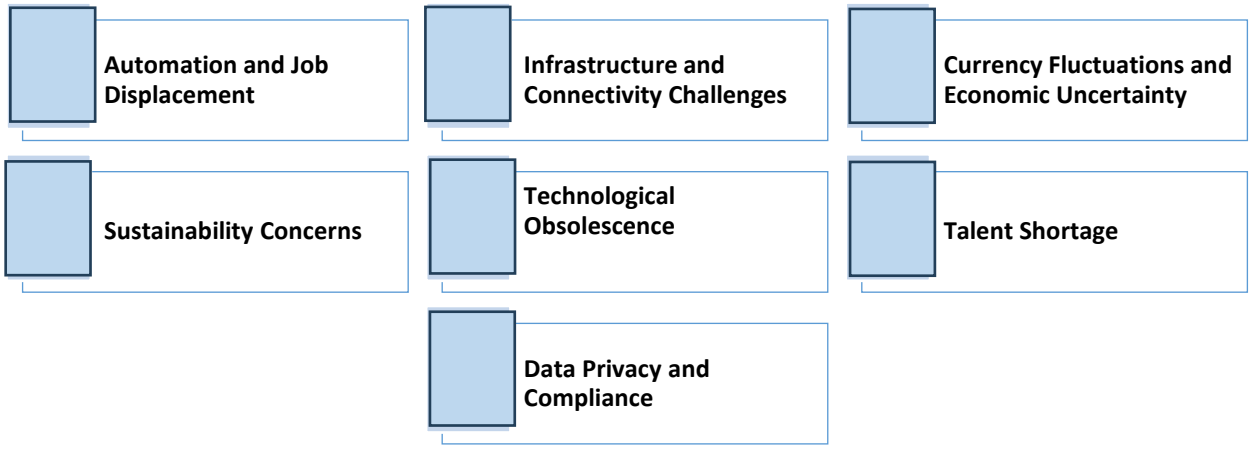
1.10.4 Threats

- **Global Competition:** Countries such as China, Philippines, Vietnam, and nations in Eastern Europe are becoming strong competitors in IT outsourcing with similar cost benefits.
- **Regulatory Changes**: Modifications in global trade rules, visa policies, and data protection laws can affect business operations and workforce mobility.
- **Economic Instability:** Global recessions and financial uncertainties may reduce client spending on IT services, impacting revenue growth.
- **Technological Disruptions:** Rapid technological advancements can make existing skills outdated, requiring continuous learning and innovation.
- **Cybersecurity Threats:** Increasingly complex cyber-attacks pose serious risks, making strong security systems essential to safeguard data and maintain client trust.

1.11 - EMERGING CHALLENGES & PROBLEMS FACED BY IT INDUSTRY

The IT sector, while a cornerstone of modern business and technological advancement, is not without its challenges. Following is an elaboration on the major problems faced by the global IT industry

Chart No 1.11.1: Emerging Challenges & Problems faced by IT Industry



Source: Author's Compilation

1.11.1 – Data Privacy and Compliance

The complexity of regulatory compliance is being increased by the enforcement of global data protection laws such as the General Data Protection Regulation and similar frameworks in other regions. Adherence across multiple jurisdictions is required, leading to higher operational costs and governance challenges for IT firms. Risks of financial penalties and reputational damage are faced in cases of non-compliance, making robust data governance essential (European Commission, 2018; NASSCOM, 2025).

1.11.2 – Talent Shortage

A significant shortage of skilled professionals is being experienced in advanced domains such as AI, cybersecurity, and data science. The rapid evolution of technology is not always matched by educational and training systems, resulting in a persistent skills gap. Increased competition for qualified talent is being observed, which drives up costs and creates hiring challenges (World Economic Forum, 2023)

1.11.3 – Technological Obsolescence

Continuous technological advancements are causing existing systems and skills to become outdated at a rapid pace. Regular investments in upgrading infrastructure and capabilities are required to maintain competitiveness. Failure to adapt is often associated with inefficiencies and security risks, thereby placing financial and operational pressure on organizations (McKinsey & Company, 2023).

1.11.4 – Sustainability Concerns

Significant environmental concerns are being raised due to the high energy consumption of data centres and IT infrastructure. Greater emphasis is being placed on adopting energy-efficient systems, minimizing e-waste, and implementing sustainable practices. Increasing regulatory and societal expectations are driving companies to balance growth with environmental responsibility (International Energy Agency, 2022).

1.11.5 – Currency Fluctuations and Economic Uncertainty

The performance of the IT sector is being influenced by dependence on export markets such as the United States and Europe. Currency volatility, geopolitical developments like Brexit, and global economic slowdowns are impacting demand and revenue stability. Increased protectionist policies are also being considered a potential challenge for outsourcing-driven growth (World Bank, 2023).

1.11.6 – Infrastructure and Connectivity Challenges

Infrastructure limitations are still being faced, particularly in Tier 2 and Tier 3 cities across India. Issues such as inconsistent power supply, limited internet bandwidth, and underdeveloped IT facilities are affecting expansion efforts. Addressing these gaps is considered essential for achieving balanced regional growth (Ministry of Electronics and Information Technology, 2023).

1.11.7 – Automation and Job Displacement

The adoption of automation and advanced technologies such as AI and machine learning is leading to potential displacement of routine job roles. Labour-intensive processes are increasingly being replaced by automated systems, creating a need for workforce reskilling. A shift toward higher-value services like advanced analytics and innovation-driven solutions

is being emphasized to sustain competitiveness (World Economic Forum, 2023; NASSCOM, 2023).

1.12 – FUTURE PATHWAY OF IT INDUSTRY

India has firmly established itself as a major global hub for IT offshoring, efficiently delivering services to international clients through both onshore and offshore models. Indian firms are increasingly adopting advanced technologies, opening new growth opportunities across emerging areas.

The IT and business services sector is expected to witness strong expansion, with industry value projected to grow significantly in the coming years. Rising IT spending and continuous global demand are further supporting this upward trajectory.

There is also a growing emphasis on strengthening domestic capabilities in areas like semiconductor manufacturing and electronics, supported by policy initiatives and investments. At the same time, the rapid adoption of cloud computing is expected to create large-scale employment and contribute substantially to economic growth.

Global technology leaders such as Amazon Web Services are playing a crucial role in shaping the future of India's IT landscape through investments in cloud infrastructure, AI integration, and workforce training. These efforts are enhancing innovation, improving efficiency, and creating high-value job opportunities across sectors.

Additionally, the shift toward remote and hybrid work models is transforming how IT services are delivered. Cloud-based tools and digital platforms have enabled greater flexibility, improved productivity, and access to a wider talent pool, making organizations more agile and scalable.

Overall, with the combined impact of technological advancements, global investments, and evolving work models, India's IT industry is well-positioned to achieve sustained growth and strengthen its leadership in the global digital economy.

1.13 CONCEPT OF EMPLOYEE MONITORING

Employee monitoring is defined as the practice of observing and recording employees' activities to evaluate performance, ensure productivity, and protect organizational resources (Ball, 2010). Traditionally, employers relied on managers to oversee employees, maintain work schedules, and log completed tasks. The presence of supervision acted as a motivator for employees to stay productive, and managers could account for the quantity and quality of work completed.

With the introduction of technology in the late 20th century, tools such as surveillance cameras, ID logging systems, and desktop timers began to complement or replace direct managerial oversight. Over the years, technological advancements have significantly expanded monitoring capabilities, enabling employers to track employees' online activities, browsing history, emails linked to the organization, and software usage (Moussa, 2015).

In modern workplaces, every digital interaction—including emails, instant messages, calls, keystrokes, and code written—leaves a trace. These digital signals allow organizations to analyze employee behavior patterns and make **data-driven decisions** to improve efficiency and innovation (Lohr, 2013). In addition to digital monitoring, employees' physical activities may also be observed through devices such as hidden cameras, often without their awareness.

Employee monitoring today serves purposes beyond tracking productivity. It also helps prevent breaches of security, misuse of organizational resources, and violations of compliance protocols (Morris et al., 2017). However, extreme monitoring can be perceived as an invasion of privacy, particularly when employees have access to sensitive organizational information. Monitoring tools are frequently deployed to mitigate risks, including preventing unauthorized use of company resources or online activities for personal purposes (Yerby, 2017).

Studies show that employee monitoring has increased substantially over the past decades. The American Management Association reported a 45% rise in companies using monitoring practices since 1997. Research indicates that nearly 25% of employees have been involved

in data breaches, sometimes unknowingly, highlighting the necessity of monitoring (Verizon, 2017). Nonetheless, excessive surveillance can erode trust, with surveys showing only 10% of employees trust employers who use monitoring software, while 22% are concerned about access to personal information (Clutch, 2020).

During the COVID-19 pandemic, there was a surge in the use of employee monitoring software such as WorkIQ, Desk Time, StaffCop, Teramind, Hubstaff, Clever Control, and Time Doctor. These tools track computer activity, record keystrokes, take screenshots, and generate reports on employee behavior, which can influence performance evaluation, promotions, and disciplinary actions (Agu, 2016). Mobile tracking systems also provide logistical and time-oriented metrics to improve safety and operational efficiency. While these tools offer insights into productivity, they can also contribute to stress, privacy concerns, and perceptions of harassment.

Although monitoring tools improve operational efficiency and decision-making, overreliance on metrics can narrow organizational focus and reduce attention to qualitative contributions (Ball et al., 2019). Organizations must therefore adopt fair and transparent monitoring practices to safeguard information systems while respecting employees' privacy and promoting a supportive work environment.

1.14 DIFFERENCE BETWEEN ELECTRONIC MONITORING AND TRADITIONAL MONITORING

Electronic monitoring (EM) differs significantly from traditional supervision in its psychological impact. Unlike direct oversight, it enables employers to monitor employees continuously or at intervals, in ways that can be either subtle or highly intrusive, and sometimes even without their full awareness.

This form of monitoring generates detailed and lasting data that managers can easily access, not all of which is directly related to job performance. As a result, the boundary between professional evaluation and personal observation often becomes blurred.

Moreover, EM extends beyond observable work behavior to capture internal expressions and private activities. Tools such as email monitoring can reveal employees' thoughts and emotions, while social media tracking maps both workplace and external interactions. Advanced technologies further enhance this scope by collecting biometric data, including indicators like heart rate or body temperature, making monitoring more comprehensive and personal.

Traditional monitoring, in contrast, relies on deliberate data collection constrained by supervisor attention. Supervisors typically observe specific behaviors within defined work contexts (Stanton, 2000). EM, however, enables incidental and continuous data capture with minimal concern for context or immediate purpose. Cameras, for example, installed to prevent theft may also record arrival and departure times, break patterns, interactions among employees, and other personal behaviors, producing large but potentially ambiguous datasets from both interpretive and ethical perspectives (West & Bowman, 2016).

Research comparing EPM to traditional monitoring shows differences in employee work patterns, compliance, and social facilitation effects. Traditional monitoring often fosters immediate feedback and social facilitation, motivating employees through in-person interactions (Griffith, 1993; Aiello & Svec, 1993; Laird, Bailey, & Hester, 2018). Conversely, EPM's impersonal and often invisible nature may contribute to disengagement or counterproductive behaviors due to perceived intrusiveness and lack of direct supervisory interaction (Aiello & Kolb, 2019; Boyce, 2017).

EPM allows continuous, automated tracking of multiple performance metrics, offering more comprehensive data than intermittent traditional methods (Charbonneau & Doberstein, 2020). This granularity enables precise performance management but can intrude on employee privacy and autonomy. While traditional evaluations often encourage relational psychological contracts based on trust and long-term engagement, EPM tends to foster transactional relationships, potentially increasing stress, burnout, and reducing job satisfaction (Ravid et al., 2020; Miao & Yu, 2023).

Despite its intrusive nature, EPM provides objective, data-driven insights into employee behavior, productivity, and engagement patterns, which can enhance accountability, workflow efficiency, and detection of deviant behaviors such as cyberloafing (Henle et al.,

2009; Charbonneau & Doberstein, 2020). However, its impersonal approach contrasts with traditional monitoring's social facilitation effect, where face-to-face feedback fosters focus and motivation, whereas EPM may signal a lack of trust and promote transactional relationships (Miao & Yu, 2023; Aiello & Kolb, 1995).

To mitigate negative psychological effects and maintain trust, organizations should balance EPM with policies that protect privacy and autonomy. Transparent communication about monitoring purposes and limiting its use to developmental support rather than strict surveillance can sustain employee well-being while preserving the benefits of EM (Kalischko & Riedl, 2021). This approach allows EPM to function as a tool for growth and accountability rather than constant oversight.

Considering scope and granularity of behavioral prediction, Traditional monitoring primarily relies on observable actions and periodic feedback, limiting managers to evaluating discrete, task-focused behaviors. In contrast, EM leverages advanced analytics, machine learning, and predictive modelling to anticipate future employee behaviors based on historical digital footprints, such as email patterns, software usage, and communication networks (Ajunwa, Crawford, & Schultz, 2017; Montealegre & Cascio, 2017). This predictive capability enables organizations to proactively identify potential productivity bottlenecks, engagement declines, or security risks before they manifest, a feature largely impossible with traditional oversight. Furthermore, EM can uncover subtle correlations between work habits and outcomes—such as how multitasking on certain applications may affect error rates—that traditional methods might never detect due to their reliance on limited, episodic observations. This forward-looking aspect of EM marks a profound shift from reactive supervision to strategic workforce management, emphasizing prevention and optimization rather than simple accountability.

1.15 ELECTRONIC MONITORING PRACTICES AT WORLDWIDE

Electronic monitoring has become a widely adopted practice across industries and regions, reflecting the growing need for organizations to enhance security, ensure compliance, and boost productivity in a digital age. Governments, corporations, and institutions across the globe are implementing electronic monitoring solutions tailored to their specific needs.

Chart No. 1.15.1: Electronic Monitoring Practices at Worldwide

Source: Authors Compilation

1.15.1. Workplace Productivity Monitoring

Across regions such as the US, UK, and Europe, organizations have broadly adopted electronic monitoring to evaluate employee productivity. These systems track internet activity, application usage, and overall work behavior. Methods like keystroke tracking, screen capture, and activity logs assist employers in assessing whether productivity targets are being met, especially in remote or hybrid environments. However, regulations like GDPR mandate that employers maintain transparency and obtain employee consent before implementing such monitoring (Ajunwa, Crawford, & Schultz, 2017).

1.15.2. Cybersecurity and Data Protection

As cyber threats continue to rise, organizations worldwide are integrating electronic monitoring into their cybersecurity frameworks. Industries such as finance, healthcare, and government rely on these tools to oversee network traffic, identify irregularities, and prevent unauthorized access to confidential information. In the U.S., compliance with laws like HIPAA and the Sarbanes-Oxley Act requires strict data protection measures, including monitoring system usage and access (Lohr, 2013).

1.15.3. Compliance Monitoring

Organizations operating in regulated environments must adhere to legal standards such as GDPR, HIPAA, and PCI DSS. To ensure compliance, companies use electronic monitoring systems to record employee interactions with sensitive data and track system modifications. This helps in preventing data breaches while maintaining required privacy and security standards (Yerby, 2017).

1.15.4. Government Surveillance and Public Safety

Governments in various countries employ electronic monitoring to strengthen public safety and maintain law enforcement. For instance, China utilizes technologies like facial recognition and social media tracking to monitor activities and prevent crime, as noted in surveillance studies (Montealegre & Cascio, 2017). In the United States, electronic

monitoring is also used within the justice system to track parolees and probationers, ensuring adherence to legal conditions.

1.15.5. Remote Employee Monitoring

The expansion of remote work, particularly after the COVID-19 pandemic, has led to widespread adoption of employee monitoring tools globally. Countries such as India, the Philippines, and parts of Europe use systems like time trackers, VPN monitoring, and task management software to oversee remote workforce performance and data security. This is especially important in sectors like IT outsourcing and financial services where remote operations are critical (Charbonneau & Doberstein, 2020).

1.15.6. Electronic Monitoring in Transportation and Logistics

The transportation and logistics industry extensively uses electronic monitoring to manage fleets and ensure regulatory compliance. In the United States, the FMCSA requires Electronic Logging Devices (ELDs) in commercial vehicles to monitor driver working hours and enhance road safety. Similarly, European companies employ GPS and telematics systems to track routes, fuel efficiency, and driver behavior, improving operational performance (Stanton, 2000).

1.15.7. Surveillance in Retail and Public Spaces

Retail businesses across the world use electronic monitoring systems to prevent theft, analyze customer behavior, and improve security. Technologies such as CCTV, facial recognition, and point-of-sale tracking are commonly used in countries like the U.S., UK, and Japan. Additionally, major cities such as London, Beijing, and Singapore rely on advanced surveillance systems to manage public safety and crowd control (Henle et al., 2009).

1.15.8. Monitoring in Education

Educational institutions in regions like the U.S., Australia, and Europe employ electronic monitoring for purposes such as attendance tracking, online exam security, and maintaining academic integrity through plagiarism detection tools. With the growth of online learning, learning management systems (LMS) are also used to monitor student participation, assignment submissions, and engagement levels (Miao & Yu, 2023).

1.15.9. Health Monitoring Systems

In countries such as the United States, Japan, and South Korea, electronic monitoring plays a significant role in healthcare delivery. Wearable devices and IoT-based systems enable continuous tracking of patient health indicators, allowing early detection of issues and timely medical response. These technologies are particularly beneficial for managing chronic conditions, elderly care, and recovery after medical procedures, while also helping reduce healthcare costs (Kalischko & Riedl, 2021).

1.15.10. Employee Surveillance in High-Risk Industries

In high-risk sectors like manufacturing, construction, and oil and gas, electronic monitoring is widely used to enhance worker safety and ensure regulatory compliance. Countries such as Germany, Canada, and Brazil utilize technologies like wearable sensors, CCTV, and real-time tracking systems to monitor worker movements, identify potential hazards, and enforce safety measures. This has contributed to a reduction in workplace accidents and improved safety outcomes (Aiello & Kolb, 2019).

1.16 ELECTRONIC MONITORING PRACTICES IN INDIA

In India, electronic monitoring has gained significant traction across various sectors, reflecting the country's growing reliance on technology for managing operations, ensuring compliance, and enhancing security. The rise of digital transformation, along with the increased use of remote work solutions, has driven Indian organizations to adopt electronic monitoring tools to maintain productivity and efficiency. Here are some of the key areas where electronic monitoring practices are implemented in India:

Chart No. 1.16.1: Electronic Monitoring Practices in India

Source: Authors Compilation

1.16.1. Remote Work Monitoring

The COVID-19 pandemic accelerated remote work in India, increasing the use of electronic monitoring tools to track productivity and maintain data security. Organizations, especially in IT and BPO sectors, use systems that monitor keystrokes, application usage, and internet activity. Studies highlight a growing reliance on tools like biometric attendance, internet tracking, and productivity software to manage employee performance (Bali et al., 2025).

1.16.2. Cybersecurity and Data Compliance

The expansion of India's digital economy has increased the need for cybersecurity monitoring due to higher digital transactions and data flows. Companies in finance, healthcare, and IT use monitoring systems to detect threats and ensure compliance with the Information Technology Act, 2000 and RBI guidelines. Emerging laws like the DPDP Act require that employee data collection be transparent, justified, and limited to specific purposes..

1.16.3. Government Surveillance and Public Safety

The Indian government extensively uses electronic monitoring for public safety, crime prevention, and internal security. CCTV systems are widely deployed in urban areas, used for traffic management and law enforcement. Cities such as Delhi and Mumbai collaborate with law enforcement to integrate facial recognition technologies and video surveillance to identify suspects and enhance public safety. Additionally, monitoring technologies play roles in border security operations to observe activities in high-risk regions. (Rai & Sinha, 2019).

1.16.4. Monitoring in the Education Sector

In India's education system, electronic monitoring has expanded with the rise in online learning and examination platforms. Universities and professional certification bodies employ proctoring software to uphold academic integrity and prevent malpractice during remote exams. Educational institutions also use digital tools to track student attendance, participation in online activities, and assignment submissions, helping improve engagement and learning outcomes. (Patil & Gupta, 2021).

1.16.5. Electronic Monitoring in the Corporate Sector

Indian corporations across IT, telecom, and manufacturing sectors employ monitoring technology to enhance operational efficiency and workplace safety. Organizations use a combination of CCTV surveillance, biometric access controls, and workforce tracking systems to manage security risks and assess productivity. In manufacturing, IoT sensors and wearable devices are increasingly used to monitor equipment status and worker behavior in real time to ensure compliance with safety protocols and reduce accidents.

1.16.6. Employee Surveillance in IT and BPO Industries

India's IT and BPO industries, which are major contributors to economic output, depend heavily on electronic monitoring for productivity, compliance, and data protection. These sectors implement stringent surveillance mechanisms—such as activity tracking, VPN usage audits, and real-time internet monitoring—to secure client data and meet international compliance requirements for outsourcing projects, especially when handling sensitive financial or healthcare information. (Singh, R., & Das, N., 2022)

1.16.7. Health Monitoring and Telemedicine

Electronic health monitoring has grown in India alongside the adoption of telemedicine platforms. Wearable devices and mobile health applications allow remote tracking of patient vitals—such as heart rate, glucose levels, and activity—enabling doctors to monitor chronic conditions in underserved areas. Hospitals and healthcare providers in urban centres like Bengaluru and Delhi increasingly rely on electronic health records (EHR) and telemedicine solutions to reduce strain on physical healthcare infrastructure and deliver timely interventions. (Kumar, Gupta, & Reddy, 2021)

1.16.8. Fleet and Logistics Monitoring

India's logistics and transportation sector heavily relies on electronic monitoring to manage fleets, enhance driver safety, and improve operational efficiency. E-commerce and logistics companies use GPS and telematics systems to track vehicle routes, monitor fuel consumption, and optimize delivery schedules. Real-time monitoring of driver behavior and vehicle status helps enforce safety regulations and minimize accidents.

1.16.9. Banking and Financial Sector Monitoring

In India's banking and financial sectors, electronic monitoring systems are used to comply with RBI regulations and prevent fraud. Automated monitoring tools analyze real-time

transactions, customer interactions, and network activity to identify irregular patterns and potential threats. These systems are crucial for safeguarding customer assets and ensuring adherence to stringent regulatory frameworks governing financial operations. (Singh & Das, 2022).

1.16.10. Retail Sector Monitoring

In India's rapidly expanding retail sector, electronic monitoring technologies are deployed to enhance security, reduce theft, and improve store performance. CCTV cameras, point-of-sale (POS) monitoring, and customer behavior analytics enable retailers to track in-store interactions, manage inventory efficiently, and optimize marketing strategies. Data gathered through these monitoring tools is also used to analyze purchasing patterns and tailor product placement for better customer engagement. (Dwivedi, Rana, & Williams, 2020)

1.17 NEED FOR ELECTRONIC MONITORING IN THE IT SECTOR

In today's digital environment, electronic monitoring has become vital for managing operations, ensuring compliance, and protecting productivity and data security. The rise of remote work, accelerated by the COVID-19 pandemic, has reduced the effectiveness of traditional supervision, making it difficult to track employee activities and policy adherence without technological tools (Ravid et al., 2023).

Research shows that modern monitoring systems enable organizations to track application usage, internet activity, and performance metrics, improving evaluation of employee output (Abraham et al., 2019). Additionally, these systems play a key role in cybersecurity by detecting unauthorized access and potential data breaches, helping organizations comply with regulations such as GDPR and HIPAA.

Moreover, as businesses face increased pressure to optimize workflows and reduce inefficiencies, electronic monitoring provides data-driven insights into employee behavior, system usage, and workflow bottlenecks. Analyzing these patterns enables organizations to improve processes, allocate resources effectively, and enhance operational efficiency. Electronic monitoring also contributes to risk management. Meta-analytic research suggests that proactive monitoring of employee interactions with organizational systems can mitigate fraud, protect intellectual property, and ensure secure handling of sensitive information

(Holman et al., 2002; Ravid et al., 2023). When implemented transparently, electronic monitoring can improve employee engagement and well-being by identifying areas needing support or training, fostering a positive work environment that reduces excessive micromanagement while promoting accountability and trust.

For IT organizations, electronic monitoring is crucial for managing distributed teams and ensuring security. Tools like time tracking, application usage monitoring, and VPN oversight help remote employees follow protocols and work efficiently (Ravid et al., 2023). Additionally, monitoring user behavior detects suspicious activities, such as unauthorized access or downloads, mitigating insider threats and preventing cyber incidents.

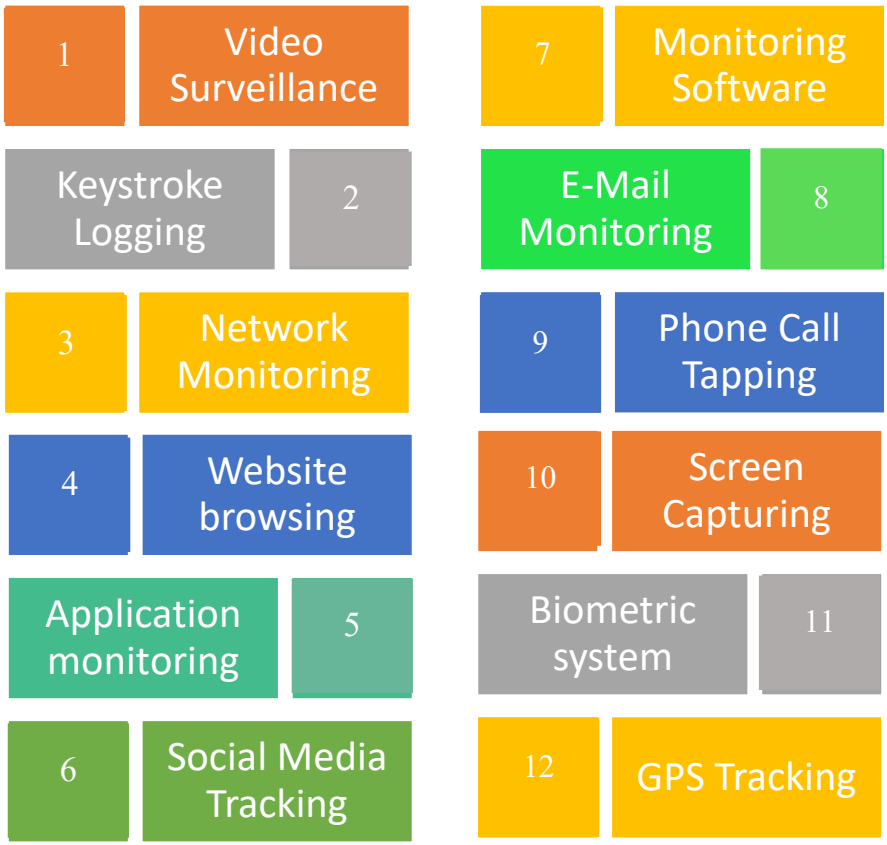
In terms of infrastructure management, electronic monitoring allows IT teams to oversee server performance, network traffic, and system updates in real-time, enabling rapid detection and resolution of issues, which minimizes downtime and supports uninterrupted service delivery. Compliance with industry standards such as ISO 27001 is further reinforced by tracking system access and maintaining audit logs.

In sum, as businesses navigate an increasingly digital and distributed world, the need for electronic monitoring has never been more essential. It serves as a comprehensive solution for managing remote and hybrid teams, ensuring productivity, safeguarding sensitive data, and maintaining regulatory compliance. By providing real-time insights, mitigating risks, and improving operational efficiency, electronic monitoring enables organizations to create secure, productive, and transparent work environments, ultimately contributing to competitive advantage in the digital landscape.

1.18 TYPES OF ELECTRONIC MONITORING

In today's rapidly evolving environment, technological advancements have made employee monitoring essential for organizations across all sectors and sizes. As businesses grow, they require effective tools to evaluate employee performance and track work-related activities. The following are some common methods through which organizations can observe, track, and analyze employee work data efficiently.

Chart 1.18.1: Types of Electronic Monitoring Practices



Source: Authors Compilation

1.18.1 – Video Surveillance

Video surveillance involves capturing employee activities through cameras and transmitting the footage to a central system for monitoring. These recordings can be stored for later use, offering an objective basis for performance evaluation and reducing bias in assessments (Mishra & Crampton, 1998). It also discourages misconduct, helps identify inefficiencies,

supports compliance and dispute resolution, and enhances workplace safety by monitoring adherence to protocols and detecting risks in real time.

1.18.2 – Keylogging

Keylogging tracks employees' typing activity and may also take screenshots based on specific triggers. Although it provides detailed insights into work patterns, it raises privacy concerns if misused. When applied responsibly, it supports productivity analysis, ensures compliance with IT policies, prevents unauthorized access, and assists in audits and training by identifying errors and inefficiencies. (Mishra & Crampton, 1998).

1.18.3 – Email Monitoring

Email monitoring empowers employers to oversee all employee email communications, including sent, received, and archived messages (Backhaus, 2019). This ensures adherence to company policies, helps detect potential data breaches, and safeguards sensitive information. Furthermore, it allows organizations to analyze communication trends, improve workflow efficiency, and maintain legal and regulatory compliance. Regular email audits also help in early detection of phishing attempts or insider threats.

1.18.4 – Telephone Tapping

Telephone tapping captures and analyses employees' phone interactions, including call duration, frequency, and idle times. This helps evaluate employee productivity, adherence to communication protocols, and client engagement effectiveness. Additionally, monitoring telephonic communication supports compliance with regulatory requirements, especially in finance, insurance, and customer service sectors, while also helping managers identify areas for skill improvement.

1.18.5 – Website Browsing

Monitoring website browsing involves tracking the online activities of employees, including the websites visited and time spent on each site (Holman et al., 2002). This ensures productive use of internet resources and reduces the risk of accessing harmful websites. Moreover, browsing data can reveal workflow bottlenecks, support IT security policies, and help organizations develop training programs to improve online productivity.

1.18.6 – Application Monitoring

Application monitoring allows employers to track how employees use software and applications installed on company devices (Backhaus, 2019). This includes usage patterns, document access, and specific interactions within applications, helping ensure proper software usage and data security. Beyond compliance, application monitoring provides insights into workflow efficiency, identifies underutilized tools, and supports process optimization across departments.

1.18.7 – GPS Tracking

GPS tracking monitors the real-time locations of employees who work in the field or travel frequently (Mishra & Crampton, 1998). This helps manage mobile workforces, optimize routes, and ensure timely adherence to schedules. Additionally, GPS data can enhance employee safety, verify service delivery, and provide actionable insights for fleet management and operational planning.

1.18.8 – Social Media Tracking

Social media tracking enables employers to monitor employee activity on social platforms during work hours (Backhaus, 2019). This helps prevent misuse of company time, protects confidential information, and maintains a professional online presence. It also provides insights into employee sentiment, team engagement, and potential reputational risks related to social media usage.

1.18.9 – Biometric Monitoring

Biometric monitoring captures human traits and physiological data, such as facial expressions, body posture, or walking patterns, to assess emotions and behaviors (West & Bowman, 2016). This enables organizations to understand employee engagement, stress levels, and workplace safety compliance. Biometric systems also enhance access control, reduce fraudulent entries, and provide more accurate attendance tracking than traditional methods.

1.18.10 – Monitoring Software

Monitoring software continuously tracks user activity, including typing speed, screen captures, and camera snapshots, often in real-time (Ravid et al., 2023). It provides granular insights into productivity, fatigue, and potential burnout while supporting network security

and compliance. Additionally, it enables proactive interventions, identifies performance trends, and safeguards against insider threats or unauthorized data access.

1.18.11 – ERP Systems

Enterprise Resource Planning (ERP) systems centralize data from various departments to provide real-time monitoring of business operations (Backhaus, 2019). They track employee performance, inventory levels, and process efficiency, enabling informed decision-making. ERP monitoring also ensures compliance with regulations, optimizes resource allocation, and integrates departmental workflows to enhance overall organizational performance.

1.18.12 – Behavioral Analytics Monitoring

Behavioral analytics monitoring uses machine learning and statistical models to analyze patterns in employee digital behavior across systems. Rather than capturing isolated events, it detects trends such as task switching, idle time, or deviations from normal work patterns, enabling early identification of productivity issues or security risks (Eckerson & Shaffer, 2019). This approach moves beyond simple tracking to understanding *why* certain behaviors change, supporting proactive workforce management.

1.18.13 – Digital Collaboration Monitoring

Digital collaboration monitoring observes employee interactions within team communication platforms (e.g., Slack, MS Teams, Zoom) to measure collaboration quality, participation levels, and communication bottlenecks. Research shows that monitoring patterns of collaboration can help identify organizational silos, improve coordination, and enhance remote team effectiveness (Leonardi, 2021). It provides insights into *how* information flows, not just whether work is done.

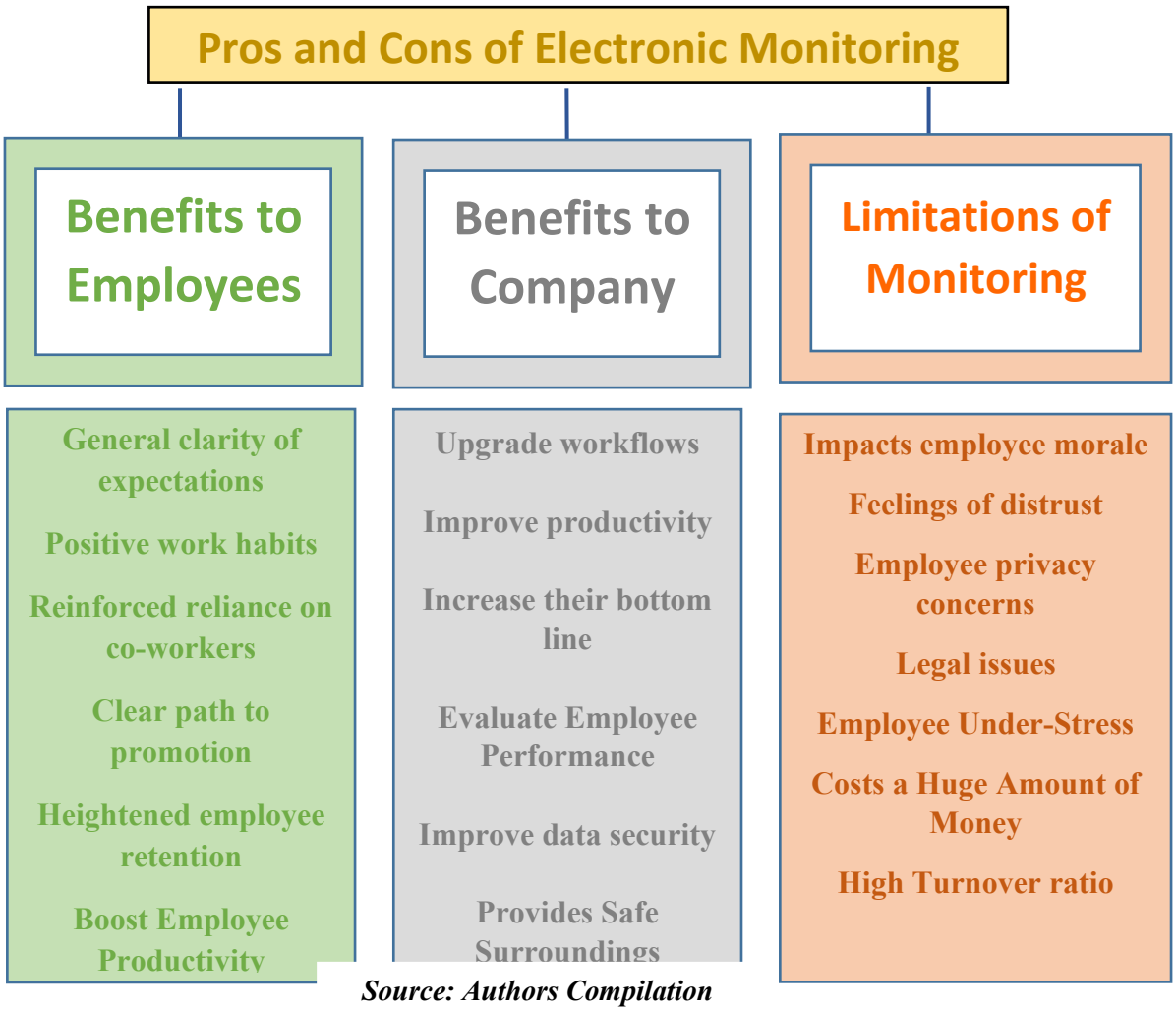
1.19 BENEFITS & DRAWBACKS OF ELECTRONIC MONITORING

Although monitoring may initially appear as a sign of mistrust, it can offer several benefits to employees when used effectively. Access to performance data can help individuals improve productivity, manage time more efficiently, and enhance overall work effectiveness.

Monitoring can also encourage positive work behavior, as employees tend to stay focused when they are aware of being observed. This awareness promotes discipline, better time management, and more professional interactions with colleagues and clients.

With clearly defined expectations, employees gain better direction in their roles, supporting both individual development and organizational growth. The following section outlines the key benefits and limitations of workplace monitoring.

Chart No. 1.19.1: Benefits & Drawback of Electronic Monitoring



Source: Authors Compilation

When employers have oversight through monitoring, they can uncover serious workplace issues such as sexual harassment, bullying, and discriminatory behaviour that might otherwise be ignored, and they can also identify employee strengths and leadership potential through detailed behavioural data (Behrend et al., 2026; Rehman, 2022). Such monitoring provides managers with rich information that supports better decision-making about task distribution, policy enforcement, workflow optimisation, and customer service outcomes by enhancing visibility into work patterns (Workplace Surveillance Review, 2023).

However, there are significant drawbacks. Excessive or intrusive monitoring is associated with increased stress, anxiety, and psychological tension among employees, particularly when workers perceive it as intrusive or controlling (Pandey & Pravesh, 2025; Behrend et al., 2026). Although remote work flexibility was a major benefit during the COVID-19 pandemic, constant surveillance can reduce this flexibility by pressuring employees to remain connected and responsive, contributing to increased work-family conflict and reduced trust. In addition, privacy concerns arise when employees lack transparency about how their data is collected, stored, and used, and misuse of monitoring data can damage morale, reduce loyalty, and increase turnover, especially when autonomy feels compromised (Rehman, 2022; Neurosurveillance Review, 2023).

1.20 THE NEXT FRONTIER OF ELECTRONIC MONITORING

The adoption of pervasive electronic monitoring technologies in India was already underway before the pandemic, but COVID-19 significantly accelerated this trend. As remote and hybrid work arrangements became widespread, traditional supervisory approaches proved insufficient for ensuring productivity and compliance in distributed workforces. A multi-country survey found that in mid-2020, up to 40% of employees in the U.S., Germany, and India had shifted to remote work, forcing organizations to adopt new tools to maintain oversight and support safe working conditions (ILO, 2021). In addition to public health measures such as social distancing, temperature screening, and contact tracing applications, many workplaces turned to automated technologies like facial recognition, enhanced CCTV, and thermal scanning to reduce human intervention while monitoring employee safety.

In India, the adoption of monitoring technologies like facial recognition has been evolving over time. For example, in 2018, Tech Mahindra introduced facial recognition systems not only for attendance management but also to evaluate employee mood and engagement. Although the company initially indicated that employee consent would be obtained, later developments suggested that its use for attendance became mandatory, reflecting the conflict between consent and organizational monitoring requirements.

Similarly, public sector bodies such as Madurai Corporation have adopted facial recognition systems to track the attendance of sanitation workers, indicating that the use of such technologies is expanding beyond traditional corporate settings.

Some surveillance practices have raised serious ethical and privacy questions. Reports indicate that municipal corporations in several Indian cities — including Panchkula, Mysore, Lucknow, Indore, Thane, Navi Mumbai, Nagpur, and Chandigarh — equipped sanitation workers with wearable devices called "Human Efficiency Trackers" that monitor location, surroundings, and even audio, raising concerns about surveillance beyond the workplace boundaries (Kumar & Singh, 2023). Similarly, commercial security platforms such as MyGate allow residents to rate and review domestic workers, yet the feedback mechanism is one-way, offering no recourse for those being evaluated. These examples illustrate how monitoring has become both more pervasive and more personal, extending into spaces traditionally considered private.

For remote employees, an array of digital monitoring tools has become common. Software solutions now exist that capture online activity, screen time, webcam images at intervals, keystrokes, emails, and even messaging app content. Tools like XNSPY can track call logs, messages, contacts, media files, and location data — often running invisibly in the background — raising concerns about employee awareness and consent (Jain & Gupta, 2022). Similarly, EmpMonitor, developed in Bengaluru, captures periodic screenshots, browsing history, usage patterns, and keystrokes, indicating an increasing depth of workplace surveillance in India's digital economy.

The rapid adoption of monitoring technologies for remote work has revealed significant privacy challenges. In Panchkula, sanitation workers reported anxiety about supervisors listening to private conversations when devices were taken home for charging, illustrating how continuous monitoring can blur boundaries between work and personal life and heighten employee stress (Kumar & Singh, 2023). These cases reflect broader concerns

identified in workplace surveillance research: that monitoring tools, if not guided by transparent policies and ethical safeguards, can erode trust and employee autonomy.

The use of advanced monitoring extends beyond India. In Sweden, thousands of individuals opted to have microchips implanted to simplify everyday tasks such as building access, highlighting how body-worn technologies can become normalized when perceived as convenient (West & Bowman, 2016). In China, companies are experimenting with brain-wave and emotion tracking systems to assess stress levels and employee mood shifts. Reports suggest that such systems have been used to identify highly stressed workers and suggest rest, with some companies claiming substantial productivity gains as a result. This raises the possibility that biometric and neuro-surveillance tools could enter mainstream corporate practice as they are validated in experimental contexts.

While technologies like implanted chips and brain-wave monitoring may currently seem intrusive or unsettling, workplace technologies historically follow adoption curves: initial resistance → gradual normalization → widespread use (Ball et al., 2019). As organizations increasingly rely on digital systems, monitoring will likely become more personalized, pervasive, and embedded in both work and daily life. This evolution presents dual opportunities and threats: enhanced safety, productivity, and insight on one hand, and ethical, privacy, and autonomy concerns on the other. Much like earlier technological shifts, the future of electronic monitoring will require thoughtful governance, ethical frameworks, and transparent policies to balance organizational needs with employee rights.

Chapter 2

LITERATURE REVIEW

2.1 – Introduction

This chapter provides an overview of existing literature on employee perceptions of monitoring, the motivations behind its adoption by employers, and the various methods used for workplace monitoring. It also highlights key factors and ethical considerations that should be addressed while designing monitoring practices.

The aim of this chapter is to synthesize insights from prior studies conducted by different researchers, enabling the identification of research gaps for the present study. Additionally, it offers a broader perspective to guide the research approach. Finally, the findings of this study will be compared with earlier research to draw meaningful conclusions and recommendations. Relevant literature reviewed for this study is presented below.

2.1.1 Literature Review on Employee Perceptions and Attitudes Towards Electronic Monitoring.

Deng, H. Lu, Y. Fan, D. and Xia, Y. (2025) examined how algorithmic control contributes to employee well-being in traditional workplace settings. The study focused on the impact of monitoring work activities and performance management practices on employees' perceptions of organizational fairness. Using a multi-wave data approach, the findings revealed that both algorithmic monitoring and performance management enhance perceptions of fairness, which subsequently improves employee well-being. The study also highlighted that clear and transparent communication about algorithmic processes further strengthens these positive outcomes, providing practical insights for effectively using such technologies.

Lazar Raković, M., Sakal, P., & Matković, P. (2022) explored the concept of a digital workplace, detailing its requirements, benefits, and associated challenges. The study highlighted that digital workplace technologies enable seamless work access, enhance employee productivity and autonomy, and optimize costs. However, limitations such as restricted networking, collaboration difficulties, and security concerns were also noted. The authors proposed a holistic approach that balances open and protected information and carefully selects appropriate tools. They identified dual aspects of workplace characteristics—such as freedom versus security and simplicity versus complexity—that

simultaneously present advantages and challenges. Recommendations included involving employees in the digital transformation process and establishing cross-functional teams to guide implementation.

Jeske, D. (2022) conducted a conceptual review on the impact of electronic monitoring on the health and well-being of remote employees. Based on selected recent studies, the paper outlined approaches to create more supportive experiences for employees working under monitoring systems. The study emphasized strategies such as implementing health and social interventions, increasing managerial awareness of well-being concerns, and collaborating with health professionals to design effective workplace policies. It also suggested that organizations can leverage data generated from monitoring systems to guide interventions and redesign work processes in ways that enhance both employee well-being and performance.

Kalischko, T., & Riedl, R. (2021) examined the adoption, development, and organizational impact of Electronic Performance Monitoring (EPM) systems. Reviewing over three decades of empirical research, the authors proposed a conceptual framework identifying six key outcomes of EPM usage and multiple moderating factors. The study also explored issues related to privacy, ethics, and cultural factors, while highlighting potential areas for future research, especially regarding the design and effectiveness of EPM systems.

Ainish, S. M. P., & D'Cunha, N. D. (2021) focused on employees' perceptions of monitoring and the ethical considerations surrounding it. A survey of 122 respondents revealed that most employees preferred technological monitoring over physical supervision, while expressing concerns about the security of personal data. The study emphasized the need to balance monitoring practices with ethical considerations to ensure employee trust and data protection.

Kensbock, J. M., & Stöckmann, C. (2021) investigated employee responses to digital transformation, with particular focus on intrinsic motivation and voice behavior. Surveys of 100 employees undergoing digital disruption indicated that digital transformation encourages learning-oriented engagement and proactive suggestions. However, the study also found that increased surveillance during digitalization can reduce employees' motivation to learn and participate, highlighting the delicate balance between innovation and monitoring.

Jahagirdar, S., & Bankar, S. (2020) analyzed the implications of employee monitoring, noting its gradual evolution due to technological advancements. The study highlighted potential negative impacts on employee satisfaction and privacy and proposed integrating organizational, privacy, control, and resource theories to mitigate these effects. Findings indicated that employees' perceptions of privacy influence commitment, and long-term monitoring could reduce organizational loyalty. The authors recommended strategic implementation of monitoring practices with clear communication to avoid adverse outcomes.

Sherif, K., Jewesimi, O and El-Masri M. (2020) examined how aligning EPM design with organizational culture can address privacy concerns and enhance employee acceptance. Using qualitative interviews from case studies in the USA and Qatar, the study demonstrated that cultural context significantly affects perceptions of monitoring. In Qatar, EPM was generally accepted as a standardization tool, whereas in the USA, it was viewed more as a feedback mechanism. The research emphasized the importance of aligning monitoring systems with cultural and organizational contexts and demonstrated the need for organizations to clearly communicate the benefits of EPM to employees.

Al-Rjoub, H., Zabian, A. & Qawasmeh, S. (2020) investigated employee perspectives on electronic monitoring, hypothesizing that such monitoring enhances productivity and managerial satisfaction. Survey results indicated that employees generally accepted monitoring technologies and viewed them as tools for improving performance, confirming that electronic monitoring can positively influence behavior when implemented thoughtfully.

Chen, R., & Sanders, G. L. (2019) conducted descriptive research on 550 employees to examine the implications of electronic monitoring in workplace settings. The study applied organizational, privacy, and control theories to analyze how organizational policy design can address employee privacy concerns. Findings suggest that restrictive policies may increase perceptions of privacy invasion, while safeguards against misuse can reduce such perceptions. The research also contributes to theory development in electronic monitoring and provides practical guidance for organizational management strategies.

Yost, Behrend, Howardson, Darrow, & Jensen (2019) emphasized that the effectiveness of EPM depends on contextual and individual factors. Employee reactions to monitoring are

influenced by personal differences, which in turn affect behaviors such as Organizational Citizenship Behavior (OCB) and Counterproductive Work Behavior (CWB).

Rosengren & Ottosson (2018) described employee monitoring as a method for tracking workplace activities, including performance, attendance, and online behavior. Their research highlighted gender differences, noting that women tend to spend more time on non-work-related websites, potentially missing deadlines and delaying responses to clients.

Monahan, T. (2018) analyzed critical surveillance art projects to examine the societal and cultural implications of surveillance. The study explored artworks that reveal the human costs of surveillance, encourage reflexivity, or provoke ethical questioning among viewers. Monahan argued that such works promote ideological critique by fostering ambiguity and challenging the viewer's position within the surveillance framework.

Lockwood, G. (2018) conducted interviews with 50 HR managers, line managers, trade union representatives, and employees in the UK to explore perceptions of workplace monitoring. The study revealed differences in attitudes toward surveillance, emphasizing the varied impact on employment relationships and highlighting the importance of understanding both employer motivations and employee interpretations.

Al-Hitmi, M., & Sherif, K. (2017) investigated IoT-enabled monitoring in a multinational petrochemical company in Qatar, finding that pervasive monitoring did not negatively affect employees' fairness perceptions. Qualitative analysis identified three moderating factors: a culture focused on productivity and policy adherence, a competitive job market, and paradoxical leadership that balances performance pressures with rewards. The study underscored the role of cultural context in shaping acceptance of monitoring technologies.

Fairweather, N. B. (2017) examined teleworking employees' perspectives on monitoring, highlighting conflicts between organizational goals and privacy concerns. The study concluded that electronic monitoring can create feelings of alienation and privacy invasion among employees, raising ethical and trust-related dilemmas.

Holland, P., Cooper, B., & Hecker, R. (2015) analyzed the link between electronic monitoring systems (EMS) and trust in management among 500 Australian employees. Results indicated that EMS generally reduced trust, particularly for manual workers,

potentially leading to withdrawal behaviors such as lower engagement or increased turnover. The study cautioned that monitoring can strain employment relationships, though it did not establish causality.

Wieser, L Abraham, Schnabel, C., Niessen, C., & Wolff, M. (2015) explored employees' perceptions of electronic monitoring and its negative consequences. Findings revealed that perceived privacy invasion led to stress, anxiety, low self-esteem, and diminished participation, exacerbated by ineffective policy communication. The study highlighted how poor implementation of monitoring can negatively affect workplace culture and employee well-being.

2.1.2 Literature Review on Technological Tools and Methods of Electronic Monitoring

Manokha (2020) examined the impact of digital employee monitoring and people analytics on power dynamics in the workplace. Drawing on Jeremy Bentham's panopticon concept, the study highlights three core assumptions: the omnipresence of the observer, universal visibility of monitored subjects, and the perception of constant observation by those being watched. The author argues that modern digital monitoring technologies have made workplaces more panoptic than traditional settings, as supervisors can track employee activities continuously, whether they are physically present. This shift has profound implications for workplace power relations.

Kalischko, T., & Riedl, R. (2020) suggested that while EPM positively affects employee performance, its current applications primarily focus on behavioral responses. They proposed that including physiological measures—such as heart rate, blood pressure, and skin temperature—could provide deeper insights into stress, arousal, and overall outcomes.

Claypoole, V. L., & Szalma, J. L. (2019) conducted two experiments (N = 197) to examine the impact of video-based EPM on sustained attention, where participants completed a 24-minute vigilance task. The findings indicated that electronic monitoring improved attention levels, with the most notable performance gains occurring when two forms of video monitoring were used simultaneously rather than independently, highlighting the effectiveness of combined monitoring approaches.

Backhaus, N. (2019) performed a meta-analytic review of 85 studies on context-sensitive technologies and EPM. The review analyzed outcomes such as performance, psychological stress, motivation, satisfaction, and workplace behavior. Findings revealed heterogeneous effects on performance and mild negative impacts on stress, job motivation, satisfaction, organizational trust, and perceived control. The study also offered design recommendations to improve acceptance and minimize adverse effects, noting that most prior research relied on cross-sectional or quasi-experimental survey designs.

Adams, I., & Mastracci, S. (2019) explored the impact of Body Worn Cameras on police officers, hypothesizing that intensive surveillance affects perceptions of organizational support and burnout. Surveying 271 patrol officers using structural equation modeling, they found that BWCs increased burnout and reduced perceived organizational support, which mediated the relationship between surveillance and stress. Greater support from the organization could mitigate these negative outcomes.

D. Jeske, and Santuzzi, A. M. (2015) explored the effects of close monitoring on student employees (N = 190). Results showed that intensive EPM methods—such as video, chat, phone, and data recording—negatively affected job satisfaction, commitment, self-efficacy, and perceived control. Negative impacts were stronger when monitoring was unpredictable or individually focused, and continuous monitoring further reduced self-efficacy and organizational citizenship behavior.

2.1.3 Literature Review on Privacy and Ethical Considerations of Electronic Monitoring.

Da Silva, A. P. and Pasqualeto, O. de Q. F. (2025) investigated the use of artificial intelligence by Brazilian companies to monitor employees through People Analytics tools. The study analyzed sixteen HR Tech firms offering both monitoring services and people analytics solutions, examining how employee data is collected and utilized. The research highlighted privacy risks, particularly for remote workers, and evaluated the effectiveness of Brazil's General Personal Data Protection Act (LGPD) in safeguarding employee data. Findings indicated that many firms could improve transparency, accountability, and

compliance with LGPD principles, as insufficient disclosure creates uncertainty and potential legal exposure for employers.

Seeber, I., & Erhardt, J. (2023) examined how information workers manage workplace boundaries using digital workplace tools (DWP) and the resulting impact on job satisfaction. A survey of 202 participants revealed that greater flexibility in work arrangements tends to enhance job satisfaction, while higher permeability of work-home boundaries decreases it. The study also found that the frequency of DWP tool use interacts with boundary flexibility and permeability, producing crossover effects on satisfaction. These insights contribute to boundary theory and the emerging field of digital workplace research.

Stegman, J., Trottier, P. J., Mannan, M., Hillier, C., & Khan, H. (2022) explored employees' privacy perceptions when using Enterprise Security Software (ESS) through an online survey (n = 258) and semi-structured interviews (n = 22). The study revealed widespread confusion among employees regarding what data ESS collects and who has access. Participants generally understood the need for data collection but cited poor communication and ambiguous practices as factors that erode trust in both ESS and employers. The study also gathered user suggestions for privacy notices and indicators, offering practical guidance for researchers, employers, and ESS developers.

Power, D., Heavin, C., & O'Connor, Y. (2021) proposed the SPED (Surveillance, Privacy, and Ethical Decision) framework to guide organizations in balancing privacy concerns with surveillance analytics. The framework encourages stakeholders to critically evaluate SA innovations and adopt ethical principles—Consequences, Duty, or Virtue—when making implementation decisions. The study concluded that SPED provides a practical decision-making tool for managers and technologists considering surveillance analytics in the workplace.

Indiparambil, J. J. (2019) critically analyzed workplace surveillance frameworks, examining commonly used monitoring technologies and their impacts on privacy and social dynamics. The study argued for establishing ethical surveillance practices grounded in trust and transparency and emphasized the need to reframe traditional organizational behavior through moral, legal, and principled perspectives.

Grigorovich, A., Kontos, P., & Meeks, S. (2019) focused on monitoring technologies in institutional care, identifying gaps in research and future development needs. The study reviewed AI-driven monitoring tools, the types of data collected, and their ethical, social, and policy implications. By also referencing research from non-institutional settings, the authors highlighted areas for further investigation and provided recommendations for responsible development and implementation of monitoring technologies in care institutions.

Suen, H.-Y. (2018) proposed a model to understand how perceived privacy violations and procedural injustice interact to influence employees' intentions to leave when monitored on social networking sites (SNSs). The study surveyed full-time Facebook users who experienced SNS monitoring and analyzed the data using partial least squares–structural equation modelling. Results indicated that employees who felt greater control over their SNS information were less likely to perceive privacy violations, and greater transparency in data collection was linked to stronger perceptions of procedural justice. The author recommends that employers implement SNS monitoring thoughtfully to reduce turnover risk, and that employees manage their privacy settings proactively.

Tomczak, D., Lanzo, L. A., and Aguinis H. (2017) examined the dual impact of Electronic Performance Monitoring (EPM) systems on organizational outcomes. While EPM provides benefits such as performance tracking, safety monitoring, and wellness programs, it can negatively affect employee satisfaction, commitment, fairness perceptions, and behavior. The study suggested strategies to mitigate these risks, including transparency about EPM use, considering potential employee reactions, using EPM for development rather than deterrence, restricting monitoring to work-related behaviors, and tailoring EPM deployment to organizational context.

Rana, F. A., & Shahid, S. (2017) investigated the influence of organizational experience, prior employment history, and individual trust propensity on workplace electronic monitoring and the formation of trust between employees and management. Using cognitive categorization theory, the study showed that trustworthiness perceptions influence turnover, commitment, and responses to monitoring. Poorly implemented or communicated monitoring practices can negatively affect organizational identity and employee commitment. The research provides practical and ethical recommendations for managers on implementing monitoring systems effectively.

Laird, B. K., & Bailey, C. D. (2016) challenged traditional agency theory by exploring the unintended consequences of monitoring on honesty. The study found that employees in monitored environments were more likely to engage in dishonest behavior when opportunities arose outside monitored tasks, compared to unmonitored employees who acted honestly. Experiments involved performance-based tasks under monitored and unmonitored conditions, with results suggesting that surveillance may inadvertently encourage unethical behavior. The findings have implications for fraud prevention and management practices.

Moussa, M. (2015) reviewed the legitimacy, ethical considerations, and implications of employee monitoring in contemporary workplaces. The article examined motives for monitoring, leadership behaviors, HR practices, and alternatives to EPM. Findings highlighted that monitoring could enhance organizational security but must be implemented with care to respect employee privacy and minimize stress. Clear communication about monitoring purpose and processes is essential, and balancing organizational goals with employee well-being is critical for effective system adoption.

2.1.4 Literature Review on the Impact of Electronic Monitoring on Employees.

Zhang, N., Sun, X. and C. Jin (2025) applied social information processing theory to investigate how developmental & preventive types of electronic performance monitoring (EPM) influence employee job performance, with self-efficacy serving as a mediator. Survey data from 223 Chinese employees collected at two points revealed that both monitoring types positively impacted performance, partially through self-efficacy. The study emphasizes managerial strategies to use monitoring tools effectively to enhance employees' confidence and productivity.

Wolff, M. S., Abraham, M.C., Wieser, L. and Niessen, C. (2024) examined the role of leader–member exchange (LMX) in shaping employees' perceptions of EPM invasiveness and privacy intrusion across three studies (two experiments and one field study). Results suggested that trust-based supervisor-employee relationships can lessen perceived invasiveness but do not completely prevent negative effects on motivation, employee needs, or turnover, highlighting the importance of social context in EPM implementation.

Gao, S., Jia, Y., Liu, B., and Mu, W. (2024) drew upon moral disengagement theory to study algorithmic monitoring in the platform economy and its influence on unethical behavior among gig workers. Using a three-wave survey of 318 Chinese gig workers, findings showed that algorithmic monitoring increases unethical actions by shifting perceived responsibility, particularly for highly individualistic workers. The study underscores the unintended consequences of algorithmic control while offering guidance for responsible use.

Jeske, D. (2022) reviewed literature on electronic monitoring among remote employees, focusing on its effects on well-being and work experience. The study recommended interventions to support employees, including health and social programs, increased managerial awareness, collaboration with health professionals, and the strategic use of monitoring data to improve work design, performance management, and overall employee welfare.

Elking, I. (2022) evaluated the federal mandate requiring commercial truck drivers to adopt electronic logging devices (ELDs) and its impact on motor vehicle fatalities. Using a difference-in-difference analysis, the study found no reduction in fatalities and potential increases in overall accident rates, suggesting that poorly designed or implemented electronic monitoring may fail to achieve intended safety outcomes.

Siegel, R., König, C. J., & Porsche, L. (2021) explored applicants' reactions to different EPM practices using communication privacy management theory. Surveying 154 engineering undergraduates nearing graduation, the study found that controlling monitoring procedures generated higher privacy concerns and reduced organizational attractiveness, whereas non-controlling procedures were viewed more favorably, especially by competitive participants. The findings highlight the importance of implementing monitoring in ways that are perceived as supportive rather than controlling.

Martin (2021) investigated the practical benefits and perceptions of employee monitoring software. The study indicated that monitoring can enhance productivity, reduce time wastage, promote honesty, and protect company information. While monitoring is generally accepted as legal and necessary within workplace policies, employees' comfort levels vary; some accept monitoring as a safeguard, while others worry about potential misuse of

personal data. The study also noted cyber loafing as a behavior that monitoring seeks to manage.

McParland, C., & Connolly, R. (2020) conducted a comprehensive review of workplace surveillance in their paper The study analyzed literature and practitioner reports to identify emerging trends and concerns in employee monitoring. The authors concluded that workplace surveillance is under-researched, emphasizing the need for structured policies and clear measures to ensure fair and effective use of communication technologies.

Jiang, H., Tsohou, A., and Siponen, M., & Li, Y. (2020) investigated the negative effects of Internet monitoring on employee behavior and cyberloafing in a software development company. A field experiment with 70 employees showed that monitoring reduced satisfaction with Internet usage policies, intrinsic motivation, and affective organizational commitment. The study highlighted organizational implications for implementing monitoring while minimizing negative effects on employee engagement.

Wu, D., & Wang, Z. (2020) explored how monitoring practices affect employee trust among 354 Chinese employees. The study differentiated between observational monitoring (OM) and interactional monitoring (IM), finding that OM undermines trust while IM strengthens it. Psychological safety mediated these effects, suggesting that interactive monitoring fosters positive organizational–employee relationships while controlling elements signal suspicion and reduce trust.

Tomczak, Behrend, Willford, & Jimenez (2020) reported that electronic performance monitoring (EPM) can negatively affect employees' sense of job autonomy and be perceived as a violation of the psychological contract. Employees often consider EPM a privacy intrusion and unfair, which can reduce trust and engagement.

O.J. Kehinde and E. Okafor (2019) studied the relationship between electronic monitoring and work performance among bank employees in Ibadan, Nigeria. Using surveys, semi-structured interviews, and non-participant observation, the study found that monitoring improved work performance by providing immediate feedback and serving as an objective performance evaluation tool. Quantitative data were analyzed with descriptive and chi-square tests, while qualitative responses were content-analyzed.

Cayford, M., & Pieters, W. (2018) analyzed statements by intelligence officials from the NSA, CIA, and GCHQ between 2006–2016 to understand criteria for evaluating surveillance effectiveness. Seven effectiveness measures were identified, including thwarted attacks and informed policymaking, with cost being a primary but rarely discussed driver in evaluating surveillance programs.

Ahmed, N., & Magdi, D. A. (2017) examined how implementing an information system for performance monitoring affected employees and organizational performance at the Egyptian International Trade Point Sector. Post-implementation results showed significant improvements in trade distribution, beneficiaries, and product promotion, demonstrating the role of technology and organizational learning in enhancing employee and organizational outcomes.

Cornelius, J. (2018) investigated stress levels among employees monitored via EPM in a lab study. Tasks were performed under monitored or unmonitored conditions, and locus of control moderated stress responses. Internals experienced higher stress under monitoring, while externals felt more stressed without monitoring, highlighting person–environment fit effects on EPM-induced stress.

Kolb, R., & Aiello, J. (2017) found that continuous EPM exposure increases employee stress and fosters an external locus of control. Constant monitoring reduced perceived control, motivation, and performance among employees.

Davidson, R., & Henderson, R. (2015) examined the influence of monitoring and task difficulty on performance, mood, and stress using a laboratory experiment. Results showed that EPM improved performance for easy tasks but reduced performance for difficult tasks. Mood was more positive for easy tasks under monitoring but more negative for difficult tasks, and subjective stress increased for challenging tasks under EPM.

Coultrup, S., & Fountain, P. D. (2012) explored employees' perceptions of monitoring within the context of the psychological contract. Using surveys of 65 faculty and staff, the study found that employees generally disliked monitoring, perceiving it as a violation of privacy and fairness, and highlighted the impact of monitoring on psychological contract perceptions.

2.1.5 Literature Review on Managerial & Leadership Perspectives towards EM

Tomczak, D. L., et al. (2025) conducted a mixed-method study with remote technology workers to examine the impact of supervisory use of monitoring data. They found that when supervisors provided constructive, developmental feedback, employees experienced increased motivation, task engagement, and clarity. In contrast, punitive or critical use of monitoring data led to emotional exhaustion and lower performance. The study highlights that leadership behavior following monitoring—not monitoring itself—determines employee performance outcomes.

Liu Zhou, Ouyang, Chen, and Gao (2025) examined the impact of EPM on job crafting using two time-lagged surveys across cultures and a scenario-based experiment in China. The results showed that EPM can negatively influence job crafting by reducing role breadth self-efficacy; however, this negative effect becomes weaker when supervisor feedback is supportive or when job complexity is lower. The study emphasizes the importance of managerial behavior, suggesting that constructive feedback can balance the drawbacks of monitoring, and that employees in complex roles perform better with greater autonomy rather than strict monitoring, thereby enhancing engagement and innovation.

Wolff et al. (2024) emphasize the importance of leader–member exchange (LMX), showing that high-quality supervisor–employee relationships can influence how employees perceive privacy invasion and interpret monitoring data. Although strong LMX does not entirely eliminate negative reactions, trust and effective communication from supervisors help employees navigate monitored environments, thereby affecting intrinsic motivation and turnover intentions. Complementing this perspective, research on managerial feedback demonstrates that the manner in which supervisors use monitoring data can mitigate potential negative effects on job design and autonomy. Studies indicate that when monitoring is paired with constructive, supportive feedback, employees experience less reduction in job crafting and self-efficacy, highlighting that leadership style fundamentally alters the impact of monitoring on proactive behaviors. Together, these findings underscore that the effectiveness of EPM is not solely determined by the technology itself, but significantly by managerial practices and the quality of supervisor–employee interactions

Lanzo, Tomczak, & Aguinis (2018) performed a comprehensive review and theoretical-empirical synthesis of EPM literature, offering evidence-based guidelines for organizational

implementation. They emphasized that monitoring should support learning and development rather than function solely as a control mechanism. Transparency in monitoring and consideration of fairness and trust were identified as crucial factors for reducing negative psychological outcomes such as stress or disengagement, thereby promoting a more productive work environment.

Ahlstrom, D., & McNeil, N. (2017) examined the role of organizational culture in shaping employee responses to EPM. Surveying professionals in technology-intensive firms, they found that supportive managerial cultures framed monitoring as a developmental tool, enhancing workflow and accountability. Conversely, control-oriented cultures increased stress, mistrust, and perceived inequity. The study underscores that EPM's effects are strongly mediated by managerial values and organizational culture.

Jeske, D., & Santuzzi, A. (2015) explored employees' interpretations of managerial motives behind monitoring in the U.S. and U.K. Using interviews and surveys, the study revealed that lack of managerial explanation often led employees to perceive monitoring negatively, inferring mistrust or micromanagement. Clear, transparent communication improved acceptance and reduced perceptions of privacy invasion, highlighting the importance of managerial intent in shaping monitoring outcomes.

Lazar, V. (2014) investigated how supervisory style affects employees' acceptance of monitoring in a large call-center. Using structured questionnaires and supervisor–employee interaction mapping, the study found that autonomy-supportive supervisors increased monitoring acceptance by emphasizing learning and clarity. In contrast, authoritarian supervisors heightened anxiety and reduced motivation, causing employees to view monitoring as intrusive surveillance rather than improvement-oriented oversight. Leadership behavior was thus critical in determining the effectiveness of monitoring systems.

2.1.6 Literature Review on Moderators and Mediators for measuring monitoring outcome

The OECD (2025) report examined algorithmic management practices across multiple countries using survey data and institutional records. The study investigated the impact of algorithmic oversight on employees' experiences, particularly regarding stress, autonomy, and trust. Findings showed that poorly governed algorithmic management increases stress, reduces perceived autonomy, and undermines trust in organizational procedures. The study

emphasizes the necessity of ethical guidelines and transparent communication to lessen the adverse effects of algorithmic monitoring. Overall, while digital and algorithmic oversight can enhance productivity, they pose potential risks to employee well-being and trust if not implemented thoughtfully.

The International Journal of Social Economics (2023) analyzed the relationship between workplace surveillance and employee outcomes such as psychological health, productivity, and privacy. Regression analyses revealed that higher levels of surveillance corresponded with reduced productivity, lower motivation, and negative psychological effects. Employees under intense monitoring reported feeling constantly watched, which contributed to stress and reduced engagement. The study underscores the need for careful design and implementation of surveillance systems to protect employee performance and mental health.

Lutfun Nahar Lata, Jasmine Burdon, and Tim Reddel (2021) In a controlled laboratory study, identified stress as a key mechanism linking monitoring intensity to performance. They found that high-intensity monitoring triggers physiological stress responses, significantly decreasing accuracy, decision-making quality, and initiative, whereas low-intensity monitoring did not produce these effects. This research provides strong evidence that stress mediates the negative impact of monitoring on performance.

Ravid et al. (2020) explored the role of personality in shaping responses to electronic performance monitoring (EPM) in remote software teams. Using Big Five assessments, they found that conscientious employees thrived under structured oversight, whereas neurotic individuals experienced anxiety and performance declines, highlighting the influence of individual differences on monitoring outcomes.

Anthony McDonnell and Ultan Sherman (2018) conducted a controlled experiment to determine whether perceived fairness mediates the effects of monitoring. Results indicated that fair, transparent, and consistently applied monitoring improved engagement and task performance, whereas low fairness caused anxiety and disengagement, regardless of the monitoring intensity.

Bhave (2016) examined how job type moderates the effects of monitoring across 410 employees in administrative and creative roles. The study found that monitoring enhanced efficiency and reduced errors in routine tasks but negatively affected creativity, risk-taking,

and innovation in complex, cognitively demanding roles. This highlights the need to align monitoring practices with job characteristics.

Finally, Kansal and Zaidi (2016) conducted a field study in call centres to explore how job design influences stress outcomes under EPM. Their findings suggested that monitoring increases stress primarily in rigid roles with little autonomy, while flexible roles that allow employees to control workflow showed minimal stress and maintained performance. This demonstrates that job design significantly moderates the impact of monitoring on employees.

2.1.7 Literature Review on Future Trends & Digital Transformation in Monitoring

Kim, Schweitzer, Riedl, and De Cremer (2025) investigated the social and economic impacts of algorithmic monitoring, conducting ten separate studies. They found that employees using AI tools to assist with tasks could face penalties from peers or organizations, even when their productivity remained stable. This points to emerging structural biases in workplaces, where AI-assisted workers may be undervalued due to perceptions of unfairness. The study emphasizes the need for ethical and equitable practices when designing AI and monitoring systems.

Vitak and Zimmer (2023) explored how the rapid expansion of workplace surveillance during the COVID-19 pandemic affected remote employees' autonomy, stress, and privacy. Using surveys and factorial vignettes with U.S. workers, they examined various monitoring methods such as web tracking, webcam oversight, and health data collection. The studies revealed that sudden increases in monitoring led to uncertainty, a perceived loss of control, and higher stress, especially when employees lacked clarity about monitoring purposes. Gender differences emerged, with women reporting more negative experiences. The authors stress that transparency, clear communication, and worker-centered governance are critical for mitigating adverse effects and maintaining trust in digitally monitored work environments.

Mateescu and Nguyen (2019) conducted an audit of AI-driven monitoring systems in logistics and gig work. They highlighted that predictive analytics and performance scoring introduced by AI pose risks of bias and opaque decision-making. Their findings indicated

that continuous, granular monitoring—tracking metrics like health data and behavioral traits—shifts power to employers. The study underscores the importance of transparency and informed consent, as unregulated data use can raise significant privacy and ethical concerns.

Zuboff (2019) framed workplace monitoring within the context of surveillance capitalism, arguing that organizations increasingly collect behavioral data to predict performance and automate managerial decisions. This approach diminishes worker agency and alters organizational power dynamics, offering a conceptual foundation for understanding long-term effects of algorithmic oversight.

Moore (2018) reviewed "quantified worker" systems, including wearable sensors, real-time dashboards, and biometric monitoring. While these technologies optimize productivity, they embed managerial control into workers' bodies and behaviors, reducing autonomy and creating a form of digital Taylorism. This intensifies surveillance and workplace precarity, raising ethical and psychological concerns.

Ball and Margulis (2017) examined cross-industry applications of biometric and emotion-sensing technologies. They found that emerging tools can monitor affective states, gaze, and cognitive load, blurring the line between work behavior monitoring and psychological surveillance. Their research stresses the necessity of ethical safeguards to protect employee privacy and autonomy when deploying advanced monitoring systems.

2.2: Research Gap

Technology has increasingly become a core mechanism for supervising employees in both physical workplaces and remote settings. Although monitoring is typically considered acceptable when carried out responsibly, it may become unlawful if organizations misuse personal information or breach privacy limits.

A review of existing studies indicates several research gaps. Earlier research has explored the pros and cons of electronic monitoring, clarified ethical guidelines, and examined how employees perceive such practices. It has also analyzed the impact of monitoring on stress, job satisfaction, and overall well-being, demonstrating how digital oversight shapes employee behavior, workplace experiences, and the effectiveness of various monitoring approaches.

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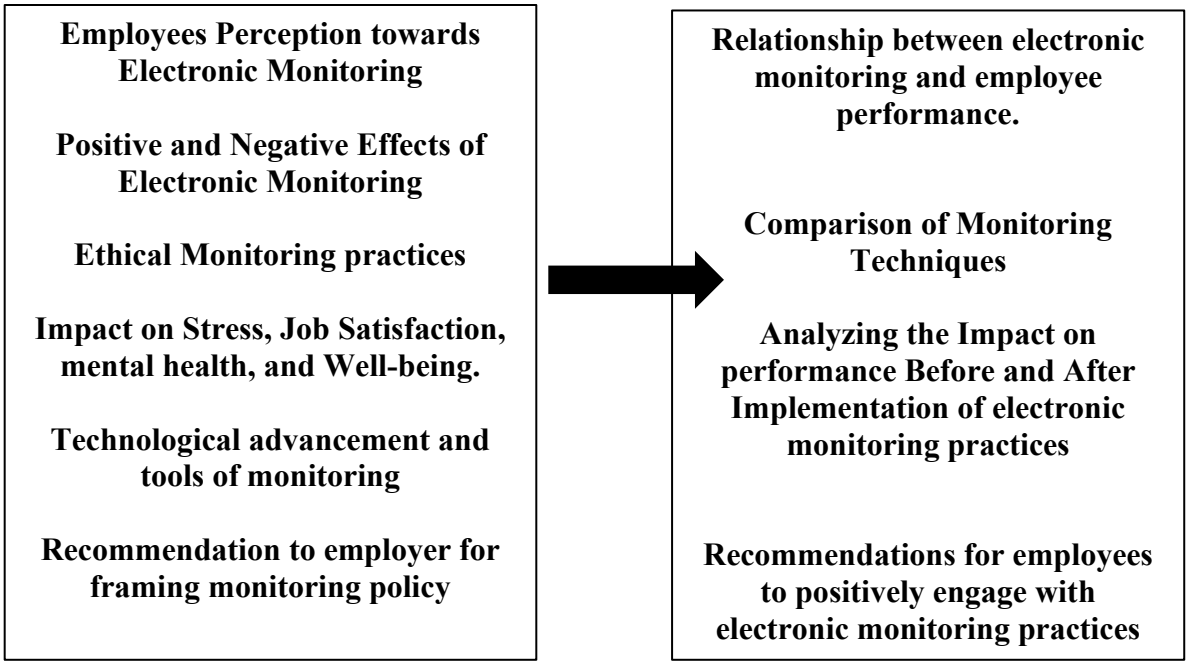
Chart No 2.2.1: Identifying Research Gap



Source: Author's own Compilation

Although electronic monitoring is widely used in modern workplaces, there is still limited research on its direct effect on employee performance. Most studies concentrate on behavioral outcomes, while fewer examine how different monitoring methods influence productivity.

Additionally, there is a noticeable gap in comparing the monitoring approaches preferred by employees with those implemented by organizations. This leaves employee perspectives insufficiently explored, even though they are crucial for designing a balanced and effective work environment.

Most prior research predominantly focuses on providing employers with guidance on how to design and implement electronic monitoring systems to enhance efficiency, ensure compliance, or achieve organizational objectives. While these studies offer valuable managerial insights, they often overlook the employee perspective, particularly the strategies and interventions that could help employees adapt to monitoring in ways that minimize stress, anxiety, or feelings of intrusion. Furthermore, there is a noticeable lack of

longitudinal research that tracks employee performance, engagement, and job satisfaction both before and after the introduction of monitoring systems. Without such temporal analyses, it is difficult to determine whether monitoring leads to sustained improvements in productivity or whether it inadvertently contributes to negative outcomes such as burnout, reduced motivation, or decreased workplace well-being.

This study therefore addresses these gaps by investigating the effects of electronic monitoring on employee performance from both organizational and employee viewpoints. It seeks to understand how monitoring practices are perceived, how performance changes post-implementation, and what strategies can align employer goals with employee well-being, providing a comprehensive and practical perspective on workplace monitoring dynamics.

Chapter 3
Research Methodology

3.1: TITLE OF THE STUDY

"Study on Impact of Electronic Monitoring on Employees Performance in IT Industry"

In the current digital landscape, organizations increasingly rely on monitoring practices to assess employee efficiency and performance. Different forms of monitoring can shape employees' work behavior and patterns. Hence, this study focuses on analyzing how such monitoring practices impact employee performance, particularly within the Information Technology industry.

3.2: OBJECTIVES OF THE STUDY

1. To evaluate the impact of electronic monitoring practices on the performance of employees.
2. To identify the relationship between perception of employees of the IT sector towards Electronic Monitoring and its impact on performance.
3. To differentiate different modes of monitoring preferred by employees and implemented by the company.
4. To highlight major reasons that employees believe in implementing monitoring practices
5. To provide recommendations to management and employees to have a balanced approach toward electronic monitoring.

3.3: SIGNIFICANCE OF THE STUDY

The primary aim of this study is to inform IT sector management about employees' perspectives on current monitoring practices and offer guidance on how these practices can be redesigned to enhance retention and attract talent in a competitive market. This research holds practical value by examining employees' perceptions of different electronic monitoring methods, comparing the effectiveness of various monitoring approaches, and evaluating their influence on individual performance. Additionally, the study seeks to assess employee performance both prior to and following the implementation of monitoring systems. Finally, it identifies key challenges faced by employees, analyzes their impact, and provides actionable recommendations for both organizations and employees to address these issues effectively.

3.4: SCOPE OF THE STUDY

This study adopts a primary research approach by collecting data directly from employees in the IT sector across cities such as Ahmedabad, Gandhinagar, Rajkot, Baroda, and Surat, which are emerging as key technology hubs in Gujarat. It focuses on understanding employees' perceptions and preferences toward electronic monitoring, while also analyzing the influence of demographic factors like age, gender, education, marital status, occupation, and work experience on performance. The research further compares different monitoring techniques to identify those that are more acceptable to employees and examines the reasons behind their implementation. It also highlights the challenges associated with workplace monitoring and provides practical suggestions for both employers and employees.

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3.5 HYPOTHESIS OF STUDY

(H0): There is no significant difference in performance ratings before and after electronic monitoring practices are implemented.

(H0): There is no significant difference in performance scores amongst Demographic Variables (Age, Gender, Marital Status, Experience, Education, Type of employment) and factors impacting performance after electronic monitoring is implemented.

(H0): There is no relationship between the sets of perception factors and performance factors among IT sector employees.

(H0): There is no significant association between Demographic Variables (Age, Gender, marital status, Experience, Education, Type of employment) and their Perception towards electronic monitoring.

(H0): There is no significant association between the preferred monitoring method by employees and the monitoring method implemented by the company.

(H0): There is no significant difference in the reasons employees believe in implementing monitoring practices.

3.6 RESEARCH DESIGN

Research design refers to the structured plan used to collect, measure, and analyze data for addressing a research problem. It provides a clear framework for organizing and conducting the study, detailing how information will be gathered, processed, and interpreted. In this study, a quantitative research design is adopted, which utilizes statistical and mathematical techniques to examine observable phenomena. This approach is useful for testing hypotheses, identifying relationships between variables, and converting observations into measurable data.

More broadly, research methodology outlines the overall process of conducting the study to achieve its objectives and answer research questions. It includes decisions related to design, data sources, collection methods, sampling, and analysis techniques. Specifically, this study follows a cross-sectional descriptive design with retrospective self-assessment, where data is collected at a single point in time while allowing respondents to reflect on past experiences. This approach is both time-efficient and cost-effective, offering insights into existing behaviors, attitudes, and conditions within the target group.

3.7 DATA COLLECTION METHOD

In this research, **both primary and secondary methods of data collection** are employed. **Primary data** is gathered using structured questionnaires and discussions to obtain responses, address research questions, and achieve the study's objectives. **Secondary data** involves reviewing existing literature, past theses, and relevant studies to understand prior findings in the same field and to inform the methodology of the present research.

3.7.1 Primary Data

For this study, primary data is collected using a **Self-Administered Survey**, consisting of structured questionnaires and discussion sessions. Data from **400 respondents** was collected from selected cities of Gujarat, including Ahmedabad, Gandhinagar, Baroda, Rajkot, and Surat. A survey allows researchers to collect a wide range of information from a large number of participants, with carefully designed questions that are sequenced to gather precise and comparable data. The aim of the survey is to evaluate similarities and differences among respondents. Given that the sample is spread across multiple cities and consists of IT sector employees, an **online survey via Google Forms** was chosen as it is convenient, fast, and allows for broader reach.

3.7.1.1 Research Instrument: Questionnaire

A **structured questionnaire** was used to record responses. It included dichotomous questions, multiple-choice questions, and five-point Likert scale items to capture respondents' perceptions and preferences regarding electronic monitoring.

3.7.1.2 Research Instrument: Discussion

Due to organizational policies restricting direct survey links to employees, **group discussions** were conducted with 7–8 employees. These sessions focused on their perceptions and preferences toward monitoring practices and explored the perceived impact of these practices on performance.

3.7.2 Secondary Data

Secondary data refers to information collected by other researchers or institutions. It is already recorded and published, making it accessible and easy to manage. In this study, secondary data comprises **literature reviews and past research** on electronic monitoring, including objectives, research designs, sample sizes, outcomes, and identified research gaps. This review provides a foundation for the present study and helps refine research questions and methodology.

3.8 Sample Design

Sampling is a statistical approach used to select representative observations from a population. It allows researchers to make inferences about the broader population based on the selected sample.

3.8.1 Population of the Study

A population refers to the complete set of items, individuals, or attributes that are the focus of a research study. Collecting data from the entire population is often impractical due to constraints of time, cost, and accessibility. Hence, researchers rely on samples to make inferences about the population. In this research, the population comprises **employees in the IT sector** from selected cities of Gujarat, including Ahmedabad, Gandhinagar, Baroda, Rajkot, and Surat. According to the **Ministry of Electronics and Information Technology (2024)**, direct employment in the IT services and BPO/ITeS segment is projected to reach 5.43 million in FY 2023–2024, with an estimated addition of 60,000 employees. Gujarat accounts for approximately 8% of this workforce, ranking sixth in the country. Among Gujarat's cities, Ahmedabad, Gandhinagar, Surat, Baroda, and Rajkot have emerged as prominent technology hubs, driving IT employment and contributing to the state's growing tech ecosystem. Based on this, the **population for this study is estimated at 445,000 employees** (8% of 5.43 million).

3.8.2 Sampling Technique

Sampling techniques can be broadly categorized as **probability** and **non-probability** methods. Probability sampling allows researchers to estimate population parameters with known levels of confidence, while in non-probability sampling, the likelihood of selecting specific population elements is unknown. For this study, **non-probability sampling methods**, specifically **snowball (network) sampling** and **judgmental (purposive) sampling**, were employed. These methods are appropriate because the target population is large, geographically dispersed across five cities, and access to IT employees may be limited.

3.8.2.1 Snowball Sampling

Snowball sampling, also known as chain-referral or network sampling, is a non-probability method used to identify subjects with rare or specific traits. Existing participants refer researchers to other potential respondents, creating a "snowball" effect. In this study, since identifying IT employees across multiple cities is challenging, contacting one employee and leveraging their professional network allowed the researcher to reach additional relevant respondents efficiently.

3.8.2.2 Judgmental Sampling

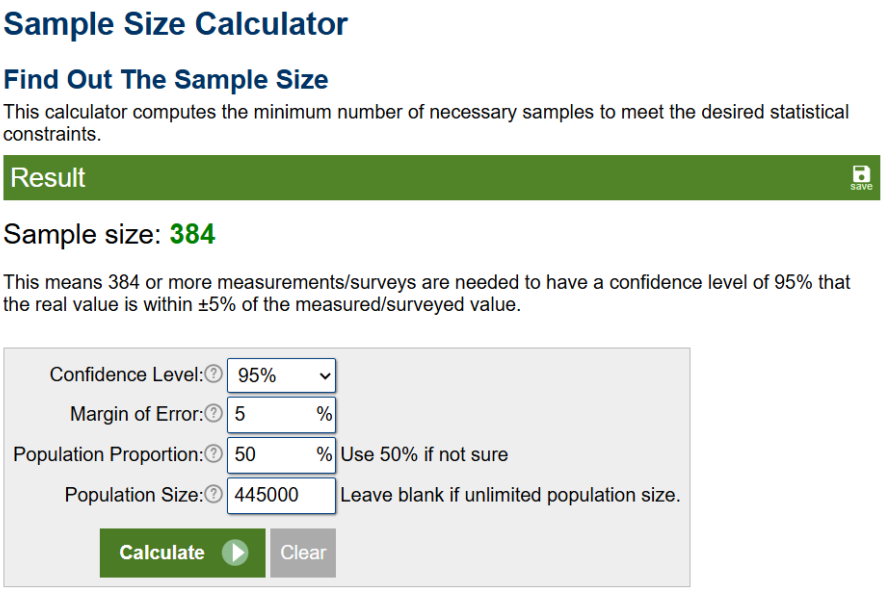
Judgmental sampling, also called purposive or selective sampling, involves selecting participants based on the researcher's knowledge, judgment, and the specific objectives of the study. This method is useful for targeting individuals with particular expertise or characteristics relevant to the research, ensuring the data collected is meaningful for the study's goals.

3.8.3 Sampling Unit

The **sampling unit** for this study is defined as employees working in the IT sector within the selected cities of Gujarat: Ahmedabad, Gandhinagar, Rajkot, Baroda, and Surat.

3.8.4 Sample Size Determination

Sample size represents the number of observations included in a study. Selecting an appropriate size is critical: too small a sample may yield unreliable results, while an excessively large sample can be resource intensive. A balanced sample ensures efficiency, representativeness, and statistical reliability. Using a **sample size calculator**, it was determined that a minimum of 384 responses was required from a population of 445,000. To ensure robustness and account for potential non-responses, **400 respondents** were surveyed across the selected cities.



3.8.5 Sample Profile

Sample profiling helps determine whether meaningful relationships exist between two categorical variables. It involves comparing the frequency of each category in one nominal variable against the categories of another nominal variable. **Cross-tabulation** is commonly used for this purpose, where each row corresponds to a category of one variable and each column represents a category of the second variable, providing a clear view of patterns and associations.

3.9 Data Preparation

The collected data will undergo **editing, coding, tabulation, grouping, and organization** according to the study's requirements. Once organized, the data will be entered into **SPSS (Statistical Package for Social Sciences)** for analysis.

3.10 Data Analysis Tools

Data analysis converts raw data into meaningful information to answer research questions, test hypotheses, and fulfill study objectives. It involves summarizing data, identifying patterns, reducing it to manageable forms, and applying statistical techniques. The following methods are used in this study:

3.10.1 Frequency Distribution

Frequency distribution organizes data into class intervals and frequencies, making it easier to summarize and understand patterns across the dataset.

3.10.2 Percentage Analysis

Percentage analysis is applied for comparing two or more data categories. It expresses relationships between data series as percentages, facilitating easier interpretation of comparative results.

3.10.3 Bar Chart & Pie Chart

- **Bar Chart:** A bar graph visually represents data using vertical or horizontal bars, where bar length corresponds to data magnitude. **Clustered bar charts** are used in this study when multiple parameters need to be compared.

- **Pie Chart:** Pie charts show proportions of a whole in circular form, with slices representing category contributions. They are suitable for small datasets and are applied in this study for survey questions with limited response categories.

3.10.4 Cross-Tabulation

Also called a **contingency table**, cross-tabulation is used to explore associations between variables and how these associations vary across groups. It is particularly useful for analyzing relationships between **demographic variables** and study outcomes.

3.10.5 Reliability Statistics

To ensure the **reliability and internal consistency** of scales measuring monitoring practices, **Cronbach's Alpha** is employed. A threshold of **0.7** is considered acceptable for reliability. A pilot study with 100 IT employees was conducted, and SPSS was used to calculate alpha values. Results showed strong reliability:

- **Perception Towards Monitoring:** $\alpha = 0.856$
- **Performance After Monitoring:** $\alpha = 0.851$
- **Performance Before Monitoring:** $\alpha = 0.731$

These results confirm that the measurement scales are dependable and consistently capture the constructs under study.

Table: 3.10.1 - Reliability Statistics of the factors

Factors	Cronbach's Alpha	No. of Factors
Perception Towards Monitoring	0.856	10
Performance Before Monitoring	0.731	10
Performance After Monitoring	0.851	10

3.10.6 Factor Analysis:

The research also conducted a **factor analysis** using data from 100 employees collected through a structured questionnaire. The analysis focused on 10 factors representing **employee perceptions of monitoring** and its **impact on performance**. Based on the **Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy** and **Bartlett's Test of Sphericity**, the results indicated that the sampling adequacy for both categories was close to 1, suggesting that the factors were well-defined and suitable for factor analysis.

Furthermore, the **significance (p-value) being less than 0.05** confirmed that all selected factors were statistically relevant and meaningful for the study.

Table 3.10.6 - KMO and Bartlett's Test – Factor Analysis of Performance

KMO and Bartlett's Test – Factor Analysis of Performance		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**0.710**
Bartlett's Test of Sphericity	Approx. Chi-Square	715.507
	df	45.000
	Sig.	0.000

KMO and Bartlett's Test – Factors Analysis of Perception		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		**0.790**
Bartlett's Test of Sphericity	Approx. Chi-Square	514.328
	df	45.000
	Sig.	0.000

3.10.7 Test of Normality:

The **normality test** is conducted to determine whether the collected data follows a normal distribution, which guides the choice between using **parametric** or **non-parametric statistical tests** for hypothesis testing. The conventional criterion for normality is a significance value of **0.05**; if the p-value exceeds 0.05, the data is considered normally distributed, whereas a value below 0.05 indicates deviation from normality. In this study, the normality of the dataset was assessed using both the **Kolmogorov-Smirnov test** and the **Shapiro-Wilk test**, computed through SPSS software. The results revealed a significance value of **0.00**, which is below the 0.05 threshold, indicating that the data does **not follow a normal distribution**. This outcome suggests that non-parametric statistical methods should be employed for further analysis to ensure valid and reliable results, as parametric tests assume normality and may produce misleading conclusions when this assumption is violated.

Table 3.10.7 - KMO and Bartlett's Test – Factor Analysis of Performance

Tests of Normality						
Particulars	**Kolmogorov-Smirnova**			**Shapiro-Wilk**		
	Statistic	**N**	**Sig.**	**Statistic**	**N**	**Sig.**
Effectiveness	**0.209**	**100**	**0.00**	**0.861**	**100**	**0.00**
Evidence	**0.276**	**100**	**0.00**	**0.860**	**100**	**0.00**
Comfort Zone	**0.189**	**100**	**0.00**	**0.904**	**100**	**0.00**
Confidentiality	**0.260**	**100**	**0.00**	**0.860**	**100**	**0.00**
Privacy	**0.273**	**100**	**0.00**	**0.790**	**100**	**0.00**
Trust	**0.365**	**100**	**0.00**	**0.735**	**100**	**0.00**
Transparency	**0.343**	**100**	**0.00**	**0.789**	**100**	**0.00**
Equitable	**0.335**	**100**	**0.00**	**0.791**	**100**	**0.00**
Job Security	**0.219**	**100**	**0.00**	**0.844**	**100**	**0.00**
Unfair Evaluation	**0.308**	**100**	**0.00**	**0.844**	**100**	**0.00**
Particulars	**Kolmogorov-Smirnova**			**Shapiro-Wilk**		
	Statistic	**N**	**Sig.**	**Statistic**	**N**	**Sig.**
Work Productivity	**0.380**	**100**	**0.00**	**0.627**	**100**	**0.00**
Job Satisfaction	**0.339**	**100**	**0.00**	**0.637**	**100**	**0.00**
Responsibility	**0.297**	**100**	**0.00**	**0.758**	**100**	**0.00**
Stress	**0.222**	**100**	**0.00**	**0.825**	**100**	**0.00**
Job Engagement	**0.209**	**100**	**0.00**	**0.844**	**100**	**0.00**
Task Completion Time	**0.304**	**100**	**0.00**	**0.843**	**100**	**0.00**
Autonomy	**0.234**	**100**	**0.00**	**0.807**	**100**	**0.00**
Collaboration	**0.401**	**100**	**0.00**	**0.616**	**100**	**0.00**
Work Life Balance	**0.225**	**100**	**0.00**	**0.825**	**100**	**0.00**
Job Burnout	**0.253**	**100**	**0.00**	**0.788**	**100**	**0.00**

3.11 LIMITATIONS OF THE STUDY

The present study employs snowball sampling and convenience sampling, which are forms of non-probability (non-random) sampling, and thus inherit the inherent limitations associated with non-random selection. Employee attitudes and perceptions may fluctuate over time, meaning that the findings reflect a specific period and may not remain consistent in the future. Moreover, the research is based on a limited sample size, so the results cannot be generalized to the entire population. This study focuses exclusively on employees' perspectives, without incorporating insights from employers or management, which limits the scope of understanding regarding electronic monitoring practices. Additionally, the research is confined to selected IT organizations in a few cities of Gujarat, making it difficult to draw broader conclusions about the Information Technology sector at large.

3.12 ORIGINAL CONTRIBUTION BY THE THESIS

The thesis prepared on the topic of electronic monitoring and its impact on employee performance is expected to provide significant contributions to the IT industry, major IT companies located in technology hubs, related sectors, researchers, and society as a whole. The contributions can be elaborated as follows:

1.) **Understanding Employee Perspectives:**

The study provides a detailed insight into employees' perceptions of electronic monitoring, including the types of monitoring they find acceptable, their preferred methods, and how monitoring affects their attitudes toward management decisions. By understanding these perspectives, IT organizations can design monitoring practices that align with employee expectations, ensuring that monitoring is perceived as a supportive tool rather than a punitive measure. This alignment can enhance employee satisfaction, motivation, and overall engagement, leading to better performance outcomes.

2.) **Identifying Challenges and Obstacles:**

The research identifies the challenges and difficulties employees face when subjected to electronic monitoring. This includes stress, perceived invasiveness, discomfort with certain monitoring tools, and other operational concerns. By recognizing these challenges, IT companies can proactively develop strategies, policies, and support systems to address employee concerns. This can help minimize resistance, reduce

negative psychological effects, and create a healthier work environment that balances organizational oversight with employee well-being.

3.) **Applicability to Related Industries:**

While the primary focus is on the IT sector, the findings are also relevant to other industries where electronic monitoring is implemented, such as BPOs, call centres, logistics, and financial services. The study provides actionable guidance on how organizations can implement monitoring policies in a manner that is perceived as fair, transparent, and developmental. This includes recommendations on how to communicate monitoring objectives, involve employees in monitoring decisions, and ensure that monitoring practices contribute to professional growth rather than stress or demotivation.

4.) **Practical Insights on Performance Impact:**

The research highlights both the positive and negative effects of electronic monitoring on employee performance. It identifies factors that enhance productivity, such as constructive feedback, appropriate monitoring intensity, and transparent practices, as well as obstacles that may reduce efficiency or engagement, such as excessive monitoring or lack of autonomy. Organizations can use these insights to fine-tune monitoring strategies to maximize productivity while minimizing negative consequences. This practical knowledge allows HR and management teams to adopt evidence-based approaches rather than relying solely on intuition or generic policies.

5.) **Support for HR Policy and Educational Use:**

The findings, along with the literature review and identification of research gaps, provide a valuable resource for HR professionals and policymakers. HR teams can use this study to design better monitoring frameworks, ensure compliance with ethical standards, and enhance employee satisfaction. Additionally, the research can serve as a case study for management education, illustrating real-world challenges and solutions related to electronic monitoring, employee performance, and workplace ethics.

6.) **Foundation for Future Research:**

This research establishes a strong basis for future studies in the domain of electronic monitoring. It opens opportunities to explore related areas, such as monitoring for workplace safety, ethical implications of continuous surveillance, the role of AI in

employee oversight, and cross-industry comparisons. Prospective researchers can build on this study's methodology, findings, and recommendations to further examine the complex interactions between monitoring practices, employee behavior, and organizational outcomes. The study's focus on employee perceptions also highlights the importance of integrating the human perspective into the design and evaluation of monitoring systems.

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Chapter 4
Data Analysis
&
Hypothesis Testing

4.1: BACKGROUND

This chapter focuses on the comprehensive analysis of the collected data. The data has been gathered using a structured questionnaire designed to capture relevant information from the respondents. Collecting this data is to derive meaningful conclusions, which will be supported byrigorous statistical analysis.

The gathered data will be analyzed using various statistical tests to explore relationships and patterns within the data, including cross-tabulations, Wilcoxon Signed-Rank Test, Logistic Regression, and chi-square tests. Hypotheses will be formulated based on the research objectives, and these hypotheses will be tested using appropriate statistical techniques to ensure the validity and reliability of the findings.

IBM SPSS Statistics 20.0 will be utilized for the analysis, providing a robust platform for conducting the necessary statistical tests. The dataset comprises responses from 400 IT employees across different levels of the organizational hierarchy and major IT cities of Gujarat ensuring a diverse and representative sample. This structured data collection and analysis approach will facilitate a thorough examination of the research questions and support the development of well-founded conclusions.

The research objective on which hypotheses are framed and statistical tests are been implementedare as follows:

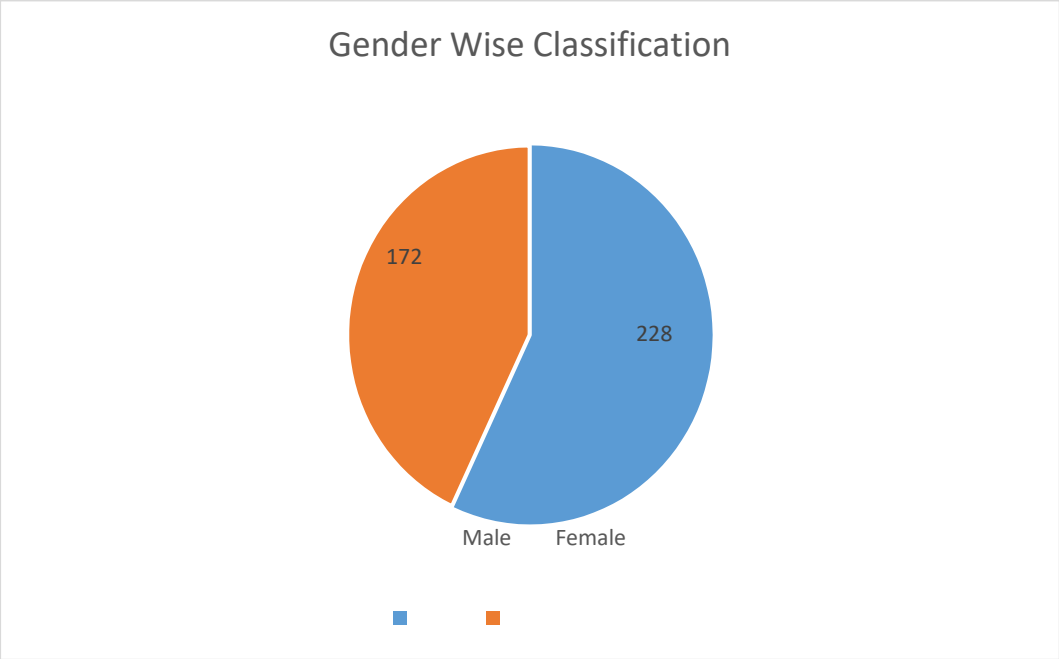
- To evaluate the impact of electronic monitoring practices on the performance of employees.
- To identify the relationship between perception of employees of the IT sector towards Electronic Monitoring and its impact on performance.
- To differentiate different modes of monitoring preferred by employees and implemented by the company.
- To highlight major reasons that employees believe in implementing monitoring practices
- To provide recommendations to management and employees to have a balanced approachtoward electronic monitoring.

4.2: ANALYSIS OF DEMOGRAPHIC VARIABLES

Table 4.2.1: Number of Respondents (Gender wise)

	Category	Frequency	Percentage
Gender	Male	228	57
	Female	172	43
	Total	**400**	**100**

Chart 4.2.1: Number of Respondents (Gender wise)

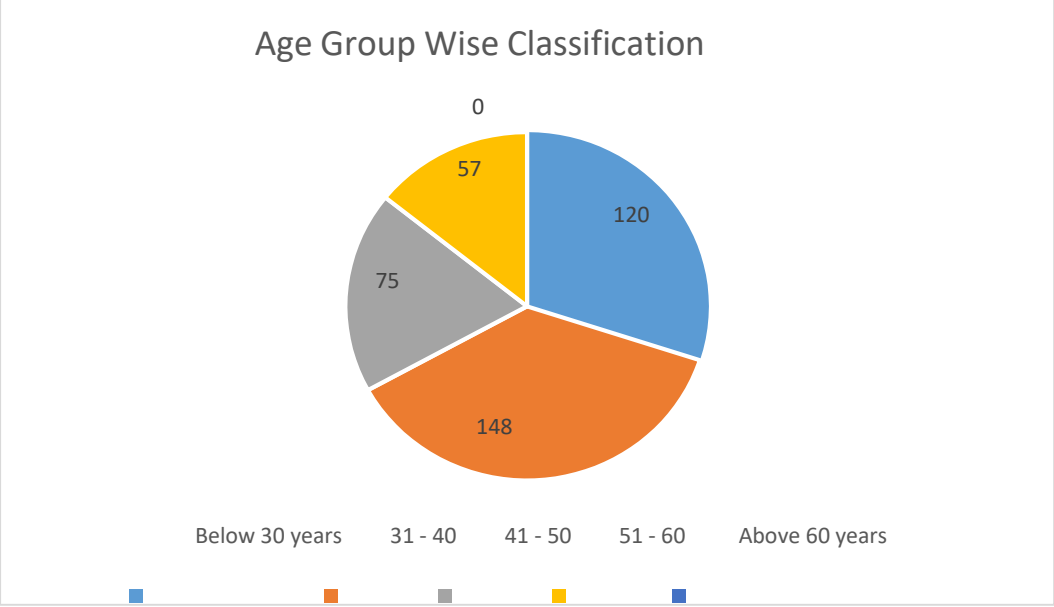


The above-mentioned table and chart detail the gender distribution within a sample of 400 individuals. Of this total, 228 individuals are identified as male, constituting 57% of the sample, and 172 females representing 43% of the population.

Table 4.2.2: Number of Respondents (Age Group Wise)

	Category	Frequency	Percentage
Age Group	Below 30 years	120	30
	31 - 40	148	37
	41 - 50	75	18.75
	51 - 60	57	14.25
	Above 60 years	0	0
	Total	**400**	**100**

Chart 4.2.2: Number of Respondents (Age Group Wise)

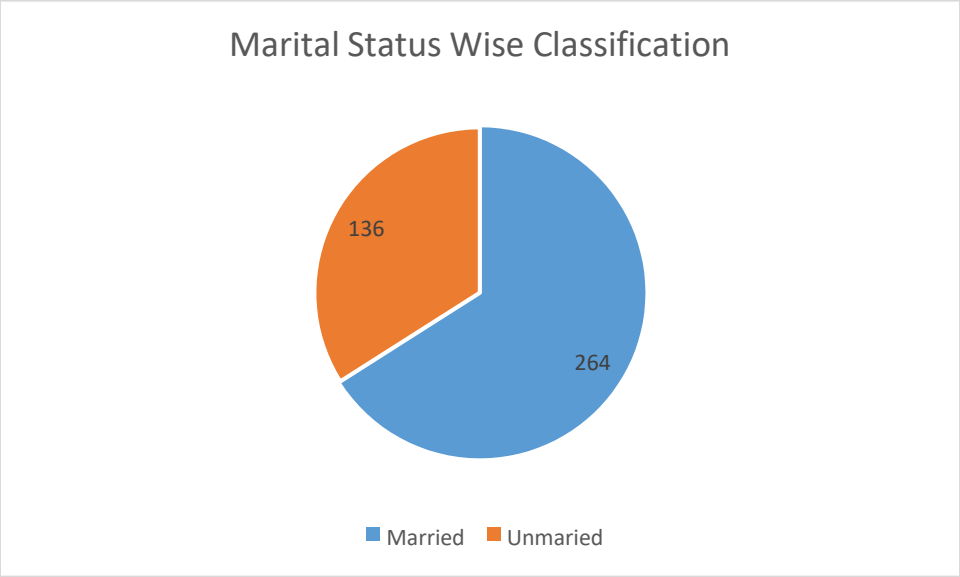


The table and chart show the age distribution of 400 individuals. The largest group (31–40 years) has 148 people (37%), followed by those under 30 with 120 people (30%). The 41–50 and 51–60 age groups include 75 (18.75%) and 57 (14.25%) individuals, respectively, with no one over 60. Overall, the sample is mainly concentrated in the younger to middle-aged brackets.

Table 4.2.3: Number of Respondents (Marital Status)

	Category	Frequency	Percentage
Marital Status	Married	264	66
	Unmarried	136	34
	Total	**400**	**100**

Chart 4.2.3: Number of Respondents (Marital Status)

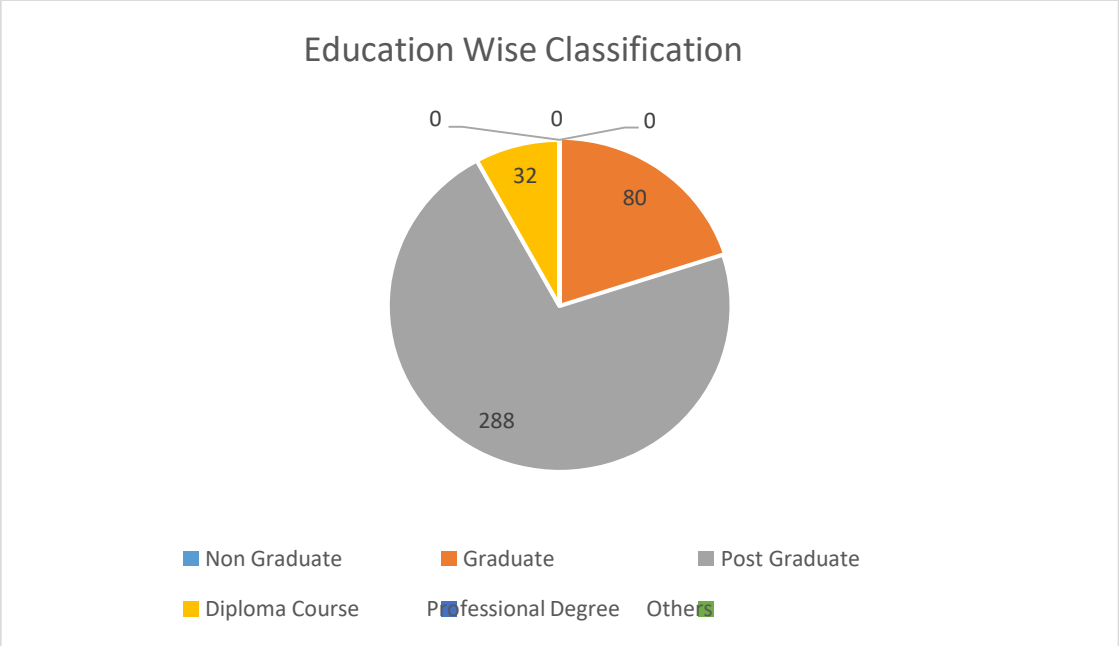


The above table and chart present the marital status distribution with a significant majority of the sample, comprising 264 individuals, or 66%, who are married. This indicates that two-thirds of the population falls within the married category. In contrast, 136 individuals, representing 34% of thesample, are unmarried.

Table 4.2.4: Number of Respondents (Education Wise)

	Category	Frequency	Percentage
Education	Non Graduate	0	0
	Graduate	80	20
	Post Graduate	288	72
	Diploma Course	32	8
	Professional Degree	0	0
	Others	0	0
	Total	**400**	**100**

Chart 4.2.4: Number of Respondents (Education Wise)

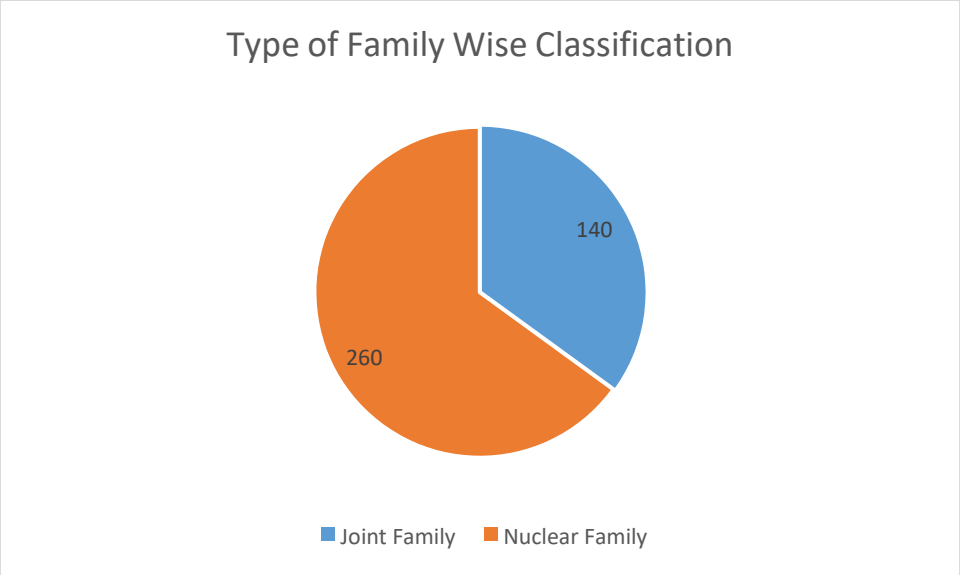


The above table and chart show the educational levels of 400 individuals. Majority of the sample, 288 (72%), are postgraduates, followed by 80 graduates (20%) and 32 diploma holders (8%). There are no individuals in non-graduate, professional, or other categories, indicating a sample largely composed of highly educated individuals.

Table 4.2.5: Number of Respondents (Family Structure)

	Category	Frequency	Percentage
Type of Family	Joint Family	140	35
	Nuclear Family	260	65
	Total	**400**	**100**

Chart 4.2.5: Number of Respondents (Family Structure)



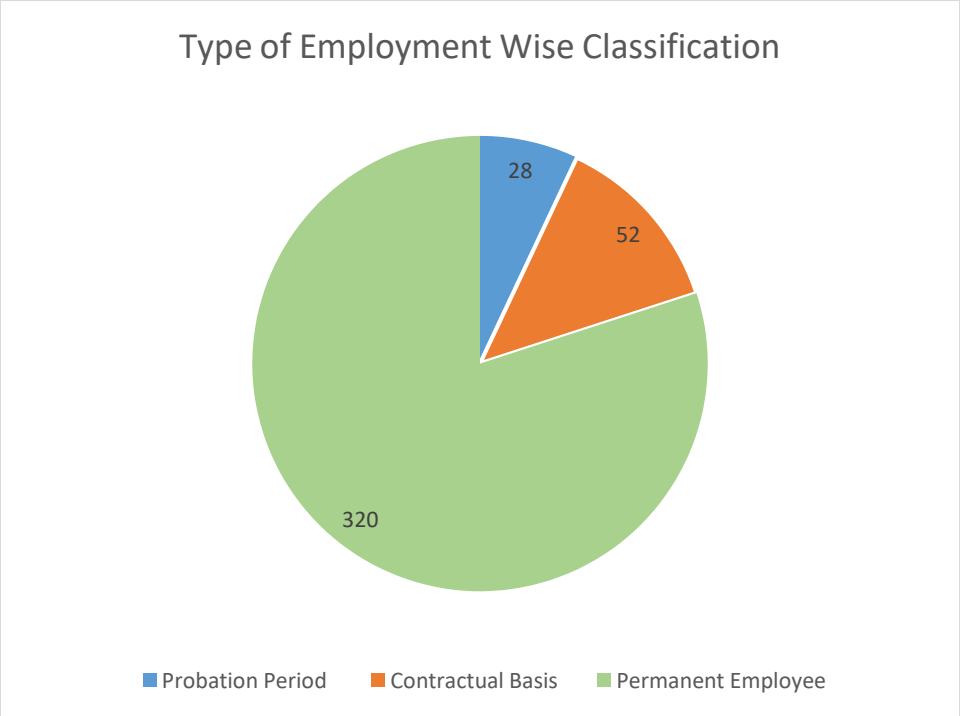
The above table and chart provide an analysis of the types of family structures within a sample of 400 individuals. Among these 260 individuals or 65%, live in nuclear families, and 140 individuals, making up 35% of the sample, belong to joint families. This indicates a prevalent trendtowards smaller, immediate family units within the population.

4.3: **ANALYSIS OF PROFESSIONAL INFORMATION**

Table 4.3.1: Number of Respondents (Type of Employment)

	Category	Frequency	Percentage
Type of Employment	Probation Period	28	7
	Contractual Basis	52	13
	Permanent Employee	320	80
	Total	**400**	**100**

Chart 4.3.1: Number of Respondents (Type of Employment)

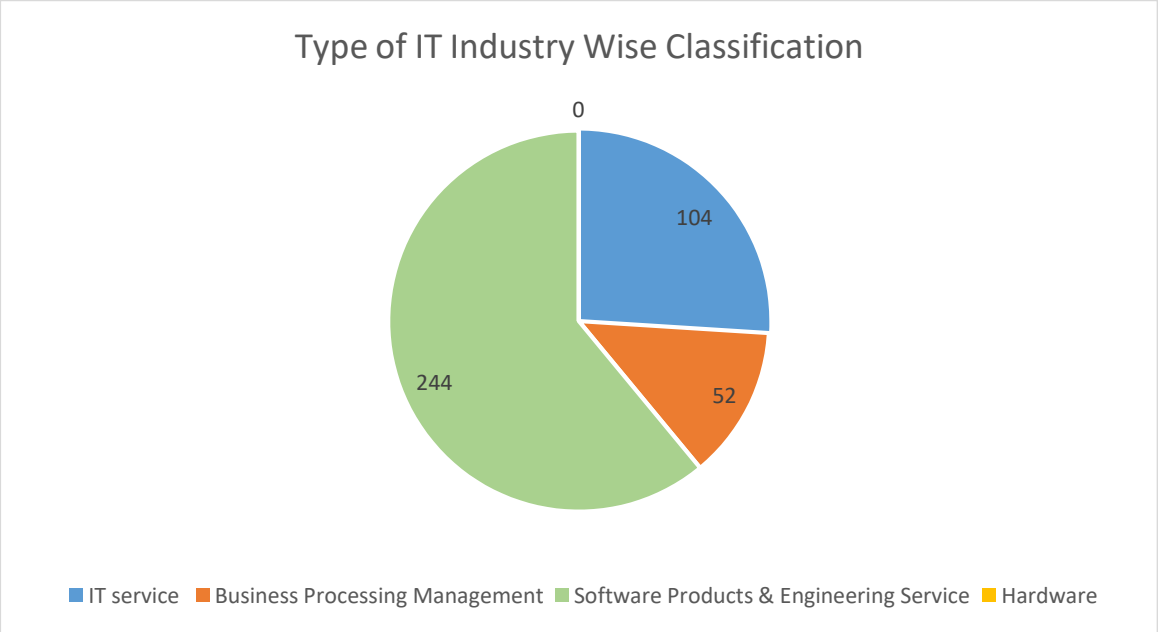


The table and chart show employment types among 400 individuals. A significant majority of 320 (80%) are permanent employees, while 52 (13%) are contractual and 28 (7%) are on probation, highlighting a strong preference for permanent roles with some flexible and transitional positions.

Table 4.3.2: Number of Respondents (Type of IT Industry)

	Category	Frequency	Percentage
Type of IT Industry	IT service	104	26
	Business Processing Management	52	13
	Software Products & Engineering Service	244	61
	Hardware	0	0
	Total	**400**	**100**

Chart 4.3.2: Number of Respondents (Type of IT Industry)

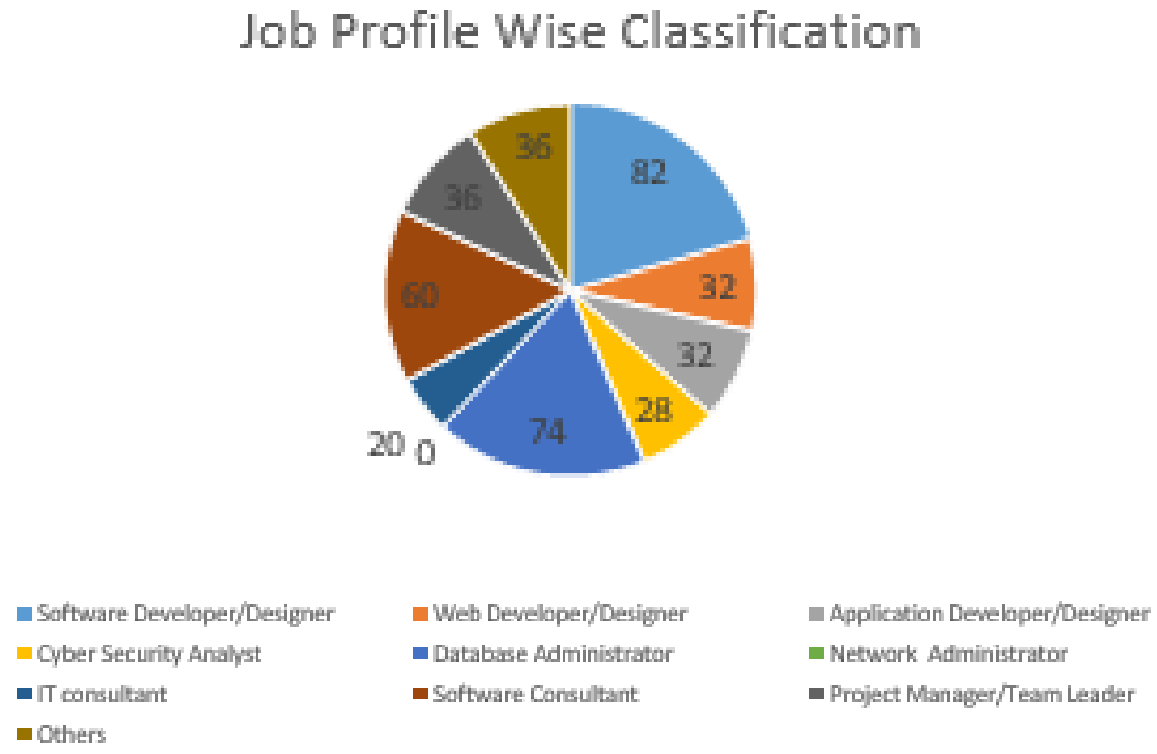


The above table and chart show IT industry employment among 400 individuals. The majority, 244 (61%), work in Software Products & Engineering Services, followed by 104 (26%) in IT Services and 52 (13%) in Business Process Management. No individuals are employed in the hardware sector.

Table 4.3.3: Number of Respondents (Job Profile)

		Frequency	Percentage	Category	Frequency	Percentage
Job Profile	Software Developer/ Designer	82	20.5	Network Administrator	0	0
	Web Developer/ Designer	32	8	IT consultant	20	5
	Application Developer/ Designer	32	8	Software Consultant	60	15
	Cyber Security Analyst	28	7	Project Manager/TeamLeader	36	9
	Database Administrator	74	18.5	Others	36	9
	Total				**400**	**100**

Chart 4.3.3: Number of Respondents (Job Profile)

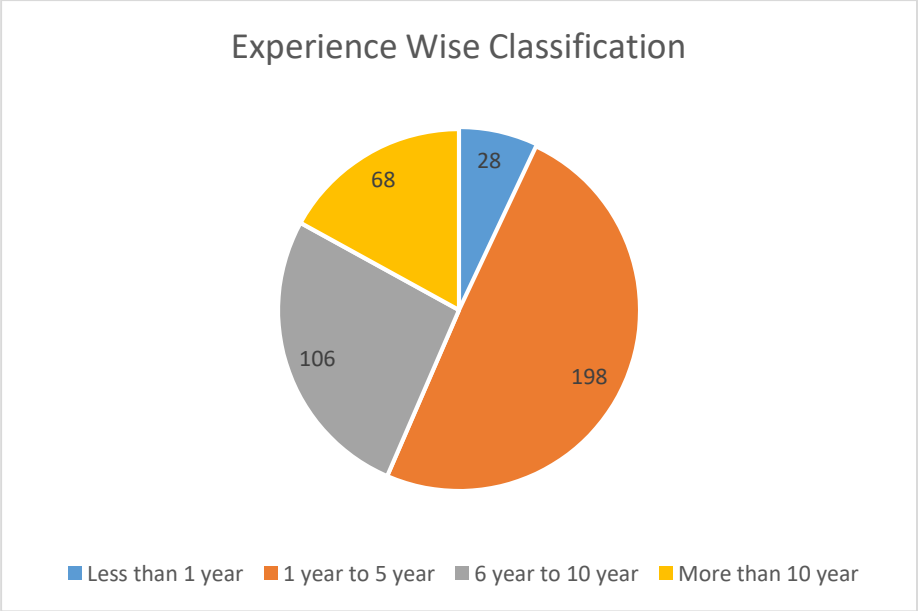


The table categorizes job profiles within a sample of 400 individuals, highlighting diverse roles in the IT industry. The largest segment consists of Software Developers/Designers, with 82 individuals making up 20.5% of the sample. Database Administrators follow closely, accounting for 74 individuals or 18.5%. Software Consultants are also well-represented, with 60 individuals (15%). Other significant roles include Project Managers/Team Leaders and individuals in the "Others" category, each comprising 36 individuals or 9%. Web Developers/Designers an Application Developers/Designers each account for 32 individuals (8%), while Cyber Security Analysts number 28 (7%). IT Consultants form a smaller segment with 20 individuals (5%) and there are no Network Administrators, with a frequency of 0. Overall, the data reflects a diverse range of IT job profiles, with significant emphasis on software and database-related roles.

Table 4.3.4: Number of Respondents (Experience Wise)

	Category	Frequency	Percentage
Experience	Less than 1 year	28	7
	1 year to 5 year	198	49.5
	6-year to 10-year	106	26.5
	More than 10 year	68	17
	Total	**400**	**100**

Chart 4.3.4: Number of Respondents (Experience Wise)

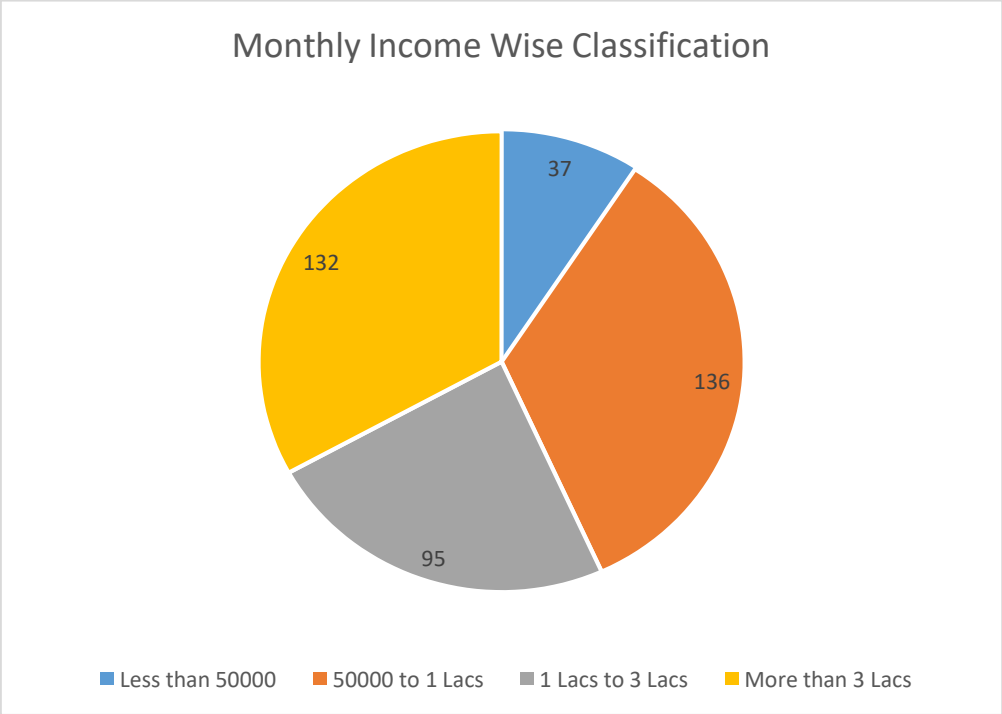


The table shows the work experience distribution of 400 individuals, with the largest group (198 individuals, 49.5%) having 1 to 5 years of experience. Mid-career professionals with 6 to 10 years of experience total 106 (26.5%), while those with over 10 years of experience make up 68 (17%).Entry-level individuals with less than 1 year of experience are the smallest group at 28 (7%). This distribution highlights a workforce predominantly composed of individuals with moderate to significant experience.

Table 4.3.5: Number of Respondents (Monthly Income Wise)

	Category	Frequency	Percentage
Monthly Income	Less than 50000	37	9.25
	50000 to 1 Lacs	136	34
	1 Lacs to 3 Lacs	95	23.75
	More than 3 Lacs	132	33
	Total	**400**	**100**

Chart 4.3.5: Number of Respondents (Monthly Income Wise)



The table and chart show monthly incomes of 400 individuals. Most earn 50,000–1 lakh (136, 34%) or over 3 lakhs (132, 33%), while 1–3 lakh earners total 95 (23.75%) and less than 50,000 earners are 37 (9.25%), indicating a wide income range.

4.4: EMPLOYEE'S PERCEPTION TOWARDS ELECTRONIC MONITORING

Table 4.4.1: Monitoring at workplace

	Particulars	Responses	Percentage
Have you been monitored at your place	Yes	400	100
	No	0	0
	Total	**400**	**100**

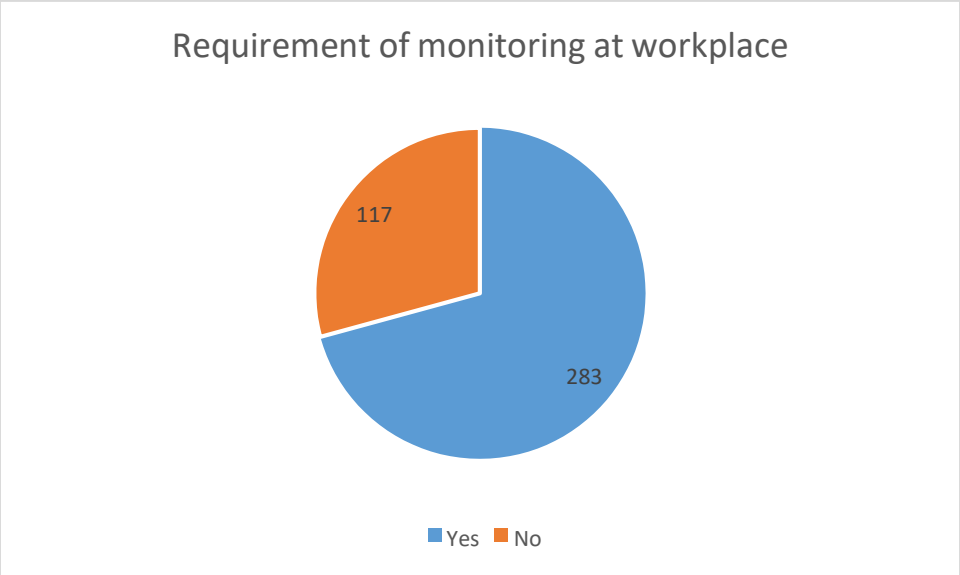
Chart 4.4.1: Monitoring at Workplace

The above table and chart illustrate that every respondent, totaling 400, answered "Yes," indicating that they are being monitored. There were respondents who answered "No," but those were not considered for further analysis resulting in a frequency of 0 for that category.

Table 4.4.2: Requirement of Monitoring at Workplace

	Particulars	Responses	Percentage
Do You think Monitoring is required for the job?	Yes	283	71
	No	117	29
	Total	**400**	**100**

Chart 4.4.2: Requirement of Monitoring at Workplace

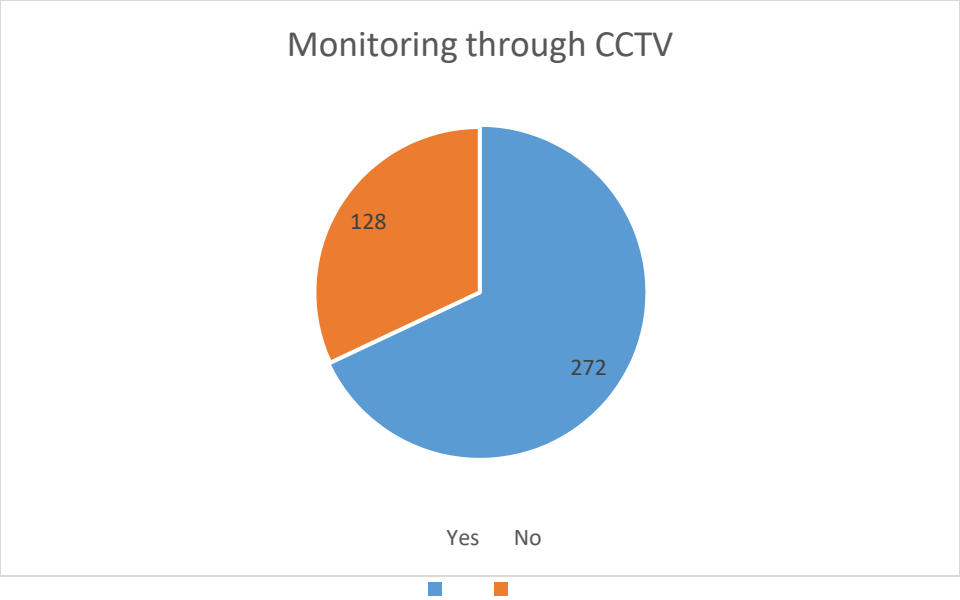


The above table and chart delineates responses among a sample of 400 individuals. A significant majority, comprising 283 respondents (70.75%), believe that monitoring is necessary for their job. This suggests a general acceptance or understanding of the benefits of monitoring. Conversely, 117 respondents (29.25%) do not think monitoring is required, indicating a substantial minority with potential concerns.

Table 4.4.3: Monitoring through CCTV

	Particulars	Responses	Percentage
Have you been monitored through CCTV Camera	Yes	272	68
	No	128	32
	Total	**400**	**100**

Chart 4.4.3: Monitoring through CCTV

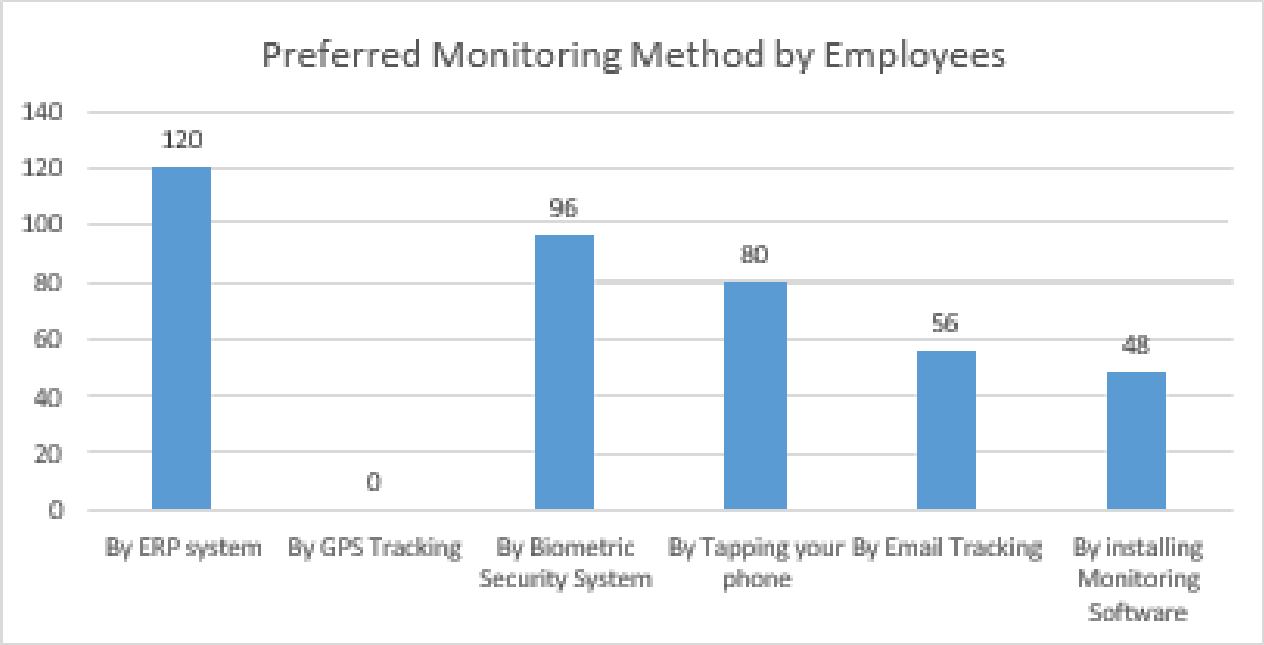


The above table and chart respond to a sample of 400 individuals. Out of these, 272 respondents, or 68%, reported that they are monitored through CCTV cameras, and in contrast, 128 respondents, representing 32%, indicated that they are not subject to CCTV monitoring.

Table 4.4.4: Preferred Monitoring Method by Employees

	Particulars	**Responses**	Percentage
Preferred Monitoring Method Apart from CCTV	By ERP system	120	30
	By GPS Tracking	0	0
	By Biometric Security System	96	24
	By Tapping your phone	80	20
	By Email Tracking	56	14
	Installing Monitoring Software	48	12
	Total	**400**	100

Chart 4.4.4: Preferred Monitoring Method by Employees

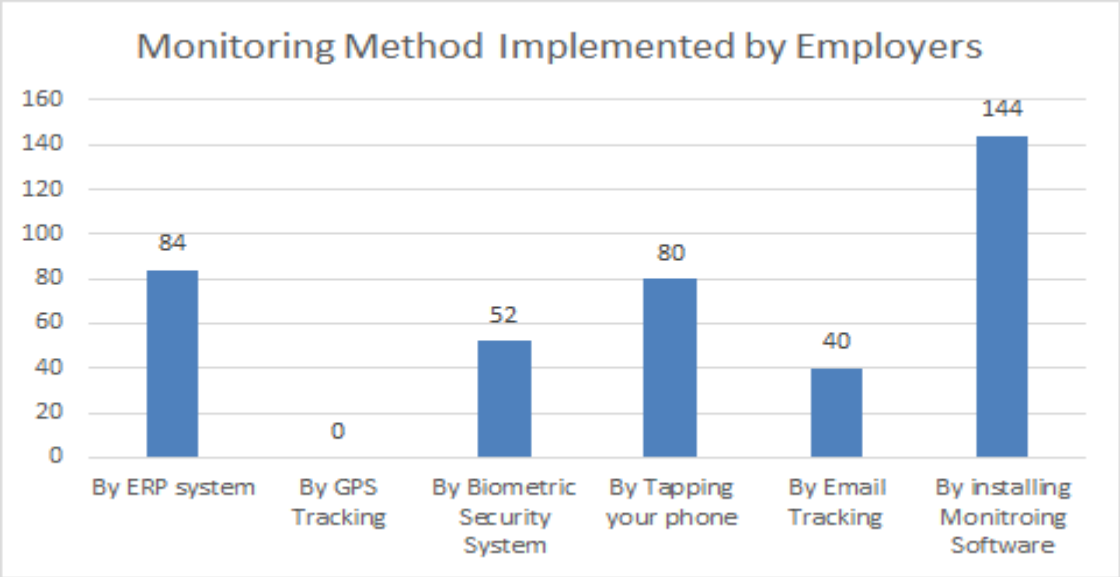


The above table and chart outline the preferred monitoring methods apart from CCTV among a sample of 400 IT employees. The most favored method among employees is monitoring by ERP systems, with 120 responses, representing 30% of the sample. Biometric security systems are the next most preferred, chosen by 96 individuals (24%). Tapping phones and email tracking are also notable methods, with 80 (20%) and 56 (14%) responses respectively. Monitoring through installed software is preferred by 48 individuals (12%). Notably, GPS tracking received no responses, indicating no preference for this method. This distribution highlights a diverse range of monitoring preferences, with a significant inclination towards ERP systems and biometric security.

Table 4.4.5: Monitoring Method Implemented by the Employers

	Particulars	Responses	Percentage
Monitoring Method Implemented by the Organisation	By ERP system	84	21
	By GPS Tracking	0	
	By Biometric Security System	52	13
	By Tapping your phone	80	20
	By Email Tracking	40	10
	Installing Monitoring Software	144	36
	Total	**400**	100

Chart 4.4.5: Monitoring Method Implemented by the Employers

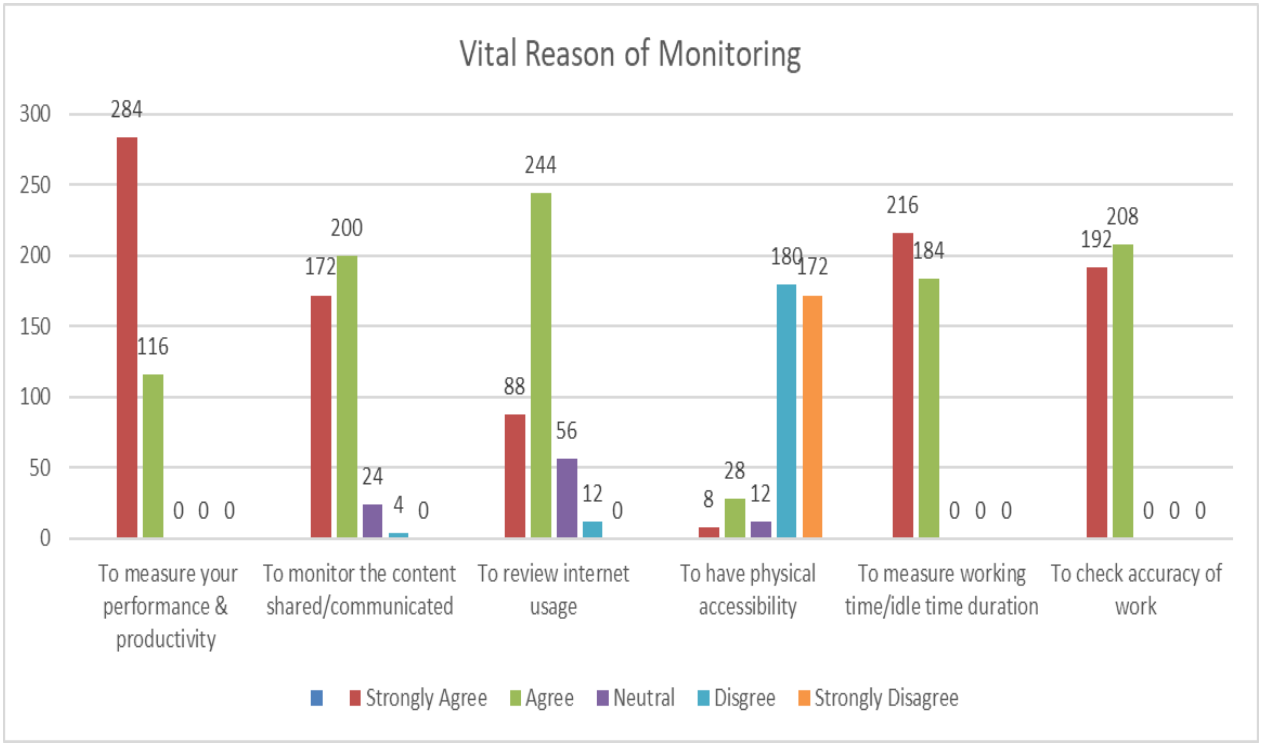


The table and chart show monitoring methods used by employers. Software monitoring leads with 144 responses (36%), followed by ERP systems at 84 (21%) and phone tapping at 80 (20%). Biometric systems and email tracking account for 52 (13%) and 40 (10%) respectively, while GPS tracking is not used. This distribution indicates a strong preference for software-based monitoring, with significant usage of ERP systems and phone tapping.

Table 4.4.6: Employee Perspectives on Vital Reasons for Monitoring

	Particulars	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
What according to you could be the vital reason for monitoring	To measure your performance & productivity	284	116	0	0	0	**400**
	To monitor the content shared/communicated	172	200	24	4	0	**400**
	To review internet usage	88	244	56	12	0	**400**
	To have physical accessibility	8	28	12	180	172	**400**
	To measure working time/idle time duration	216	184	0	0	0	**400**
	To check the accuracy of the work	192	208	0	0	0	**400**
	Total	**960**	**980**	**92**	**196**	**172**	**1440**

Chart 4.4.6: Employee Perspectives on Vital Reasons for Monitoring

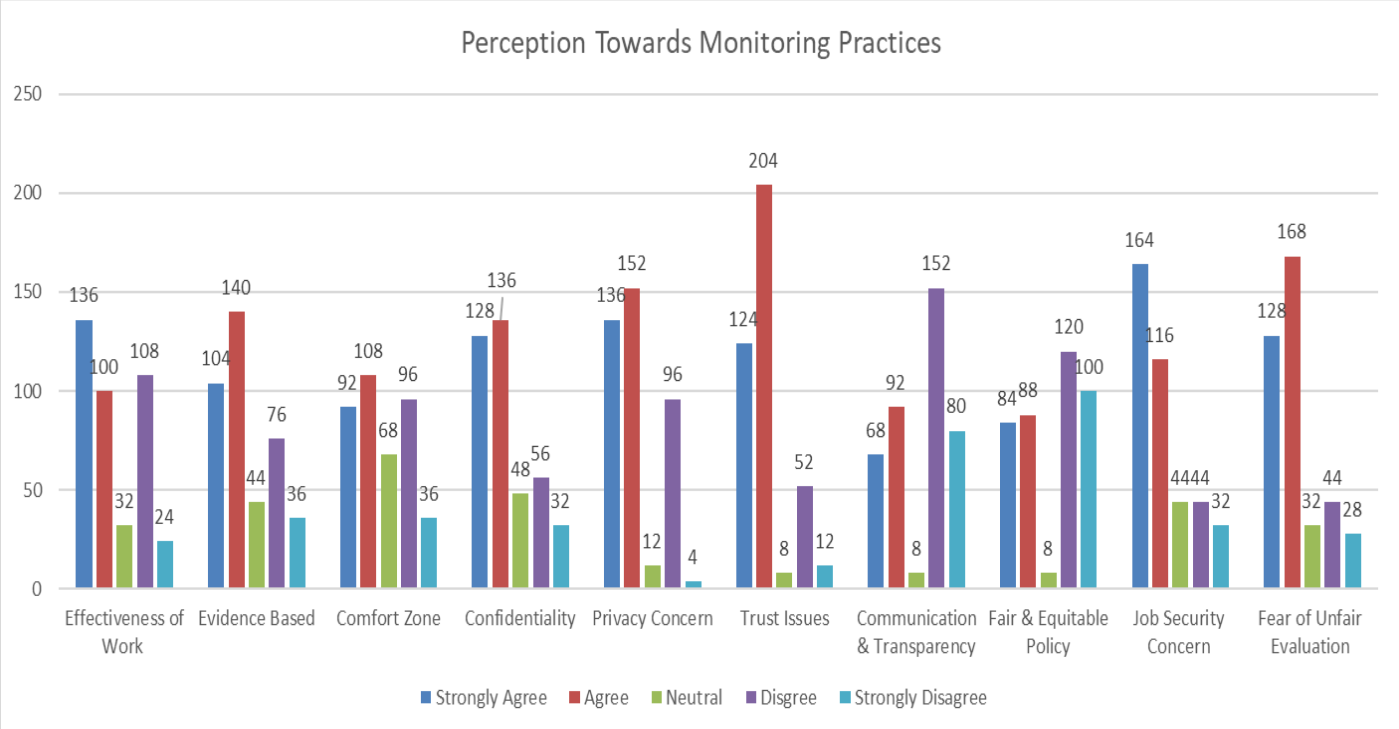


The table provides a comprehensive analysis of employees' perspectives on various reasons for workplace monitoring within IT companies. Among the reasons surveyed, measuring performance and productivity received unanimous support, with 284 employees strongly agreeing and 116 agreeing. Monitoring the content shared/communicated also garnered substantial approval, with 172 respondents strongly agreeing and 200 agreeing. Internet usage monitoring was mostly favored, as evidenced by 244 employees agreeing and 88 strongly agreeing, while 56 remained neutral. Conversely, monitoring practices for physical accessibility were largely opposed, with 180 employees disagreeing and 172 strongly disagreeing. Another reason for measuring working time and idle time duration was strongly endorsed by respondents, with 216 strongly agreeing and 184 agreeing. Similarly, 192 respondents strongly agreed and 208 respondents agreed that monitoring is practiced to ensure the accuracy of work performed. Overall, the data reveals that employees in IT companies largely perceive that monitoring is practiced to measure their productivity and performance.

Table 4.4.7: Perception of Employees towards Electronic Monitoring

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
What is your perception of monitoring practices implemented at your organization	Effectiveness of Work	136	100	32	108	24	**400**
	Evidence-Based	104	140	44	76	36	**400**
	Comfort Zone	92	108	68	96	36	**400**
	Confidentiality	128	136	48	56	32	**400**
	Privacy Concern	136	152	12	96	4	**400**
	Trust Issues	124	204	8	52	12	**400**
	Communication & Transparency	68	92	8	152	80	**400**
	Fair & Equitable Policy	84	88	8	120	100	**400**
	Job Security Concern	164	116	44	44	32	**400**
	Fear of Unfair Evaluation	128	168	32	44	28	**400**
	Total	**1164**	**1304**	**304**	**844**	**384**	**2836**

Chart 4.4.7: Perception of Employees Towards Electronic Monitoring



The above table and chart provide an overview of employee perceptions regarding various aspects of electronic monitoring in the workplace on a Likert scale.

1. **Effectiveness of Work**: This factor received mixed responses, with 136 employees strongly agreeing and 100 agreeing, indicating significant support. However, 32 were neutral, 108 disagreed, and 24 strongly disagreed, showing considerable opposition as well.
2. **Evidence-Based**: This factor received a positive response from 104 strongly agreeing and 140 agreeing, while 44 were neutral. However, 76 disagreed and 36 strongly disagreed, indicating varied perspectives.
3. **Comfort Zone**: The responses were varied, with 92 strongly agreeing and 108 agreeing. A notable number of 68 were neutral, and there were 96 disagreements and 36 strong disagreements, suggesting mixed feelings about this factor.
4. **Confidentiality**: This factor received strong support, with 128 strongly agreeing and 136 agreeing. However, 48 were neutral, 56 disagreed, and 32 strongly disagreed, indicating general approval with some reservations.
5. **Privacy Concern**: This concern was highlighted by 136 strongly agreeing and 152 agreeing, showing significant concern. Only 12 were neutral, while 96 disagreed and 4 strongly disagreed, highlighting a notable privacy concern.
6. **Trust Issues**: Trust issues were prominent, with 124 strongly agreeing and 204 agreeing. Only 8 were neutral, while 52 disagreed and 12 strongly disagreed, indicating a substantial impact on trust.
7. **Communication & Transparency**: Communication regarding monitoring practices was seen as inadequate, with 68 strongly agreeing and 92 agreeing. Only 8 were neutral, while 152 disagreed and 80 strongly disagreed, reflecting dissatisfaction.
8. **Fair & Equitable Policy**: Fair application of monitoring practices was questioned, with 84 strongly agreeing and 88 agreeing. Only 8 were neutral, while 120 disagreed and 100 strongly disagreed, indicating significant concerns about fairness and consistency.

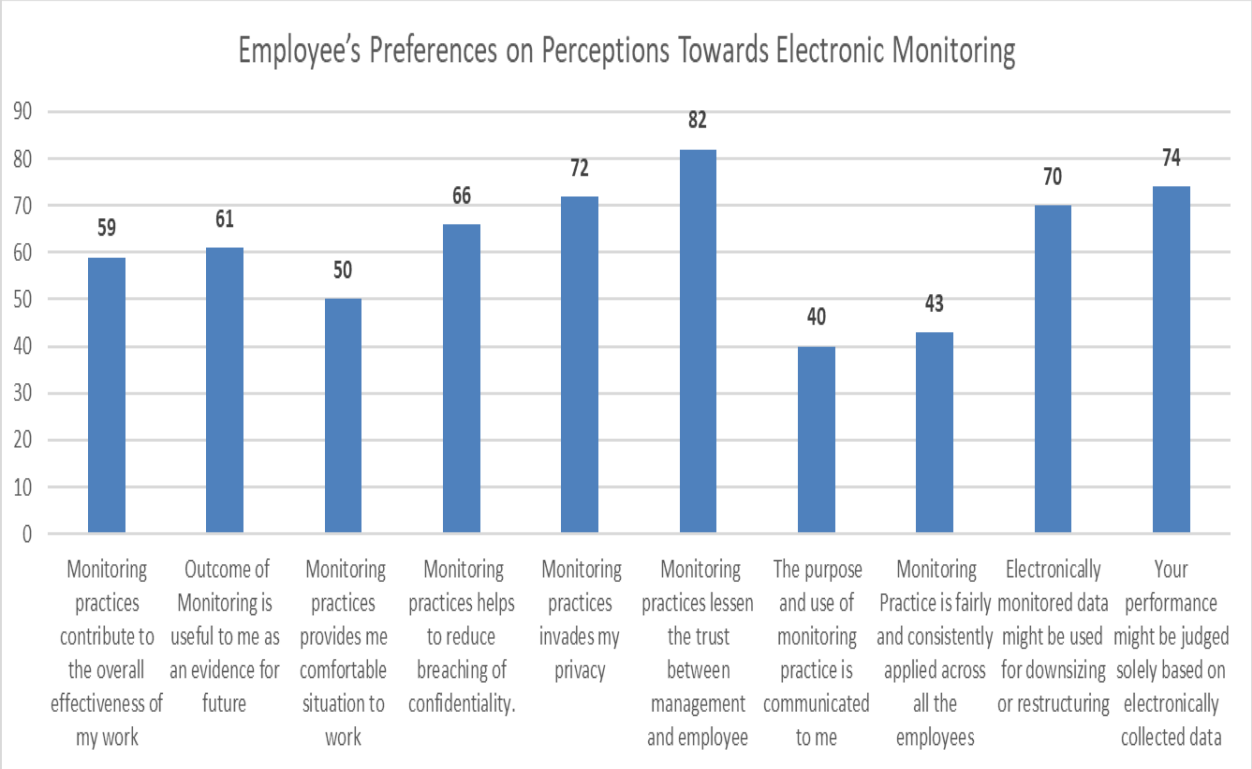
9 **Job Security Concern**: This concern was strongly felt, with 164 strongly agreeing and 116 agreeing. There were 44 neutral responses, while 44 disagreed and 32 strongly disagreed, highlighting fears of job security implications.

10 **Fear of Unfair Evaluation**: This factor also raised concerns, with 128 strongly agreeing and 168 agreeing. There were 32 neutral responses, while 44 disagreed and 28 strongly disagreed, indicating apprehension about performance evaluations based on electronic monitoring.

Table 4.4.8 Employee's Preferences on Perceptions Towards Electronic Monitoring

Particulars	A total of Agreed Respondents	Percentage
Monitoring practices contribute to the overall effectiveness of my work	236	59
The outcome of Monitoring is useful to me as evidence for future	244	61
Monitoring practices provide me with a comfortable situation at work	200	50
Monitoring practices help to reduce the breaching of confidentiality.	264	66
Monitoring practices invade my privacy	288	72
Monitoring practices lessen the trust between management and employee	328	82
The purpose and use of monitoring practice is communicated to me	160	40
Monitoring Practice is fairly and consistently applied to all employees	172	43
Electronically monitored data might be used for downsizing or restructuring	280	70
Your performance might be judged solely based on electronically collected data	296	74

Chart 4.4.8 Employee's Preferences on Perceptions Towards Electronic Monitoring



The above table and chart provide an overview of employee perceptions regarding various aspects of electronic monitoring in the workplace, represented as percentages.

1. **Monitoring practices contribute to the overall effectiveness of my work (59%)**: A majority of employees (59%) believe that monitoring practices positively impact their work effectiveness, indicating a generally favorable view of monitoring in terms of productivity.
2. **Outcome of Monitoring is useful to me as evidence for the future (61%)**: With 61% of employees finding the outcomes of monitoring useful for future reference, there is a strong endorsement of its practicality and utility.
3. **Monitoring practices provide me with a comfortable situation to work in (50%)**: Half of the employees (50%) feel that monitoring contributes to a comfortable working environment, reflecting a split opinion on this aspect.
4. **Monitoring practices help to reduce breaching of confidentiality (66%)**: A significant portion (66%) agrees that monitoring helps in maintaining confidentiality, suggesting that employees see monitoring as a valuable tool for security and data protection.
5. **Monitoring practices invade my privacy (72%)**: A substantial 72% of employees feel that monitoring practices invade their privacy, indicating a prevalent unease about personal space and autonomy.
6. **Monitoring practices lessen the trust between management and employees (82%)**: A considerable majority (82%) believe that monitoring erodes the trust between management and employees, highlighting a critical issue of trust and morale in the workplace.
7. **The purpose and use of monitoring practice is communicated to me (40%)**: Only 40% of employees feel that the purpose and use of monitoring practices are communicated effectively to them, pointing to a significant gap in communication.
8. **Monitoring Practice is fairly and consistently applied across all the employees (43%)**: Just 43% think that these practices are applied fairly and consistently across all employees, suggesting concerns about equity and consistency.

9. **Electronically monitored data might be used for downsizing or restructuring (70%)**: A significant 70% of employee's express concern that electronically monitored data might be used for downsizing or restructuring, reflecting fears about job security.
10. **Your performance might be judged solely based on electronically collected data (74%)**: The highest percentage (74%) of employees worry that their performance might be judged solely based on electronically collected data, indicating significant apprehension about being evaluated on potentially narrow criteria.

Overall, the analysis of employee perceptions regarding electronic monitoring practices reveals both strong support and significant concerns. Among the various concerning factors, trust issues and the fear of unfair evaluation stand out as the most significant, as expressed by the respondents. On the positive side, monitoring practices are favorably viewed for their role in reducing breaches of confidentiality and their usefulness as evidence for future reference.

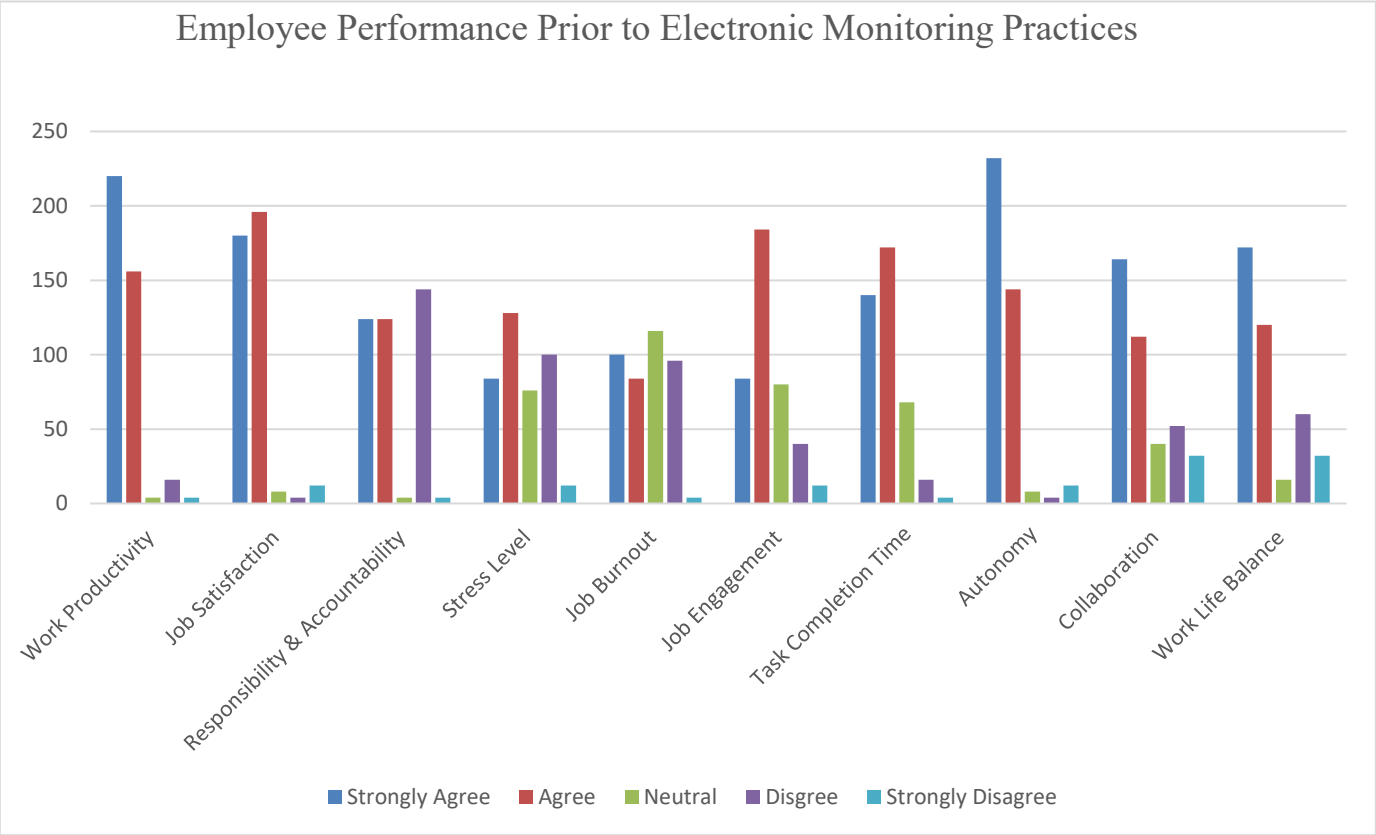
4.5 IMPACT OF ELECTRONIC MONITORING ON EMPLOYEE PERFORMANCE

Table 4.5.1 Employee Performance Prior to Electronic Monitoring Practices

Factors	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Work Productivity	220	156	4	16	4	**400**
Job Satisfaction	180	196	8	4	12	**400**
Responsibility & Accountability	124	124	4	144	4	**400**
Stress Level	84	128	76	100	12	**400**
Job Burnout	100	84	116	96	4	**400**
Job Engagement	84	184	80	40	12	**400**
Task Completion Time	140	172	68	16	4	**400**
Autonomy	232	144	8	4	12	**400**
Collaboration	164	112	40	52	32	**400**
Work Life Balance	172	120	16	60	32	**400**
Total	**1500**	**1420**	**420**	**532**	**128**	**4000**

Source: Filled Questionnaire

Chart 4.5.1: Employee Performance Prior to Electronic Monitoring Practices



The above table and chart represent an overview of employee's performance prior to electronic monitoring practices in the workplace on a Likert scale.

1. Work Productivity: Work productivity before the implementation of electronic monitoring methods was overwhelmingly positive, with 94% of employees (376 respondents) strongly agreeing or agreeing that they were productive in their roles. Only a small portion (24 respondents) expressed neutral or negative views. This indicates that employees generally felt confident and efficient in their work. The minimal negative sentiment suggests that productivity was not a significant concern prior to introducing monitoring.

2. Job Satisfaction: Job satisfaction, evaluated before the introduction of electronic monitoring methods, was rated highly, with 88% of employees (376 respondents) expressing positive sentiments. A negligible 24 respondents provided neutral or negative responses,

showing that most employees were content with their roles. This strong level of satisfaction suggests a workplace environment where employees felt valued and motivated before any monitoring practices were introduced.

3. Responsibility & Accountability: The evaluation of responsibility and accountability before the implementation of electronic monitoring showed a split in perceptions, with only 50% of employees (248 respondents) strongly agreeing or agreeing that they felt responsible and accountable in their roles. A substantial portion (148 respondents) disagreed or strongly disagreed, indicating a lack of clarity or alignment in job responsibilities. Addressing these concerns could have been an area of focus even before monitoring practices were put in place.

4. Stress Levels: Stress levels, as reported before the introduction of electronic monitoring methods, appeared to be a significant area of concern. While 184 respondents reported positive sentiments, a larger portion (212 respondents) acknowledged higher stress levels (neutral to disagreement). This suggests that work-related pressures were prevalent for many employees even before monitoring, indicating the need for stress management initiatives.

5. Job Burnout: Employee perceptions of burnout prior to implementing electronic monitoring revealed a balanced yet concerning pattern. While 184 respondents reported positivity, 216 (neutral to disagreement) indicated challenges, suggesting a significant portion of the workforce felt overburdened or fatigued. Addressing burnout was clearly a critical area of concern before monitoring practices were adopted.

6. Job Engagement: Job engagement before the application of electronic monitoring garnered mixed feedback, with 268 respondents (64%) feeling engaged in their work, while 132 expressed neutrality or dissatisfaction. While the majority displayed enthusiasm and commitment, the remaining proportion indicated room for improvement. Encouraging deeper engagement could have been a priority even before monitoring practices were introduced.

7. Task Completion Time: Task completion time, as evaluated before electronic monitoring methods were implemented, was rated positively by 78% of employees (312 respondents), showcasing a generally efficient work culture. Only 88 respondents expressed neutral or

negative views, suggesting that workflow processes were effective at the time. Maintaining and refining these processes could further optimize efficiency.

8. Autonomy: Autonomy stood out as the highest-rated factor in the evaluation prior to electronic monitoring, with 94% of employees (376 respondents) strongly agreeing or agreeing that they had sufficient independence in their roles. Only 24 respondents provided neutral or negative feedback, emphasizing autonomy as a major strength in the pre-monitoring period. Preserving this independence could have been instrumental in maintaining high job satisfaction.

9. Collaboration: Collaboration before the introduction of electronic monitoring showed mixed results. While 276 respondents (69%) expressed positive views, a notable 124 reported dissatisfaction. This suggests potential gaps in communication or team synergy even before monitoring practices were implemented. Enhancing collaborative tools and strategies could have addressed these challenges.

10. Work-Life Balance: Work-life balance, as assessed before electronic monitoring methods were implemented, received 292 positive responses (73%). However, 108 respondents expressed dissatisfaction or neutrality, highlighting challenges for a significant minority. While many employees felt balanced, addressing the concerns of those struggling could have improved overall satisfaction and retention even before monitoring systems were in place. Strategies like flexible work arrangements could have been explored during this period.

Conclusion:

The overall analysis of employee performance factors before the implementation of electronic monitoring methods highlights a mix of strengths and areas for improvement. Factors such as autonomy and work productivity emerged as highly favorable, with 94% of employees reporting positive sentiments. Similarly, job satisfaction and task completion time reflected strong approval, indicating that employees were generally content, efficient, and empowered in their roles.

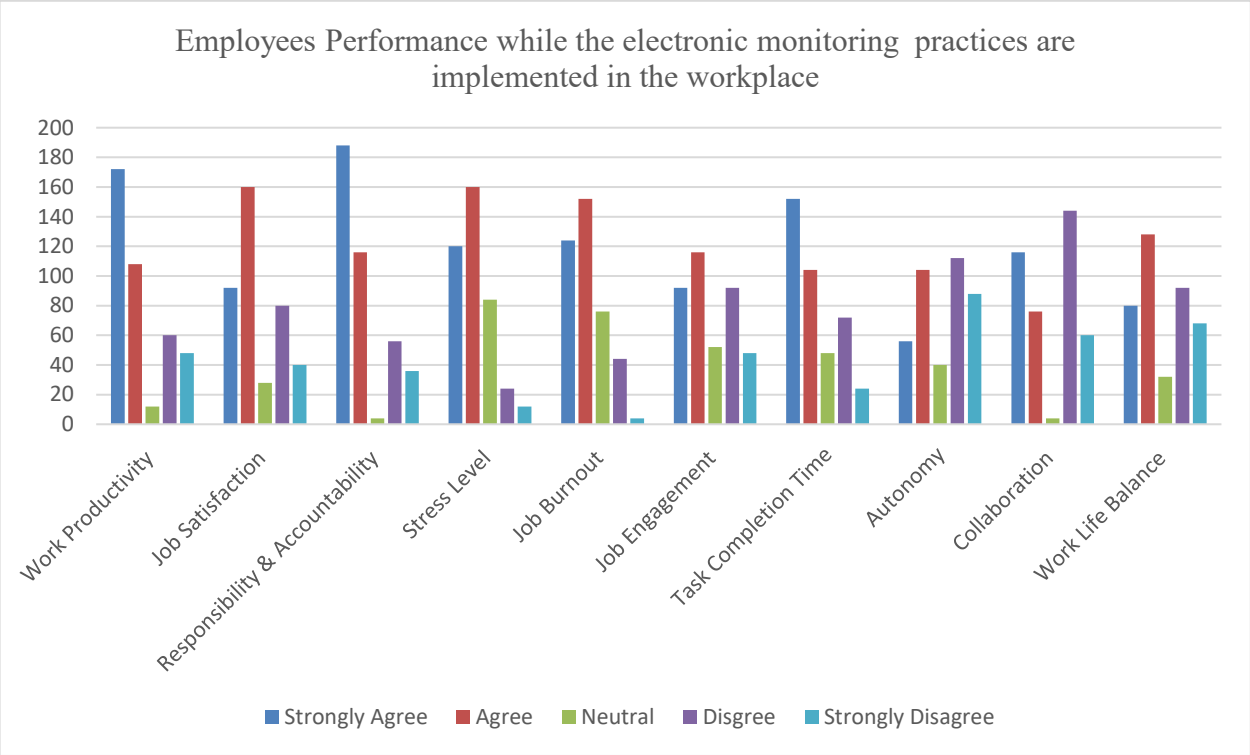
However, challenges were evident in areas like stress levels, job burnout, and collaboration, where significant portions of the workforce expressed neutral or negative views. While responsibility and accountability received a balanced response, indicating room for improvement, factors like job engagement and work-life balance showed mixed but predominantly positive feedback. Overall, the pre-monitoring environment reflected a workplace with strong autonomy and productivity but notable concerns around stress, burnout, and collaboration, suggesting key areas to address for enhanced employee well-being and performance.

Table 4.5.2 Employee Performance while Implementation of Electronic Monitoring Practices

Factors	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Work Productivity	172	108	12	60	48	**400**
Job Satisfaction	92	160	28	80	40	**400**
Responsibility & Accountability	188	116	4	56	36	**400**
Stress Level	120	160	84	24	12	**400**
Job Burnout	124	152	76	44	4	**400**
Job Engagement	92	116	52	92	48	**400**
Task Completion Time	152	104	48	72	24	**400**
Autonomy	56	104	40	112	88	**400**
Collaboration	116	76	4	144	60	**400**
Work-Life Balance	80	128	32	92	68	**400**
Total	**1192**	**1224**	**380**	**776**	**428**	**4000**

Source: Filled Questionnaire

Chart 4.5.2: Employee Performance while Implementation of Electronic Monitoring Practices



The above table and chart provide an overview of employee performance while implementing electronic monitoring practices in the workplace on a Likert scale.

1. Work Productivity: After the implementation of electronic monitoring practices, work productivity remained relatively strong, with 70% of employees (280 respondents) strongly agreeing or agreeing that they were productive. However, a notable 27% (108 respondents) expressed neutral or negative sentiments, indicating a decline compared to pre-monitoring levels. This suggests that monitoring may have introduced some challenges or disruptions affecting overall productivity.

2. Job Satisfaction: Job satisfaction after electronic monitoring practices were implemented shows a moderate decline, with 63% of employees (252 respondents) strongly agreeing or agreeing that they were satisfied. However, 30% (120 respondents) expressed disagreement or

strong disagreement. Compared to pre-monitoring levels, this highlights a noticeable drop in satisfaction, potentially indicating that monitoring has impacted employee morale negatively.

3. Responsibility & Accountability: Responsibility and accountability after the introduction of electronic monitoring practices received the highest positive feedback, with 76% (304 respondents) strongly agreeing or agreeing. Only 23% (92 respondents) expressed negative sentiments. This suggests that electronic monitoring improved the sense of accountability among employees, aligning well with its intended purpose.

4. Stress Levels: Stress levels after electronic monitoring practices were implemented show mixed feedback. While 70% (280 respondents) strongly agreed or agreed that they managed stress effectively, 24% (96 respondents) expressed neutral or negative responses. This indicates that monitoring added pressure for some employees, though it did not significantly increase stress levels for the majority.

5. Job Burnout: Job burnout, as evaluated after electronic monitoring practices were implemented, remains a concern, with 69% (276 respondents) strongly agreeing or agreeing that they felt engaged and not overly fatigued. However, 30% (124 respondents) reported neutral or negative sentiments, indicating a continued need for measures to manage workload and reduce burnout risks.

6. Job Engagement: Job engagement after the implementation of electronic monitoring practices reflects a mixed trend, with only 52% (208 respondents) strongly agreeing or agreeing. A significant 35% (140 respondents) expressed neutral or negative responses. This drop in engagement levels suggests that monitoring practices may have diminished some employees' intrinsic motivation.

7. Task Completion Time: Task completion time, after electronic monitoring practices were introduced, was rated positively by 64% (256 respondents), reflecting a generally effective work environment. However, 24% (96 respondents) expressed disagreement, suggesting that monitoring may have introduced inefficiencies or distractions for some employees.

8. Autonomy: Autonomy showed a notable decline after electronic monitoring practices were implemented, with only 40% (160 respondents) strongly agreeing or agreeing that they felt independent in their roles. A significant 50% (200 respondents) expressed disagreement or strong disagreement, highlighting that monitoring practices negatively affected employees' sense of independence.

9. Collaboration: Collaboration after the introduction of electronic monitoring practices was perceived poorly, with only 48% (192 respondents) strongly agreeing or agreeing that they experienced effective teamwork. Meanwhile, 51% (204 respondents) expressed negative views, suggesting that monitoring may have hindered team dynamics and communication.

10. Work-Life Balance: Work-life balance, as assessed after the implementation of electronic monitoring practices, received positive feedback from 52% (208 respondents). However, 40% (160 respondents) expressed neutral or negative sentiments, indicating that monitoring practices might have blurred boundaries between work and personal life for some employees, negatively impacting their balance.

Conclusion:

The implementation of electronic monitoring significantly improved employee accountability and responsibility, with 76% of employees responding positively. However, it had a negative impact on autonomy and collaboration, as over half of the employees reported feeling restricted in their work interactions. Job satisfaction and engagement also declined, with many employees experiencing reduced morale and motivation, suggesting feelings of mistrust or pressure. Stress-related factors such as burnout and work-life balance showed mixed responses, indicating challenges for a notable portion of the workforce. While task completion and productivity largely remained stable, there were minor declines compared to pre-monitoring levels. Overall, the findings suggest that although monitoring strengthens accountability, it can undermine employee well-being and collaboration. Organizations should therefore implement monitoring alongside supportive measures to maintain morale, engagement, and a healthy work environment.

4.6 Wilcoxon Signed Rank Test

4.6.1: Analysis showing performance ratings before and after monitoring

Null Hypothesis (H0): There is no significant difference in performance ratings before and after electronic monitoring practices are implemented.

Alternate Hypothesis (H1): There is a significant difference in performance ratings before and after electronic monitoring practices are implemented.

Table No 4.6.1.1: Wilcoxon Signed a Rank Test Analysis showing performance ratings before and after monitoring

Test Statistics	
	After Total – Before Total
Z	-12.302[b]
Asymp. Sig. (2-tailed)	.000
a. Wilcoxon Signed Ranks Test	
b. Based on positive ranks.	

Source: SPSS Output

Interpretation: The **Wilcoxon Signed Rank Test** indicates a statistically significant effect of electronic monitoring on employee performance ratings. Comparing ratings before and after implementation, the test yielded a Z value of -12.302 with a p-value below 0.001. This extremely low p-value leads to rejection of the null hypothesis, confirming that performance ratings changed significantly. The results suggest that electronic monitoring had a negative impact on employee performance.

Furthermore, the test revealed significant changes across all analyzed factors of employee experience and performance. For each factor, p-values were less than 0.001, resulting in rejection of the null hypothesis and acceptance of the alternative. This demonstrates that electronic monitoring affected multiple aspects of employee performance and experience in a statistically significant manner.

Table No. 4.6.1.2: Performance rating among various factors before and after monitoring practices are implemented

Variables	Z Value	Asymp. Sig. (2-tailed)
Work Productivity After – Work Productivity Before	-8.796	.000
Job Satisfaction After – Job Satisfaction Before	-11.068	.000
Responsibility After - Responsibility Before	-4.641	.000
Stress level After – Stress Level Before	-6.641	.000
Job Burnout After – Job Burnout Before	-4.690	.000
Job Engagement After – Job Engagement Before	-6.413	.000
Task Time After – Task Time Before	-5.222	.000
Autonomy After - Autonomy Before	-14.098	.000
Collaboration After - Collaboration Before	-7.251	.000
Work-Life Balance After – Work-Life Balance Before	-7.859	.000

Source: SPSS Output

1. Work Productivity (Z = -8.796):

The significant negative Z value suggests a decline in work productivity after the introduction of monitoring. This indicates that monitoring might have negatively impacted employees' efficiency or output potentially due to increased pressure or distraction caused by the monitoring process.

2. Job Satisfaction (Z = -11.068):

A substantial negative Z value reflects a significant decrease in job satisfaction, implying that employees feel less content or fulfilled in their roles. The introduction of monitoring could contribute to feelings of dissatisfaction, possibly by making employees feel more scrutinized or less trusted.

3. Responsibility (Z = -4.641):

The results show a significant change in perceived responsibility, with a negative impact suggested by the Z value. Employees may feel less responsible or empowered in their roles

after monitoring is introduced.

4. Stress Level (Z = -6.641):

There is a significant increase in stress levels among employees, as indicated by the positive ranks, leading to a negative Z value. The added pressure of being constantly observed may be a key factor driving this increase in stress.

5. Job Burnout (Z = -4.690):

The negative Z value highlights a significant rise in job burnout, implying that continuous monitoring may be leading to higher levels of exhaustion or overwhelm among employees. The persistent oversight could be eroding employees' resilience and motivation over time.

6. Job Engagement (Z = -6.413):

A significant decrease in job engagement is indicated by the negative value of Z, suggesting that employees are becoming less involved or enthusiastic about their work. The presence of monitoring might diminish employees' intrinsic motivation and commitment to their roles.

7. Task Time (Z = -5.222):

The analysis indicates a significant change in task time, with a negative impact suggested by the Z value. Monitoring might have influenced the time employees take to complete tasks, potentially increasing it due to added pressure or scrutiny.

8. Autonomy (Z = -14.098):

The most substantial negative Z value indicates a highly significant decrease in perceived autonomy. This suggests that employees feel considerably less control over their work and decision-making processes as a result of monitoring, which could undermine their sense of independence and job satisfaction.

9. Collaboration (Z = -7.251):

The significant negative Z value reflects a decline in collaboration among employees. Monitoring may have negatively impacted teamwork and communication, possibly by

creating a more competitive or mistrustful environment, where employees are less willing to share information or work closely with others.

10. Work-Life Balance (Z = -7.859):

The negative value indicates a significant adverse effect on work-life balance. Employees may be finding it more challenging to maintain a healthy balance between work and personal life, likely due to the additional stress and time demands imposed by monitoring.

Overall Implications:

The results indicate that electronic monitoring has negatively impacted various aspects of employee experience and performance. Significant declines in job satisfaction, engagement, autonomy, collaboration, and work-life balance, along with increases in stress and burnout, suggest that monitoring may be detrimental to the well-being and productivity of employees. These findings highlight the need for careful consideration and possible re-evaluation of electronic monitoring practices, as they may be leading to unintended negative consequences for both employees and the organization.

4.7 Mann-Whitney U Test Analysis

4.7.1: Analysis of Employee Gender and Performance Scores

Null Hypothesis (H0): There is no significant difference in performance scores between male and female employees.

Alternate Hypothesis (H1): There is a significant difference in performance scores between male and female employees.

Table No. 4.7.1:1: Analysis of Employee Gender and Performance Scores

Ranks				
	Gender	**N**	**Mean Rank**	**Sum of Ranks**
After Before Score	Male	228	203.34	46362.00
	Female	172	196.73	33838.00
	Total	400		

Source: SPSS Output

Table No. 4.7.1.2: Mann-Whitney U Test Analysis of Employee Performance Scores Based on Gender

Test Statistics	
	After Before Score
Mann-Whitney U Test	18960.000
Wilcoxon W Test	33838.000
Z	-.571
Asymp. Sig. (2-tailed)	.568
a. Grouping Variable: Gender	

Source: SPSS Output

Interpretation: The **Mann–Whitney U test** was used to assess whether changes in performance scores (before and after electronic monitoring) differed between male and female employees. The test produced a U value of 18,960.000 and a Z-score of -0.571, with a p-value of 0.568, which exceeds the conventional 0.05 threshold. This indicates that the difference in performance changes between males and females is not statistically significant.

Although males had a slightly higher mean rank (203.34) than females (196.73), suggesting a marginally larger change in performance, this difference is not significant. Overall, the results indicate that gender does not meaningfully influence how electronic monitoring affects employee performance in this sample.

4.7: Mann-Whitney U Test Analysis

4.7.2: Analysis of employee's marital Status and performance score

Null Hypothesis (H0): There is no significant difference in performance scores between married and unmarried employees.

Alternate Hypothesis (H1): There is a significant difference in performance scores between married and unmarried employees.

Table No. 4.7.2.1: Analysis of Employee Marital Status and Performance Scores

Ranks				
	Marital Status	**N**	**Mean Rank**	**Sum of Ranks**
After Before Score	Married	264	194.62	51380.00
	Unmarried	136	211.91	28820.00
	Total	400		

Source: SPSS Output

Table No. 4.7.2.2: Mann-Whitney U Test Analysis of Employee Performance Scores Based on their Marital Status

Test Statistics	
	After Before Score
Mann-Whitney U	16400.000
Wilcoxon W	51380.000
Z	-1.430
Asymp. Sig. (2-tailed)	.153
a. Grouping Variable: Marital Status	

Source: SPSS Output

Interpretation: A **Mann–Whitney U test** was conducted to compare changes in performance scores (after vs. before monitoring) between married and unmarried employees. The mean rank for married employees was 194.62, while unmarried employees had a slightly higher mean rank of 211.91.

The test produced a U value of 16,400.000, a Wilcoxon W of 51,380.000, and a Z-score of -1.430, with a p-value of 0.153. Since this exceeds the 0.05 significance level, the null hypothesis is not rejected. Although unmarried employees had a marginally higher mean rank, the difference is not statistically significant. Thus, marital status does not appear to influence how performance scores changed after the implementation of electronic monitoring.

4.7: Kruskal-Wallis H Test Analysis

4.7.3: Analysis of Employee's Age and Performance Score

Null Hypothesis (H0): There is no significant difference in the change in performance scores among the different age groups of employees

Alternate Hypothesis (H1): There is a significant difference in the change in performance scores among the different age groups of employees

Table No. 4.7.3.1: Analysis of Employee's Age and Performance Score

Ranks			
	Age	**N**	**Mean Rank**
After Before Score	Below 30 Year	120	200.73
	31 - 40 Years	148	198.70
	41 - 50 Years	75	209.06
	51 - 60 Years	57	193.41
	Total	400	

Source: SPSS Output

Table No. 4.7.3.2: Kruskal Wallis H Test Analysis of Employee Performance Scores Based on their Age

Test Statistics	
	After Before Score
Kruskal-Wallis H	.674
df	3
Asymp. Sig.	.879
a. Kruskal Wallis Test	
b. Grouping Variable: Age	

Source: SPSS Output

Interpretation: The **Kruskal–Wallis H test** was conducted to examine whether changes in performance scores (after vs. before monitoring) differed across age groups: Below 30 Years, 31–40 Years, 41–50 Years, and 51–60 Years. The mean ranks were: Below 30 Years (200.73), 31–40 Years (198.70), 41–50 Years (209.06), and 51–60 Years (193.41).

The test yielded an H value of 0.674 with 3 degrees of freedom and a p-value of 0.879. Since this p-value exceeds the 0.05 significance threshold, the null hypothesis is not rejected. This indicates that the impact of electronic monitoring on performance scores does not differ significantly among age groups, and the observed differences in mean ranks are likely due to random variation rather than age-related effects.

4.7: Kruskal-Wallis H Test Analysis

4.7.4: Analysis between employee's employment status and performance score

Null Hypothesis (H0): There is no significant difference in the change in performance scores among employees with different employment statuses

Alternate Hypothesis (H1): There is a significant difference in the change in performance scores among employees with different employment statuses

Table No. 4.7.4.1: Analysis of Employee's Employment Status and Performance Scores

Ranks			
	Employment	N	Mean Rank
After Before Score	Permanent Job	320	204.53
	Contractual Basis	52	174.35
	Probation Period	28	203.07
	Total	400	

Source: SPSS Output

Table No. 4.7.4.2: Kruskal Wallis H Test Analysis of Employee Performance Scores Based on their Employment Status

Test Statistics	
	After Before Score
Kruskal-Wallis H	3.119
df	2
Asymp. Sig.	.210
a. Kruskal Wallis Test	
b. Grouping Variable: Employment	

Source: SPSS Output

Interpretation: The **Kruskal–Wallis H test** was conducted to examine whether changes in performance scores differed by employment status: Permanent, Contractual, or Probation. The mean ranks were: Permanent (204.53), Contractual (174.35), and Probation (203.07).

The test yielded an H value of 3.119 with 2 degrees of freedom and a p-value of 0.210. Since the p-value exceeds the 0.05 significance threshold, the null hypothesis is not rejected. This indicates that performance changes do not differ significantly across employment statuses, suggesting that electronic monitoring affected employees similarly, regardless of whether they were on permanent, contractual, or probationary positions.

4.7 Kruskal-Wallis H Test Analysis

4.7.5: Analysis of Employee's Level of Experience and Performance Score

Null Hypothesis (H0): There is no significant difference in the change in performance scores among employees with different levels of experience

Alternate Hypothesis (H1): There is a significant difference in the change in performance scores among employees with different levels of experience

Table No. 4.7.5.1: Analysis of Employee's Level of Experience and Performance Score

Ranks			
	Experience	**N**	**Mean Rank**
After Before Score	Less than 1 Year	28	203.07
	1 year to 5 Year	198	200.12
	6-year to 10 Year	106	194.10
	More than 10 Year	68	208.97
	Total	400	

Source: SPSS Output

Table No. 4.7.5.2: Kruskal Wallis H Test Analysis of Employee Performance Scores Based on their Level of Experience

Test Statistics	
	After Before Score
Kruskal-Wallis H	.623
df	3
Asymp. Sig.	.891
a. Kruskal Wallis Test	
b. Grouping Variable: Experience	

Source: SPSS Output

Interpretation: The **Kruskal–Wallis H test** was conducted to assess whether changes in performance scores differed across experience levels: Less than 1 Year, 1–5 Years, 6–10 Years, and More than 10 Years. The mean ranks were: Less than 1 Year (203.07), 1–5 Years (200.12), 6–10 Years (194.10), and More than 10 Years (208.97).

The test produced an H value of 0.623 with 3 degrees of freedom and a p-value of 0.891. Since the p-value exceeds 0.05, the null hypothesis is not rejected. This indicates that performance changes do not differ significantly based on years of experience, suggesting that electronic monitoring affected employees similarly regardless of their tenure.

4.7 Kruskal-Wallis H Test Analysis

4.7.6: Analysis of Employee's Level of Education and Performance Score

Null Hypothesis (H0): There is no significant difference in the change in performance scores among employees with different levels of education

Alternate Hypothesis (H1): There is a significant difference in the change in performance scores among employees with different levels of education

Table No. 4.7.6.1: Analysis of Employee's Level of Education and Performance Score

Ranks			
	Education	**N**	**Mean Rank**
After Before Score	Graduate	80	208.10
	Postgraduate	288	199.31
	Diploma	32	192.25
	Total	400	

Source: SPSS Output

Table No. 4.7.6.2: Kruskal Wallis H Test Analysis of Employee Performance Scores Based on their Level of Education

Test Statistics	
	After Before Score
Kruskal-Wallis H	.549
df	2
Asymp. Sig.	.760
a. Kruskal Wallis Test	
b. Grouping Variable: Education	

Source: SPSS Output

Interpretation: The **Kruskal–Wallis H test** was conducted to examine whether changes in performance scores differed across education levels: Graduate, Postgraduate, and Diploma. The mean ranks were: Graduate (208.10), Postgraduate (199.31), and Diploma (192.25).

The test yielded an H value of 0.549 with 2 degrees of freedom and a p-value of 0.760. Since the p-value exceeds 0.05, the null hypothesis is not rejected. This indicates that performance changes do not differ significantly by education level, suggesting that electronic monitoring affected employees similarly regardless of their educational qualifications. Differences in mean ranks are likely due to random variation rather than education-related effects.

4.8 Chi-Square Test Analysis

4.8.1: Association of demographic variables (Gender Based) on Perception toward electronic monitoring

Null Hypothesis (H0): There is no association between the Gender of employees and their Perception of electronic monitoring

Alternate Hypothesis (H1): There is an association between the Gender of employees and their Perception of electronic monitoring

Table 4.8.1.1: Gender-based analysis of perceptions toward electronic monitoring

Hypothesis	Chi-Square	DF	Significance	Decision
Gender * Effectiveness	1.403	4	.844	Fail to Reject H_0 (Accepted)
Gender * Evidence Based	10.742	4	.030	Reject H_0
Gender * Comfort Zone	11.798	4	.019	Reject H_0
Gender * Confidentiality	2.079	4	.721	Fail to Reject H_0 (Accepted)
Gender * Privacy	10.673	4	.031	Reject H_0
Gender * Trust Issue	28.555	4	.000	Reject H_0
Gender * Communication	11.967	4	.018	Reject H_0
Gender * Equitable Policy	23.527	4	.000	Reject H_0
Gender * Job Security	6.776	4	.148	Fail to Reject H_0 (Accepted)
Gender* Unfair Evaluation	2.651	4	.618	Fail to Reject H_0 (Accepted)

Source: SPSS Output

Interpretation:

Gender * Effectiveness (Chi-Square = 1.403, Significance = 0.844):

The null hypothesis was accepted because the high p-value (0.844) indicates no significant association between gender and the perception of electronic monitoring's effectiveness. The low Chi-Square value suggests that any differences in perception are likely random.

Gender * Evidence Based (Chi-Square = 10.742, Significance = 0.030):

The null hypothesis was rejected because the p-value of 0.030 indicates a significant association between gender and the perception of electronic monitoring as evidence-based. The relatively high Chi-Square value suggests that the observed differences between genders are not due to chance. The data suggests that both genders view electronic monitoring as evidence-based, but females feel more strongly about this perception when compared to males which represents positive but less intense agreement.

Gender * Comfort Zone (Chi-Square = 11.798, Significance = 0.019):

The p-value of 0.019 led to the rejection of H_0, showing that gender significantly influences whether employees feel electronic monitoring impacts their comfort zone. The higher Chi-Square value indicates a notable difference between male and female perceptions. Males are more associated with a general comfort with electronic monitoring, while females who feel comfortable tend to feel more strongly about it.

Gender * Confidentiality (Chi-Square = 2.079, Significance = 0.721):

H_0 was accepted because the p-value of 0.721 shows no significant gender difference in perceptions of confidentiality under electronic monitoring. The low Chi-Square value further supports that the observed differences are not meaningful.

Gender * Privacy (Chi-Square = 10.673, Significance = 0.031):

With a p-value of 0.031, H_0 was rejected, indicating a significant gender difference in perceptions of privacy related to electronic monitoring. The Chi-Square value supports the conclusion that gender is associated with differing views on privacy. Females are more strongly associated with the perception that electronic monitoring invades their privacy. This is evident from the higher number of females in the "Agree" and "Strongly Agree" categories compared to males. While both genders express concerns about privacy invasion, females are more likely to view electronic monitoring as an invasion of their privacy.

Gender * Trust Issue (Chi-Square = 28.555, Significance = 0.000):

The very low p-value (0.000) and high Chi-Square value strongly reject H_0, indicating a significant and strong association between gender and the perception of trust issues related to electronic monitoring. This suggests a pronounced difference in how males and females perceive trust issues. females are more strongly associated with the perception that electronic monitoring creates trust issues. Although more males agree that monitoring causes trust issues, the stronger intensity of agreement (as seen in the "Strongly Agree" category) among females suggests that females are more likely to feel strongly that electronic monitoring undermines trust.

Gender * Communication (Chi-Square = 11.967, Significance = 0.018):

The null hypothesis was rejected because the p-value of 0.018 indicates a significant association between gender and perceptions of communication in the context of electronic monitoring. The Chi-Square value suggests a clear difference in how males and females view communication. males are more strongly associated with the perception that communication in this area is lacking. This is evident from the higher number of males in the "Disagree" and "Strongly Disagree" categories. However, there is also a considerable group of males who believe that communication is sufficient.

Gender * Equitable Policy (Chi-Square = 23.527, Significance = 0.000):

The p-value of 0.000 and the high Chi-Square value lead to rejecting H_0, indicating a significant gender difference in perceptions of whether electronic monitoring is part of an equitable policy. This result points to a strong association between gender and views on fairness in policy. The data reflects that both genders have concerns about the fairness and consistency of monitoring practices, but males are more likely to disagree with their fairness.

Gender * Job Security (Chi-Square = 6.776, Significance = 0.148):

The null hypothesis was accepted as the p-value of 0.148 suggests no significant association between gender and perceptions of job security under electronic monitoring. The moderate Chi-Square value indicates that gender does not strongly influence views on job security.

Gender * Unfair Evaluation (Chi-Square = 2.651, Significance = 0.618):

H_0 was accepted because the p-value of 0.618 indicates no significant association between gender and perceptions of unfair evaluation through electronic monitoring. The low Chi-Square value implies that any differences are not statistically significant.

4.8 Chi-Square Test Analysis

4.8.2: Association of demographic variables (Age Based) on Perception toward electronic monitoring

Null Hypothesis (H0): There is no association between the Age group of employees and their Perception of electronic monitoring

Alternate Hypothesis (H1): There is an association between the Age group of employees and their Perception of electronic monitoring

Table No. 4.8.2.1: Age-based analysis of perceptions toward electronic monitoring

Hypothesis	Chi-Square	DF	Significance	Decision
Age * Effectiveness	26.894	12	.008	Reject H_0
Age * Evidence Based	38.876	12	.000	Reject H_0
Age * Comfort Zone	30.003	12	.003	Reject H_0
Age * Confidentiality	37.633	12	.000	Reject H_0
Age * Privacy	20.652	12	.056	Fail to Reject H_0 (Accepted)
Age * Trust Issue	24.374	12	.018	Reject H_0
Age * Communication	24.428	12	.005	Reject H_0
Age * Equitable Policy	27.812	12	.006	Reject H_0
Age * Job Security	14.104	12	.294	Fail to Reject H_0 (Accepted)
Age * Unfair Evaluation	17.072	12	.147	Fail to Reject H_0 (Accepted)

Source: SPSS Output

Interpretation

Age * Effectiveness (Chi-Square = 26.894, Significance = 0.008):

The p-value of 0.008 is less than 0.05, indicating a significant association between age and the perception of the effectiveness of electronic monitoring. The Chi-Square value of 26.894 suggests that different age groups have distinct views on how effective they perceive monitoring practices to be. The age group of 31 - 40 years is the most polarized, with a significant number of respondents both disagreeing and strongly agreeing with the effectiveness of electronic monitoring. This indicates that while many in this group view monitoring as ineffective, a large portion also sees it as highly effective. This group is most strongly associated with both negative and positive perceptions of monitoring effectiveness.

Age * Evidence Based (Chi-Square = 38.876, Significance = 0.000):

The very low p-value of 0.000 strongly indicates a significant association between age and the perception that monitoring practices are evidence-based. The high Chi-Square value of 38.876 shows that age is a strong factor in how employees perceive the evidence-based nature of monitoring. the 31 - 40 Years group is most associated with strong, divided opinions on whether electronic monitoring is useful as evidence-based, while the Below 30 Years group leans more positively. The 41 - 50 Years and 51 - 60 Years groups show less intensity in their opinions, with more neutrality or moderate agreement.

Age * Comfort Zone (Chi-Square = 30.003, Significance = 0.003):

The p-value of 0.003 leads to the rejection of H_0, indicating a significant association between age and comfort levels with electronic monitoring. The Chi-Square value of 30.003 highlights that age differences significantly influence how comfortable employees feel about being monitored. the 31 - 40 Years group is most associated with discomfort, but also shows significant positive responses, indicating divided opinions. The Below 30 Years group is more positively associated with comfort, while older age groups, especially 41 - 50 Years and 51 - 60 Years, are more likely to feel uncomfortable with electronic monitoring.

Age * Confidentiality (Chi-Square = 37.633, Significance = 0.000):

The p-value of 0.000 rejects H_0, suggesting a significant association between age and perceptions of confidentiality in electronic monitoring. The high Chi-Square value of 37.633 indicates that views on confidentiality vary significantly across different age groups. The below 30 Years and 41 - 50 Years groups are most associated with the belief that monitoring practices effectively reduce breaches of confidentiality. The 31 - 40 Years group, however, is more divided, with both strong support and skepticism evident within the group. The 51 - 60 Years group tends to be more neutral on the issue.

Age * Privacy (Chi-Square = 20.652, Significance = 0.056):

The p-value of 0.056 is slightly above the 0.05 threshold, so H_0 is accepted. The Chi-Square value of 20.652 suggests that there is no significant association between age and perceptions of privacy in the context of monitoring practices. The differences between age groups are not statistically significant.

Age * Trust Issue (Chi-Square = 24.374, Significance = 0.018):

The p-value of 0.018 leads to the rejection of H_0, indicating a significant association between age and the perception of trust issues related to electronic monitoring. The Chi-Square value of 24.374 shows that different age groups have distinct perceptions of trust issues caused by monitoring. the 31 - 40 Years and Below 30 Years groups are most strongly associated with the perception that monitoring practices reduce trust between management and employees, with a significant majority in these groups expressing this belief. The 41 - 50 Years and 51 - 60 Years groups also generally share this view, although with slightly less intensity.

Age * Communication (Chi-Square = 24.428, Significance = 0.005):

The p-value of 0.005 indicates a significant association between age and perceptions of communication regarding monitoring practices. The Chi-Square value of 24.428 suggests that age influences how effectively employees feel they are communicated with about monitoring. the 31 - 40 Years group is most associated with negative perceptions of communication

effectiveness regarding monitoring practices, while the Below 30 Years group shows a more balanced view, with a notable portion expressing positive perceptions. The 41 - 50 Years and 51 - 60 Years groups generally lean towards dissatisfaction with communication efforts.

Age * Equitable Policy (Chi-Square = 27.812, Significance = 0.006):

The p-value of 0.006 leads to the rejection of H_0, indicating a significant association between age and perceptions of whether monitoring practices are applied equitably. The Chi-Square value of 27.812 suggests that age groups differ in their views on the fairness and consistency of monitoring practices. the 31 - 40 Years group is most associated with negative perceptions of the fairness and consistency of monitoring practices, while the Below 30 Years group shows a more balanced view, with a notable portion expressing positive perceptions. The 41 - 50 Years and 51 - 60 Years groups generally lean towards dissatisfaction with the fairness and consistency of monitoring efforts.

Age * Job Security (Chi-Square = 14.104, Significance = 0.294):

The p-value of 0.294 is well above 0.05, leading to the acceptance of H_0. The Chi-Square value of 14.104 indicates that there is no significant association between age and perceptions of job security under electronic monitoring. The observed differences among age groups are likely due to chance.

Age * Unfair Evaluation (Chi-Square = 17.072, Significance = 0.147):

The p-value of 0.147 is greater than 0.05, so H_0 is accepted. The Chi-Square value of 17.072 suggests that there is no significant association between age and perceptions of unfair evaluation through electronic monitoring. The differences in perception among different age groups are not statistically significant.

4.8 Chi-Square Test Analysis

4.8.3: Association of demographic variables (Marital Status) on Perception toward electronic monitoring

Null Hypothesis (H0): There is no association between the Marital Status of employees and their Perception of electronic monitoring

Alternate Hypothesis (H1): There is an association between the Marital Status of employees and their Perception of electronic monitoring

Table No. 4.8.3.1: Marital Status based analysis of perceptions toward electronic monitoring

Hypothesis	Chi-Square	DF	Significance	Decision
Marital Status * Effectiveness	7.165	4	.127	**Fail to Reject H_0** (Accepted)
Marital Status * Evidence Based	4.846	4	.303	**Fail to Reject H_0** (Accepted)
Marital Status * Comfort Zone	9.357	4	.053	**Fail to Reject H_0** (Accepted)
Marital Status * Confidentiality	10.259	4	.036	Reject H_0
Marital Status * Privacy	8.285	4	.082	**Fail to Reject H_0** (Accepted)
Marital Status * Trust Issue	27.576	4	.000	Reject H_0
Marital Status *Communication	6.140	4	.189	**Fail to Reject H_0** (Accepted)
Marital Status * Equitable Policy	28.041	4	.000	Reject H_0
Marital Status * Job Security	26.633	4	.000	Reject H_0
Marital Status * Unfair Evaluation	13.368	4	.010	Reject H_0

Source: SPSS Output

Interpretation

Marital Status * Effectiveness (Chi-Square = 7.165, Significance = 0.127):

The p-value of 0.127 is greater than 0.05, indicating that there is no statistically significant association between marital status and perceptions of the effectiveness of monitoring practices. Marital status does not appear to influence how effective employees perceive electronic monitoring to be.

Marital Status * Evidence Based (Chi-Square = 4.846, Significance = 0.303):

The p-value of 0.303 is greater than 0.05, suggesting that there is no significant relationship between marital status and whether employees perceive electronic monitoring as being evidence-based. Marital status does not significantly affect this perception.

Marital Status * Comfort Zone (Chi-Square = 9.357, Significance = 0.053):

With a p-value of 0.053, the result is slightly above the 0.05 threshold, so the null hypothesis is not rejected. This indicates that there is no significant association between marital status and comfort with electronic monitoring. Employees' comfort levels with monitoring are not significantly influenced by their marital status.

Marital Status * Confidentiality (Chi-Square = 10.259, Significance = 0.036):

The p-value of 0.036 is less than 0.05, indicating a significant association between marital status and perceptions of confidentiality in monitoring practices. Marital status does influence how employees perceive the impact of monitoring on confidentiality. married individuals are more associated with both strong positive and negative views on the effectiveness of monitoring in reducing breaches of confidentiality, with a majority leaning towards a positive perception. Unmarried individuals generally share this positive view but with slightly less intensity.

Marital Status * Privacy (Chi-Square = 8.285, Significance = 0.082):

The p-value of 0.082 is greater than 0.05, indicating that there is no significant association between marital status and perceptions of privacy in electronic monitoring. Marital status does not significantly affect how employees view the privacy aspects of monitoring.

Marital Status * Trust Issue (Chi-Square = 27.576, Significance = 0.000):

The low p-value (0.000) shows a strong link between marital status and trust perceptions in monitoring. Married employees are more likely to feel that monitoring reduces trust, while unmarried employees share this view but less strongly.

Marital Status * Communication (Chi-Square = 6.140, Significance = 0.189):

The p-value of 0.189 is greater than 0.05, indicating no significant association between marital status and perceptions of communication regarding monitoring practices. Marital status does not significantly impact how employees perceive the communication of monitoring practices.

Marital Status * Equitable Policy (Chi-Square = 28.041, Significance = 0.000):

A p-value of 0.000 shows a significant link between marital status and perceptions of monitoring fairness. Married employees are more likely to view monitoring as unfair and inconsistent, while unmarried employees also express some skepticism but maintain a more balanced perspective.

Marital Status * Job Security (Chi-Square = 26.633, Significance = 0.000):

The p-value of 0.000 indicates a significant association between marital status and perceptions of job security related to electronic monitoring. Marital status plays a role in how employees perceive the impact of monitoring on their job security. married respondents show greater concern about the impact of monitoring on job security compared to their unmarried counterparts.

Marital Status * Unfair Evaluation (Chi-Square = 13.368, Significance = 0.010):

The p-value of 0.010 indicates a significant association between marital status and perceptions of unfair evaluation in monitoring practices. Marital status influences how employees perceive the fairness of evaluations conducted under monitoring and married respondents are more likely to express worries about the fairness of evaluations based on electronic data compared to their unmarried peers.

4.8 Chi-Square Test Analysis

4.8.4: Association of demographic Variables (Education Level) on Perception toward electronic monitoring

Null Hypothesis (H0): There is no association between the education level of employees and their perception of electronic monitoring.

Alternate Hypothesis (H1): There is an association between the education level of employees and their perception of electronic monitoring.

Table No. 4.8.4.1: Education-based analysis of perceptions toward electronic monitoring

Hypothesis	Chi-Square	DF	Significance	Decision
Education * Effectiveness	17.968	8	.021	Reject H_0
Education * Evidence Based	21.566	8	.006	Reject H_0
Education * Comfort Zone	13.424	8	.098	Fail to Reject H_0
Education * Confidentiality	18.793	8	.016	Reject H_0
Education * Privacy	42.750	8	.000	Reject H_0
Education * Trust Issue	9.277	8	.319	Fail to Reject H_0
Education *Communication	31.710	8	.000	Reject H_0
Education * Equitable Policy	28.922	8	.000	Reject H_0
Education * Job Security	21.502	8	.006	Reject H_0
Education * Unfair Evaluation	30.570	8	.000	Reject H_0

Source: SPSS Output

Interpretation:

Education * Effectiveness (Chi-Square = 17.968, Significance = 0.021):

The p-value of 0.021 is less than 0.05, indicating a statistically significant association between education level and perceptions of the effectiveness of monitoring practices. This suggests that employees' educational backgrounds influence how effective they perceive electronic monitoring to be.

Education * Evidence Based (Chi-Square = 21.566, Significance = 0.006):

The p-value of 0.006 is less than 0.05, indicating a statistically significant association between education level and perceptions of whether monitoring practices are evidence-based. Employees with different education levels have varying views on the evidence basis of monitoring practices.

Education * Comfort Zone (Chi-Square = 13.424, Significance = 0.098):

The p-value of 0.098 is greater than 0.05, indicating that there is no statistically significant association between education level and perceptions of comfort with monitoring practices. Education level does not appear to significantly impact employees' comfort with electronic monitoring.

Education * Confidentiality (Chi-Square = 18.793, Significance = 0.016):

The p-value of 0.016 is less than 0.05, indicating a statistically significant association between education level and perceptions of confidentiality in monitoring practices. Employees' concerns about the impact of monitoring on confidentiality differ based on their education level.

Education * Privacy (Chi-Square = 42.750, Significance = 0.000):

The p-value of 0.000 is much less than 0.05, indicating a strong and statistically significant association between education level and perceptions of privacy in monitoring practices. Employees with different educational backgrounds have significantly different views on the privacy implications of electronic monitoring.

Education * Trust Issue (Chi-Square = 9.277, Significance = 0.319):

The p-value of 0.319 is greater than 0.05, indicating that there is no statistically significant association between education level and perceptions of trust issues related to monitoring practices. Education level does not significantly influence employees' views on trust in the context of electronic monitoring.

Education * Communication (Chi-Square = 31.710, Significance = 0.000):

The p-value of 0.000 is much less than 0.05, indicating a strong and statistically significant association between education level and perceptions of communication regarding monitoring practices. Employees' educational backgrounds significantly influence how they perceive the communication of monitoring practices.

Education * Equitable Policy (Chi-Square = 28.922, Significance = 0.000):

The p-value of 0.000 is much less than 0.05, indicating a strong and statistically significant association between education level and perceptions of the equitable application of monitoring practices. Employees with different education levels perceive the fairness and consistency of monitoring differently.

Education * Job Security (Chi-Square = 21.502, Significance = 0.006):

The p-value of 0.006 is less than 0.05, indicating a statistically significant association between education level and perceptions of job security related to monitoring practices. Employees' concerns about the impact of monitoring on job security vary based on their education level.

Education * Unfair Evaluation (Chi-Square = 30.570, Significance = 0.000):

The p-value of 0.000 is much less than 0.05, indicating a strong and statistically significant association between education level and perceptions of unfair evaluation in monitoring practices. Employees with different educational backgrounds have significantly different views on the fairness of evaluations conducted under monitoring.

4.8 Chi-Square Test Analysis

4.8.5: Association of demographic variables (Experience Based) on Perception toward electronic monitoring

Null Hypothesis (H0): There is no association between employee's experience & their perception of electronic monitoring.

Alternate Hypothesis (H1): There is an association between employee's experience & their perception of electronic monitoring.

Table No. 4.8.5.1: Experience-based analysis of perceptions toward electronic monitoring

Hypothesis	Chi-Square	DF	Significance	Decision
Experience * Effectiveness	48.262	12	.000	Reject H_0
Experience * Evidence Based	14.949	12	.244	Fail to Reject H_0
Experience * Comfort Zone	32.139	12	.001	Reject H_0
Experience * Confidentiality	41.945	12	.000	Reject H_0
Experience * Privacy	49.836	12	.000	Reject H_0
Experience * Trust Issue	28.683	12	.004	Reject H_0
Experience *Communication	37.467	12	.000	Reject H_0
Experience * Equitable Policy	97.161	12	.000	Reject H_0
Experience * Job Security	60.786	12	.000	Reject H_0
Experience * Unfair Evaluation	26.572	12	.009	Reject H_0

Source: SPSS Output

Interpretation:

1. Experience * Effectiveness (Chi-Square = 48.262, Significance = 0.000):

The p-value of 0.000 is less than 0.05, indicating a statistically significant association between experience level and perceptions of the effectiveness of monitoring practices. This suggests that employees' views on how effective monitoring practices are vary significantly based on their level of experience.

2. Experience * Evidence Based (Chi-Square = 14.949, Significance = 0.244):

The p-value of 0.244 is greater than 0.05, indicating that there is no statistically significant association between experience level and perceptions of whether monitoring practices are evidence-based. Experience level does not appear to influence how employees perceive the evidence basis of electronic monitoring.

3. Experience * Comfort Zone (Chi-Square = 32.139, Significance = 0.001):

The p-value of 0.001 is less than 0.05, indicating a statistically significant association between experience level and perceptions of comfort with monitoring practices. This suggests that employees' comfort with electronic monitoring varies significantly based on their level of experience.

4. Experience * Confidentiality (Chi-Square = 41.945, Significance = 0.000):

The p-value of 0.000 is less than 0.05, indicating a statistically significant association between experience level & perceptions of confidentiality in monitoring practices. Employees' concerns about the impact of monitoring on confidentiality differ significantly as per their level of experience.

5. Experience * Privacy (Chi-Square = 49.836, Significance = 0.000):

The p-value of 0.000 is less than 0.05, indicating a statistically significant association between experience level and perceptions of privacy in monitoring practices. This suggests that employees' views on privacy related to monitoring are significantly influenced by their level of experience.

6. Experience * Trust Issue (Chi-Square = 28.683, Significance = 0.004):

The p-value of 0.004 is less than 0.05, indicating a statistically significant association between experience level and perceptions of trust issues related to monitoring practices. This suggests that employees' trust in management, as influenced by monitoring practices, varies significantly.

7. Experience * Communication (Chi-Square = 37.467, Significance = 0.000):

The p-value of 0.000 is less than 0.05, indicating a statistically significant association between experience level and perceptions of communication regarding monitoring practices. Employees with different levels of experience have significantly different perceptions of how well monitoring practices are communicated.

8. Experience * Equitable Policy (Chi-Square = 97.161, Significance = 0.000):

The p-value of 0.000 is less than 0.05, indicating a statistically significant association between experience level and perceptions of the equitable application of monitoring practices. This suggests that employees' views on the fairness and consistency of monitoring practices are significantly influenced by their level of experience.

9. Experience * Job Security (Chi-Square = 60.786, Significance = 0.000):

The p-value of 0.000 is less than 0.05, indicating a statistically significant association between experience level and perceptions of job security related to monitoring practices. Employees' concerns about job security, as affected by monitoring, vary significantly based on their level of experience.

10. Experience * Unfair Evaluation (Chi-Square = 26.572, Significance = 0.009):

The p-value of 0.009 is less than 0.05, indicating a statistically significant association between experience level and perceptions of unfair evaluation in monitoring practices. This suggests that employees' views on the fairness of evaluations conducted under monitoring differ significantly based on their level of experience.

4.8 Chi-Square Test Analysis

4.8.6: Association of demographic variables (Employment Level Based) on Perception toward electronic monitoring

Null Hypothesis (H0): There is no association between the employment level of employees and their perception of electronic monitoring.

Alternate Hypothesis (H1): There is an association between the employment level of employees and their perception of electronic monitoring.

Table No. 4.8.6.1: Employment Level based analysis of perceptions toward electronic monitoring

Hypothesis	Chi-Square	DF	Significance	Decision
Employment Level * Effectiveness	34.709	8	.000	Reject H_0
Employment Level * Evidence Based	20.571	8	.008	Reject H_0
Employment Level * Comfort Zone	12.397	8	.134	Fail to Reject H_0
Employment Level * Confidentiality	32.981	8	.000	Reject H_0
Employment Level * Privacy	46.265	8	.000	Reject H_0
Employment Level * Trust Issue	9.234	8	.323	Fail to Reject H_0
Employment Level *Communication	23.103	8	.003	Reject H_0
Employment Level * Equitable Policy	38.422	8	.000	Reject H_0
Employment Level * Job Security	44.722	8	.000	Reject H_0
Employment Level * Unfair Evaluation	12.782	8	.120	Fail to Reject H_0

Source: SPSS Output

Interpretation:

Employment Level * Effectiveness (Chi-Square = 34.709, Significance = 0.000):

The p-value of 0.000 is less than 0.05, indicating a statistically significant association between employment level and perceptions of the effectiveness of monitoring practices. This suggests that employees' views on effective monitoring practices vary significantly based on their employment level.

Employment Level * Evidence Based (Chi-Square = 20.571, Significance = 0.008):

The p-value of 0.008 is less than 0.05, indicating a statistically significant association between employment level and perceptions of whether monitoring practices are evidence-based. Employees at different employment levels have varying views on the evidence basis of monitoring practices.

Employment Level * Comfort Zone (Chi-Square = 12.397, Significance = 0.134):

The p-value of 0.134 is greater than 0.05, indicating that there is no statistically significant association between employment level and perceptions of comfort with monitoring practices. Employment level does not appear to significantly impact employees' comfort with electronic monitoring.

Employment Level * Confidentiality (Chi-Square = 32.981, Significance = 0.000):

The p-value of 0.000 is less than 0.05, indicating a statistically significant association between employment level & perceptions of confidentiality in monitoring practices. Employees' concerns about the impact of monitoring on confidentiality differ significantly based on their employment level

Employment Level * Privacy (Chi-Square = 46.265, Significance = 0.000):

The p-value of 0.000 is less than 0.05, indicating a statistically significant association between employment level and perceptions of privacy in monitoring practices. This suggests that employees' views on privacy related to monitoring are significantly influenced by their employment level.

Employment Level * Trust Issue (Chi-Square = 9.234, Significance = 0.323):
The p-value of 0.323 is greater than 0.05, indicating that there is no statistically significant association between employment level and perceptions of trust issues related to monitoring practices. Employment level does not significantly influence employees' views on trust in the context of electronic monitoring.

Employment Level * Communication (Chi-Square = 23.103, Significance = 0.003):
The p-value of 0.003 is less than 0.05, indicating a statistically significant association between employment level and perceptions of communication regarding monitoring practices. Employees with different employment levels have significantly different perceptions of how well monitoring practices are communicated.

Employment Level * Equitable Policy (Chi-Square = 38.422, Significance = 0.000):
The p-value of 0.000 is less than 0.05, indicating a statistically significant association between employment level and perceptions of the equitable application of monitoring practices. This suggests that employees' views on the fairness and consistency of monitoring practices are significantly influenced by their employment level.

Employment Level * Job Security (Chi-Square = 44.722, Significance = 0.000):
The p-value of 0.000 is less than 0.05, indicating a statistically significant association between employment level and perceptions of job security related to monitoring practices. Employees' concerns about job security, as affected by monitoring, vary significantly based on their employment level.

Employment Level * Unfair Evaluation (Chi-Square = 12.782, Significance = 0.120):
The p-value of 0.120 is greater than 0.05, indicating that there is no statistically significant association between employment level and perceptions of unfair evaluation in monitoring practices. Employment level does not appear to significantly influence employees' views on the fairness of evaluations conducted under monitoring.

4.9 Chi-Square Test Analysis

4.9.1: Analysis of monitoring techniques preferred by employees and implemented by the organization.

Null Hypothesis (H0): There is no significant association between the preferred monitoring method by employees and the monitoring method implemented by the company.

Alternate Hypothesis (H1): There is a significant association between the preferred monitoring method by employees and the monitoring method implemented by the company.

Table No. 4.9.1.1: Cross tabulation values of monitoring methods preferred by employees and implemented by the organization

Count							
		Monitoring By Company					Total
		Biometric Security System	E-Mail Tracking	ERP System	Installing Monitoring Software	Tapping Your Phone	
Preferred Method	Biometric Security System	28	8	8	28	24	96
	E-Mail Tracking	12	8	12	24	0	56
	ERP System	4	4	60	52	0	120
	Installing Monitoring Software	4	8	4	16	16	48
	Tapping Your Phone	4	12	0	24	40	80
Total		52	40	84	144	80	400

Source: SPSS Output

Table No. 4.9.1.2: Chi Square Analysis of monitoring methods preferred and implemented.

Chi-Square Tests			
	Value	**df**	**Asymptotic Significance (2-sided)**
Pearson Chi-Square	203.685[a]	16	.000
Likelihood Ratio	234.475	16	.000
Linear-by-Linear Association	30.634	1	.000
N of Valid Cases	400		

Source: SPSS Output

Interpretation:

The Chi-Square test was conducted to determine whether there is a significant association between the monitoring methods preferred by employees and the methods implemented by the company. The Pearson Chi-Square value is 203.685 with 16 degrees of freedom, and the associated p-value is 0.000. Since the p-value is less than the conventional significance level of 0.05, we reject the null hypothesis. This result indicates that there is a statistically significant association between the monitoring methods preferred by employees and those implemented by the company.

The cross-tabulation provides a detailed breakdown of how employee preferences align with the methods the company uses and where there may be gaps, indicating potential areas for organizational improvement or adjustment in monitoring strategies.

A total of 96 employees preferred the Biometric Security System as their preferred method of monitoring. Among these, 28 employees work in companies that implement Biometric Security Systems, aligning with their preferences. However, 8 of these employees are in organizations that instead use E-Mail Tracking, and another 8 are in companies that use an

ERP System. Interestingly, 28 employees who prefer the Biometric Security System are in organizations that have opted for Installing Monitoring Software instead, while 24 find themselves in companies that implement Phone Tapping. This indicates that while there is some alignment, a significant portion of these employees work in environments where their preferred method is not used.

The ERP System is preferred by 120 employees. Of these, 60 work in companies that implement ERP Systems, aligning with their preference. However, there is a mismatch for the remaining employees: 4 are in companies using Biometric Security Systems, 4 in companies using E-Mail Tracking, and 52 in organizations that have implemented Monitoring Software. None work in companies using Phone Tapping. While there is significant alignment for some, many employees still experience a mismatch between preference and implementation.

A total of 48 employees prefer Installing Monitoring Software. Of these, 16 work in companies that implement this method, aligning with their preference. However, some employees face discrepancies: 4 are in companies using Biometric Security Systems, 8 in companies using E-Mail Tracking, 4 in environments with ERP Systems, and 16 in companies that implement Phone Tapping. This group shows moderate alignment but still experiences notable discrepancies.

For E-Mail Tracking, 56 employees preferred this method, but only 8 worked in companies implementing it, indicating a significant mismatch. A notable number of these employees are in organizations that use other methods like Installing Monitoring Software or ERP Systems, with none finding their preference matched by Phone Tapping.

For Tapping Your Phone, 80 employees expressed a preference, with 40 of them working in companies that align with this choice, showing a strong alignment. However, the remaining employees experience a mismatch, with many working in organizations that implement other methods like Installing Monitoring Software, highlighting a partial but notable discrepancy between preferences and implementation.

Overall, the significant Chi-Square result, combined with the details of the crosstab, suggests a clear relationship between what employees prefer and what companies implement, but also

points to potential mismatches where employee preferences are not aligned with company practices. This insight can help organizations consider aligning their monitoring practices more closely with employee preferences to potentially improve satisfaction and compliance.

4.10 Friedman Test Analysis

4.10.1: Analysis of employees' ranking towards the reasons for implementing monitoring practices by their organization

Null Hypothesis (H0): There is no significant difference in the reasons employees believe in implementing monitoring practices.

Alternate Hypothesis (H1): There is a significant difference in the reasons employees believe in implementing monitoring practices.

Table No. 4.10.1.1: Friedman Test Analysis of reasons employees believe in implementing monitoring practices in the organization.

Friedman Test Statistics	
N	400
Chi-Square	1111.239
df	5
Asymp. Sig.	.000

Source: SPSS Output

Table No. 4.10.1.2: Mean ranking of reasons employees believes in implementing monitoring practices in the organization.

Ranks		
Category	**Reason**	**Mean Rank**
Reason1	To measure your performance & productivity	4.66
Reason2	To monitor the content shared/communicated	3.84
Reason3	To review internet usage	3.04
Reason4	To have physical accessibility	1.21
Reason5	To measure working time/idle time duration	4.21
Reason6	To check the accuracy of the work	4.06

Source: SPSS Output

Interpretation:

The Friedman Test results reveal significant differences in how employees rate the six reasons for implementing monitoring practices. Reason 1(To measure your performance & productivity) has the highest mean rank of 4.66, making it the most preferred reason, while Reason 4 (To have physical accessibility) has the lowest mean rank of 1.21, indicating it is the least favored reason. The Chi-Square value of 1111.239 with a p-value of 0.000 suggests these differences are statistically significant, meaning the observed variations in rankings are not due to chance. Therefore, we reject the null hypothesis, concluding that employees do not rate all reasons equally. Some reasons are more compelling or important to employees when considering monitoring practices, with the reason of measuring performance & productivity standing out as the top factor and the reason having physical accessibility being the least important.

4.11 CANONICAL CORRELATION TEST

4.11.1: Analysis of the relationship between employees' perceptions towards electronic monitoring practices and their performance.

Null Hypothesis (H_0): There is no relationship between the sets of perception factors and performance factors among IT sector employees.
Alternative Hypothesis (H_1): There is a significant relationship between the sets of perception
factors and performance factors among IT sector employees.

Table No. 4.11.1.1: Relationship between Perception factors and Performance factors towards electronic monitoring

Sr.No.	Correlation	Eigen value	F	Sig.	Decision	Type of Relationship
1	.932	6.638	31.238	.000	Rejected Ho	Strong
2	.819	2.037	21.320	.000	Rejected Ho	Strong
3	.741	1.215	17.041	.000	Rejected Ho	Progressive
4	.671	.821	13.869	.000	Rejected Ho	Progressive
5	.590	.533	10.928	.000	Rejected Ho	Progressive
6	.472	.287	8.116	.000	Rejected Ho	Weak
7	.372	.160	6.027	.000	Rejected Ho	Weak
8	.267	.077	4.003	.000	Rejected Ho	Weak
9	.129	.017	1.691	.150	Accepted Ho	Weak
10	.022	.000	.183	.669	Accepted Ho	Weak

Source: SPSS Output

Table No. 4.11.1.2: Set 1 – Canonical Loadings of Perception Factors

Variable	CV1	CV2	CV3	CV4	CV5	CV6	CV7	CV8	CV9	CV10
Effectiveness	0.767	0.396	0.276	0.062	0.130	0.052	0.289	0.035	0.161	0.209
Evidence Based	0.716	0.013	0.426	0.075	0.057	0.223	0.111	0.164	0.376	0.257
Comfort Zone	0.759	0.049	0.407	0.119	0.178	0.187	0.132	0.221	0.199	0.263
Confidentiality	0.817	0.326	0.147	0.071	0.212	0.181	0.089	0.238	0.207	0.121
Privacy	0.264	0.145	0.352	0.465	0.172	0.007	0.052	0.114	0.474	0.044
Trust Issue	0.478	0.347	0.301	0.201	0.431	0.027	0.365	0.043	0.188	0.258
Communication	0.708	0.104	0.103	0.180	0.219	0.470	0.376	0.028	0.153	0.105
Equitable Policy	0.607	0.078	0.489	0.293	0.308	0.074	0.048	0.378	0.063	0.224
Job Security	0.506	0.134	0.330	0.474	0.202	0.307	0.011	0.470	0.107	0.158
Unfair Evaluation	0.575	0.672	0.005	0.090	0.159	0.128	0.139	0.063	0.092	0.369

Source: SPSS Output

Table No. 4.11.1.3: Set 2 – Canonical Loadings of Performance Factors

Variable	CV1	CV2	CV3	CV4	CV5	CV6	CV7	CV8	CV9	CV10
Work Productivity	0.764	0.273	0.384	0.097	0.182	0.183	0.170	0.162	0.203	0.151
Job Satisfaction	0.886	0.103	0.251	0.238	0.220	0.125	0.008	0.020	0.068	0.123
Responsibility	0.786	0.216	0.025	0.048	0.404	0.151	0.072	0.092	0.092	0.182
Stress Level	0.599	0.203	0.443	0.260	0.366	0.213	0.153	0.343	0.011	0.123
Job Burnout	0.420	0.111	0.202	0.411	0.039	0.010	0.344	0.026	0.292	0.187
Job Engagement	0.292	0.393	0.172	0.209	0.366	0.244	0.246	0.372	0.159	0.181
Task Time	0.731	0.396	0.355	0.082	0.132	0.009	0.088	0.079	0.174	0.337
Autonomy	0.601	0.304	0.075	0.119	0.086	0.030	0.127	0.069	0.213	0.273
Collaboration	0.636	0.328	0.144	0.175	0.392	0.171	0.005	0.497	0.003	0.084
Work-Life Balance	0.574	0.737	0.143	0.232	0.071	0.069	0.071	0.193	0.004	0.028

Source: SPSS Output

Interpretation:

1. Row 1: Strong Relationship The first set of perception factors—confidentiality, effectiveness, comfort zone, and communication show a very strong correlation (r = .932) with performance factors such as job satisfaction, work productivity, responsibility, stress level, autonomy, task time, collaboration, and work-life balance. With an eigenvalue of 6.638 and a highly significant p-value (Sig. = .000), the decision is to reject the null hypothesis. This means there is a strong, significant relationship between these variables. As perception around confidentiality and communication improves, there is a substantial positive impact on performance outcomes like job satisfaction and productivity, highlighting the critical role these factors play in employee performance under electronic monitoring.

2. Row 2: Strong Relationship Unfair evaluation, a key perception factor, has a strong correlation (r = .819) with work-life balance. The F-statistic is 21.320, and the significance value of .000 leads to rejecting the null hypothesis, indicating a strong, significant relationship. Employees who perceive unfair evaluations tend to struggle with maintaining work-life balance, suggesting that fairness in evaluations can directly impact employees' ability to manage both their professional and personal lives effectively.

3. Row 3: Progressive Relationship There is a progressively strong relationship (r = .741) between perception factors like evidence-based equitable policy and stress levels. The eigenvalue is 1.215, and with a significance value of .000, the null hypothesis is rejected. This result suggests that the implementation of fair and evidence-based policies can progressively reduce employee stress. As the perception of equitable policies improves, stress levels decrease, reflecting the importance of policy fairness in managing workplace stress.

4. Row 4: Progressive Relationship Privacy and job security, as perception factors, show a moderate but progressive relationship (r = .671) with job burnout. The F-statistics of 13.869 and the significance value of .000 lead to rejecting the null hypothesis, confirming a significant relationship. As concerns about privacy and job security increase, the likelihood of employee burnout also rises. This demonstrates that ensuring employees feel secure and their privacy is respected can progressively help in reducing job burnout.

5. Row 5: Progressive Relationship Trust issues, a perception factor, are progressively related to responsibility (r = .590). The eigenvalue of .533 and the significant p-value of .000 lead to rejecting the null hypothesis. This suggests that lower trust among employees can erode their sense of responsibility, impacting their engagement and performance. As trust diminishes, employees may feel less accountable for their tasks, pointing to the importance of fostering a trustworthy environment to ensure higher responsibility and engagement.

6. Rows 6 to 8: Weak Relationships In rows 6 to 8, the relationships between the remaining perception factors and performance factors are weak but still statistically significant, with correlations ranging from .472 to .267. The null hypothesis is rejected in each case (Sig. = .000), indicating weak but meaningful relationships. While these factors contribute to performance outcomes, their influence is limited compared to the stronger correlations observed earlier.

7. Rows 9 to 10: No Significant Influence In the last two rows, the correlations (.129 and .022) are very weak and not statistically significant (Sig. = .150 and .669, respectively). Consequently, the null hypothesis is accepted, meaning that these particular perception factors have no significant influence on performance outcomes related to electronic monitoring.

CHAPTER 5

FINDINGS & SUGGESTIONS

5.1 – BACKGROUND

The key findings on the impact of electronic monitoring on employees' performance in the IT sector are presented in this chapter. The research includes information on the demographic characteristics of IT employees, their perceptions of electronic monitoring practices, the factors influencing their productivity and job satisfaction, the relationship between perception factors and performance factors of employees due to electronic monitoring, and the link between monitoring practices and turnover intentions. Additionally, the chapter explores how demographic factors moderate the effects of electronic monitoring on performance outcomes. Following the findings is the conclusion.

5.2 - MAJOR FINDINGS

5.2.1: DEMOGRAPHIC INFORMATION OF IT EMPLOYEES

- Male employees represent the majority (57%), while female employees account for 43%.
- The age group of 31-40 years has the highest representation (37%), whereas there is no representation for employees above 60 years (0%).
- Married employees form the largest group (66%), while unmarried employees make up 34%.
- Most employees are postgraduates (72%), while no employees fall into the non-graduate or professional degree categories (0%).
- Employees from nuclear families constitute the majority (65%), whereas joint family members represent 35%.
- Among IT employees, 80% are permanent employees, which is the largest group, while only 7% are in the probation period, representing the smallest group.
- Most of the employees work in the software products and engineering services sector (61%), whereas none are employed in the hardware sector (0%).
- The highest proportion of job roles is held by database administrators (18.5%) and software developers/designers (20.5%), while network administrators have no representation (0%).

- Employees with 1 to 5 years of experience constitute the largest group (49.5%), whereas those with less than 1 year of experience represent the smallest group (7%).
- A significant percentage of employees earn more than 3 lakhs annually (33%), while only 9.25% earn less than 50,000 annually, representing the smallest income group.

5.2.2: PERCEPTION OF IT EMPLOYEES TOWARDS ELECTRONIC MONITORING

- Among preferred monitoring methods apart from CCTV, the ERP system is the most preferred (120 responses), while GPS tracking has no preference (0 responses).
- Biometric security systems (96 responses) and phone tapping (80 responses) also have significant preferences, while email tracking is less preferred (56 responses).
- For monitoring methods implemented by organizations, installing monitoring software is the most used method (144 responses), while GPS tracking is not used at all (0 responses).
- The ERP system (84 responses) and phone tapping (80 responses) are also common, whereas email tracking is implemented less frequently (40 responses).
- A majority of respondents (283) believe that monitoring is required for the job, while 117 respondents do not think it is necessary.
- Most employees (272) reported being monitored through CCTV cameras, while 128 respondents indicated they are not monitored through CCTV.
- Measuring performance and productivity is the most strongly supported reason for monitoring, with 284 strongly agreeing and 116 agreeing, followed by monitoring content shared/communicated (172 strongly agree, 200 agree). Reviewing internet usage and checking work accuracy also received high support, while physical accessibility was the least supported reason, with 180 disagreeing and 172 strongly disagreeing. Overall, the results emphasize the importance of monitoring productivity and accuracy while minimizing its use for less critical purposes like physical accessibility.
- Monitoring practices for work effectiveness received 59% positive feedback, while 33% expressed negative opinions.
- Evidence-based outcomes of monitoring were viewed positively by 61% of respondents, with 28% expressing negative perceptions.

- Comfort in the workplace due to monitoring practices was supported by 50% of respondents, while 33% expressed dissatisfaction.
- Monitoring practices reducing confidentiality breaches had 66% positive feedback, while 22% had negative views.
- Privacy concerns due to monitoring were positively acknowledged by 72% of respondents, while 25% expressed negative opinions.
- Trust issues between management and employees were viewed positively by 82%, with only 16% negative feedback.
- Communication and transparency regarding monitoring practices received 40% positive feedback, while 58% reported negative views.
- Fairness and equitable policy in monitoring were supported by 43% of respondents, while 55% disagreed negatively.
- Concerns about job security related to monitoring had 70% positive feedback, while 19% expressed dissatisfaction.
- Fear of unfair evaluation from electronically collected data was viewed positively by 74% of respondents, while 18% had negative views.

5.2.3: PERFORMANCE OF IT EMPLOYEES BEFORE AND AFTER ELECTRONIC MONITORING.

- Before monitoring, employee performance in work productivity was rated positively by 94%, while only 5% rated it negatively.
- Before monitoring, job satisfaction in employee performance was positively rated by 94%, with just 4% rating it negatively.
- Before monitoring, responsibility and accountability in employee performance were rated positively by 62%, while 37% rated it negatively.
- Before monitoring, stress levels in employee performance showed mixed results, with 53% positive ratings and 28% negative ratings.
- Before monitoring, job burnout in employee performance was rated positively by 46%, while 25% rated it negatively, and 29% were neutral.

- Before monitoring, job engagement in employee performance was positively rated by 67%, with only 5% negative ratings.
- Before monitoring, task completion time in employee performance received 78% positive ratings, with just 5% negative ratings.
- Before monitoring, autonomy in employee performance was highly rated, with 94% positive ratings and only 4% negative ratings.
- Before monitoring, collaboration in employee performance was rated positively by 69%, while 21% gave negative ratings.
- Before monitoring, work-life balance in employee performance received 73% positive ratings, while 23% rated it negatively.
- After monitoring, employee performance in work productivity was rated positively by 70%, with 27% expressing negative feedback.
- After monitoring, job satisfaction in employee performance received 63% positive ratings, while 30% rated it negatively.
- After monitoring, responsibility and accountability in employee performance were rated positively by 76%, with 23% negative feedback.
- After monitoring, stress levels in employee performance had 70% positive feedback, with only 9% negative ratings and 21% neutral responses.
- After monitoring, job burnout in employee performance was rated positively by 69%, while 12% rated it negatively, and 19% were neutral.
- After monitoring, job engagement had 52% positive ratings, with 35% negative responses.
- After monitoring, task completion time was rated positively by 64%, with 24% expressing dissatisfaction.
- After monitoring, autonomy was rated positively by 40%, while 50% had negative views.
- After monitoring, collaboration received 48% positive feedback, with 51% expressing dissatisfaction.
- After monitoring, work-life balance was rated positively by 52%, with 40% negative feedback.

5.2.4: IMPACT OF ELECTRONIC MONITORING ON EMPLOYEES PERFORMANCE

Objective 1 - To evaluate the impact of electronic monitoring practices on the performance of employees.

5.2.4.1: Analysis showing performance ratings before and after monitoring

The Wilcoxon Signed Rank Test results that the alternative hypothesis is accepted indicating that there is indeed a significant difference between the two sets of ratings i.e. – performance before monitoring and performance after monitoring. The significant drop in performance ratings indicates that the introduction of electronic monitoring had a negative impact on employee performance ratings. Significant declines in job satisfaction, engagement, autonomy, collaboration, and work-life balance, along with increases in stress and burnout, suggest that monitoring may be detrimental to the well-being and productivity of employees.

5.2.4.2: Analysis of Demographic variables and Performance Scores

The **Mann–Whitney U and Kruskal–Wallis H tests** were applied to examine differences in performance scores across various demographic factors. The findings are as follows:

Mann–Whitney U Test:

- No statistically significant difference in performance scores between male and female employees.
- No significant difference in performance score changes between married and unmarried employees.

Kruskal–Wallis H Test:

- Performance scores do not vary significantly across different age groups.
- No significant difference in performance scores among different employment statuses (null hypothesis accepted).
- Years of experience do not significantly impact performance scores.
- No statistically significant difference in performance scores across different education levels.

5.2.5: RELATIONSHIP BETWEEN ELECTRONIC MONITORING AND EMPLOYEE PERFORMANCE

Objective 2 - To identify the relationship between perception of employees of the IT sector towards Electronic Monitoring and its impact on performance.

5.2.5.1: Analysis of the relationship between employees' perceptions towards electronic monitoring practices and their performance.

The findings of canonical correlation test demonstrate a strong and significant relationship between employees' perceptions of electronic monitoring practices and their performance. Factors like confidentiality, communication, and fairness in evaluation showed the strongest correlations, significantly enhancing job satisfaction, productivity, and work-life balance. Progressive relationships were observed for perception factors such as equitable policies and privacy, indicating their role in reducing stress and burnout. However, trust issues were found to erode responsibility and engagement, emphasizing the need to foster trust in monitored environments. While some relationships were weak yet meaningful, a few perception factors exhibited no significant impact on performance outcomes, underscoring the variability in how employees respond to monitoring practices.

5.2.5.2: Association of demographic variables and Perception of employees toward electronic monitoring.

To analyze the relationship between demographic variables and employees' perceptions of electronic monitoring, the Chi-Square test was applied.

The analysis shows a significant relationship between gender and certain perception factors of electronic monitoring, including evidence-based monitoring, comfort zone, privacy, trust issues, communication, and equitable policies, as indicated by p-values below 0.05, leading to rejection of the null hypothesis. In contrast, effectiveness, confidentiality, job security, and unfair evaluation did not show a significant link, with p-values above 0.05, resulting in acceptance of the null hypothesis.

Age groups were found to influence perceptions of several monitoring practices, with significant associations for effectiveness, evidence-based monitoring, comfort zone, confidentiality, trust issues, communication, and equitable policies ($p < 0.05$). However, privacy, job security, and unfair evaluation were not significantly affected by age, supporting the null hypothesis.

Marital status appears to be significantly related to confidentiality, trust issues, equitable policy, job security, and unfair evaluation ($p < 0.05$). No significant connection was observed for effectiveness, evidence-based monitoring, comfort zone, privacy, and communication, leading to retention of the null hypothesis for these factors.

Education level was significantly associated with effectiveness, evidence-based monitoring, confidentiality, privacy, communication, equitable policy, job security, and unfair evaluation ($p < 0.05$). Conversely, comfort zone and trust issues showed no significant relationship, and the null hypothesis was accepted for these factors.

Employee experience significantly influenced perceptions regarding effectiveness, comfort zone, confidentiality, privacy, trust issues, communication, equitable policy, job security, and unfair evaluation ($p < 0.05$). Evidence-based monitoring, however, did not show a significant effect, supporting the null hypothesis.

Employment level was linked significantly with effectiveness, evidence-based monitoring, confidentiality, privacy, communication, equitable policy, and job security ($p < 0.05$). Comfort zone, trust issues, and unfair evaluation did not demonstrate a significant association, leading to acceptance of the null hypothesis for these areas.

5.2.6: DIFFERENTIATING MODES OF ELECTRONIC MONITORING PREFERRED AND IMPLEMENTED

Objective 3 - To differentiate different modes of monitoring preferred by employees and implemented by the company.

This chi square test analysis, combined with the details of the crosstab result indicates that there is a statistically significant association between the monitoring methods preferred by employees and those implemented by the company, and also points to potential mismatches where employee preferences are not aligned with company practices. The ERP system emerges as the most aligned, being the most implemented method (60 counts) and the most preferred by employees (120 counts). Conversely, biometric security systems, preferred by 96 employees, are implemented far less frequently (28 counts), indicating a gap between preference and practice. Similarly, email tracking, preferred by 56 employees, is implemented only 40 times, showing a slight mismatch. In contrast, installing monitoring software is implemented disproportionately higher (144 counts) compared to its preference (48 counts), suggesting overemphasis by companies. Lastly, tapping phones shows relative alignment, with 80 counts in both preference and implementation.

5.2.7: REASON EMPLOYEES BELIEVE FOR IMPLEMENTING MONITORING PRACTICES

Objective 4 - To highlight major reasons that employees believe in implementing monitoring practices

The Friedman Test results are statistically significant, leading to the acceptance of the alternative hypothesis, confirming that there is a significant difference in the reasons employees believe in implementing monitoring practices. Measuring performance and productivity emerged as the most preferred reason, while having physical accessibility was the least favored. This highlights that employees prioritize certain reasons over others.

5.3 – CONCLUSION

This study sheds light on the complex relationship between electronic monitoring practices and employee performance, emphasizing how perceptions shape outcomes. Monitoring has the potential to boost productivity, accountability, and organizational efficiency, but its effectiveness depends on how employees perceive these practices. Positive perceptions—built on principles of fairness, transparency, and privacy protection—foster higher levels of employee engagement, job satisfaction, and productivity. On the contrary, negative perceptions

stemming from privacy invasion, distrust, or unfair evaluations can result in increased stress, job burnout, and a decline in collaboration and morale.

The findings underscore the critical need for organizations to implement monitoring practices ethically and thoughtfully. Transparency in how monitoring is conducted, equitable application of policies, and a clear purpose for data collection are essential to creating trust among employees. Organizations should actively involve employees in the decision-making process regarding monitoring practices, ensuring their voices are heard. Additionally, data collected through monitoring must be used constructively, such as for identifying areas for training and development, rather than as a punitive measure. This balanced approach not only enhances organizational effectiveness but also ensures employee well-being.

From the employees' perspective, there is a need to actively engage with monitoring systems and view them as tools for personal and professional growth. Communicating concerns openly and constructively with management can lead to adjustments that make monitoring systems more acceptable. By fostering a mutually supportive environment where monitoring is seen as a collaborative effort rather than an imposition, both organizations and employees can reap the benefits. This shared approach promotes a harmonious workplace culture, leveraging monitoring to align organizational goals with employee satisfaction and performance.

5.4 – IMPLICATIONS

5.4.1 Managerial Implication

1. Adoption of Hybrid Monitoring Models

Organizations should adopt hybrid monitoring models that integrate system-based tracking with self-reporting mechanisms. This approach allows employees to have a sense of autonomy while still ensuring accountability. Over-reliance on automated tools can create feelings of constant surveillance, leading to stress and reduced morale. By incorporating self-assessment and goal setting, employees feel more trusted and empowered. Hybrid models also encourage open communication between employees and managers. This balance helps in maintaining productivity without compromising employee well-being. It is particularly relevant in IT environments where creativity and independence are essential. Thus, hybrid monitoring supports both performance and psychological empowerment.

2. Ensuring Transparency in Monitoring Practices

Transparency in monitoring practices is essential to build trust and acceptance among employees. Organizations must clearly communicate why monitoring is implemented, what data is collected, and how it will be used. Lack of clarity may lead to fear, resistance, and reduced job satisfaction. When employees understand the purpose of monitoring, they are more likely to perceive it as fair and legitimate. Transparent policies also reduce misunderstandings and conflicts. Involving employees in discussions about monitoring can further enhance trust. This approach promotes a culture of openness and fairness. Ultimately, transparency strengthens employee–management relationships.

3. Training on Digital Ethics and Responsible Data Use

As monitoring technologies become more advanced, ethical concerns related to data usage increase. Organizations should provide training on digital ethics to ensure responsible handling of employee data. This includes awareness of privacy, data protection, and fair use of monitoring tools. Ethical training reduces the risk of misuse, bias, or discrimination. It also

prepares employees to work confidently in a technology-driven environment. Managers can ensure compliance with legal and organizational standards through such training. Promoting ethical awareness strengthens the organization's reputation. Overall, it helps create a responsible and trustworthy digital workplace**.**

4. Implementation of Role-Specific Monitoring Approaches

Different IT roles require different levels and types of monitoring. Applying a uniform monitoring system across all roles may lead to inefficiencies and dissatisfaction. For example, developers may need uninterrupted time, while support staff may require real-time tracking. Role-specific monitoring ensures alignment between job requirements and monitoring techniques. This approach enhances accuracy in performance evaluation. It also reduces perceptions of unfair treatment among employees. Managers can optimize productivity by customizing monitoring tools. Therefore, context-based monitoring improves both efficiency and employee satisfaction.

5. Utilizing Monitoring for Training and Skill Development

Electronic monitoring can generate valuable insights into employee performance and work patterns. Managers can use this data to identify skill gaps and training needs. Instead of using monitoring solely for control, it should be viewed as a developmental tool. Targeted training programs can be designed based on performance data. This helps employees improve their skills and productivity. It also enhances career growth opportunities within the organization. Such an approach increases employee engagement and retention. Overall, it transforms monitoring into a positive and growth-oriented practice.

6. Continuous Review and Ethical Auditing of Monitoring Systems

Monitoring systems should not remain static and must be reviewed regularly. Continuous evaluation helps ensure that monitoring practices remain relevant and effective. Organizations should assess whether monitoring is achieving its intended objectives. It is also important to identify any negative impacts such as stress or privacy concerns. Ethical audits can help ensure compliance with standards and policies. Employee feedback should be incorporated into the

review process. This promotes fairness and adaptability in monitoring practices. Regular updates help maintain a balance between organizational control and employee well-being.

5.4.2 Theoretical Implications

1. Support for Organizational Control Theory

The study reinforces organizational control theory by highlighting the need to balance formal monitoring with self-regulation. Hybrid monitoring models reflect both structured control and employee autonomy. Traditional control mechanisms alone may not be effective in modern IT environments. Incorporating trust-based approaches enhances intrinsic motivation. Employees are more likely to perform better when they feel empowered. This finding extends the applicability of control theory in digital workplaces. It emphasizes the importance of combining different control mechanisms. Thus, the study contributes to a more balanced understanding of organizational control.

2. Application of Procedural Justice and Trust Theories

The findings support procedural justice theory by emphasizing fairness in monitoring practices. Transparent communication enhances employees' perception of fairness. When employees believe that monitoring is applied fairly, trust in management increases. Lack of fairness can lead to dissatisfaction and resistance. Trust theories also highlight the importance of openness in organizational relationships. Monitoring practices that are perceived as just are more likely to be accepted. This strengthens employee commitment and cooperation. Therefore, fairness and transparency are critical in shaping employee attitudes**.**

3. Contribution to Techno-Ethics Literature

The study contributes to techno-ethics by addressing ethical concerns in electronic monitoring. With the rise of AI and data-driven tools, ethical considerations have become more important. The research highlights the need for responsible use of technology in workplaces. Issues such as privacy, data security, and bias are central to techno-ethics. The study emphasizes integrating ethical principles into monitoring practices. It also supports the need for ethical training and

governance. This adds to the growing body of knowledge on ethical technology use. Overall, it reinforces the importance of ethical awareness in digital environments.

4. Validation of Contingency Theory

The findings validate contingency theory by showing that monitoring practices should vary based on context. A single approach cannot be applied to all job roles or situations. Different tasks require different levels of supervision and control. Role-specific monitoring aligns with the principles of contingency theory. This approach improves effectiveness and reduces inefficiencies. It also enhances employee satisfaction by addressing specific needs. The study demonstrates that flexibility in management practices is essential. Thus, it supports the relevance of contingency theory in modern organizations.

5. Link to Positive Organizational Scholarship and HPWS

The study aligns with positive organizational scholarship by viewing monitoring as a developmental tool. Instead of focusing on control, it emphasizes growth and employee well-being. High-performance work systems (HPWS) also support practices that enhance employee capabilities. Using monitoring data for training contributes to skill development and performance improvement. This approach fosters a positive work environment. Employees are more engaged when they see opportunities for growth. It also improves retention and organizational performance. Therefore, the study highlights the positive potential of monitoring systems.

6. Alignment with Socio-Technical Systems Theory

The study supports socio-technical systems theory by emphasizing the interaction between technology, people, and processes. Effective monitoring requires a balance between these elements. Overemphasis on technology can negatively impact employees. Integrating human factors ensures better acceptance of monitoring systems. The study highlights the need for continuous adaptation of systems. Organizations must align monitoring practices with employee needs and organizational goals. This holistic approach improves overall effectiveness. Hence, the research reinforces the importance of a balanced socio-technical perspective.

5.5 - SUGGESTIONS

Objective 5 - To provide recommendations to management and employees to have a balanced approach toward electronic monitoring.

5.5.1: Suggestions for organization

1. Shift from Surveillance to Supportive Monitoring

Organizations should redesign monitoring systems to focus on outcomes rather than continuous activity tracking. Excessive surveillance can create pressure and reduce job satisfaction, as seen in the decline after monitoring. By evaluating employees based on results such as task quality and completion, organizations can reduce stress and improve morale. Supportive monitoring helps employees feel trusted rather than controlled. This approach maintains productivity while minimizing negative psychological effects. Ultimately, it creates a more positive and performance-oriented work environment.

2. Provide Employee Control over Monitoring Systems

Employees should be given access to their own performance data and allowed to participate in monitoring processes. Features like self-reporting and goal-setting can restore autonomy, which significantly declined after monitoring. When employees feel involved, they are more likely to accept monitoring practices. This sense of control reduces resistance and improves job satisfaction. It also encourages accountability without creating pressure. Empowering employees in this way builds trust and motivation.

3. Customize Monitoring Based on Job Roles

Monitoring practices should be tailored according to the nature of different IT roles. Uniform monitoring can create dissatisfaction, especially for roles requiring creativity and deep focus. For example, developers may benefit from minimal interruptions, while support roles may require closer tracking. Role-based monitoring ensures fairness and relevance in evaluation. It also prevents unnecessary stress caused by inappropriate monitoring methods. This improves both performance and employee satisfaction.

4. Integrate Monitoring with Feedback and Recognition

Monitoring data should be used to provide timely feedback and recognize employee achievements. Regular feedback helps employees understand their performance and areas for improvement. Recognition of good work can counter the decline in job satisfaction and engagement observed after monitoring. Positive reinforcement motivates employees and enhances morale. These shifts monitoring from a control tool to a supportive mechanism. As a result, employees are more engaged and productive.

5. Ensure Transparency with Real-Time Communication

Organizations must clearly communicate what is being monitored and how the data is used. Lack of transparency can lead to mistrust and dissatisfaction among employees. Real-time dashboards and updates can help employees stay informed about their performance. When employees understand the purpose of monitoring, they are more likely to accept it. Transparency also reduces anxiety and confusion. This fosters a culture of openness and trust within the organization

6. Avoid Over-Monitoring to Protect Work-Life Balance

Monitoring should be limited to necessary work activities and should not extend beyond working hours. Over-monitoring can negatively impact on work-life balance, as reflected in the findings. Organizations should set clear boundaries to prevent intrusion into personal time. Flexible monitoring policies can help employees manage both work and personal responsibilities. This reduces burnout and stress levels. Maintaining balance is essential for long-term employee satisfaction and well-being.

7. Use Monitoring Data for Skill Development, Not Punishment

Monitoring insights should be used to identify performance gaps and training needs rather than penalizing employees. A punitive approach can lead to fear, reduced motivation, and lower engagement. Instead, organizations should focus on continuous learning and development. Providing training based on monitoring data helps employees improve their skills. This enhances productivity and confidence. A developmental approach makes monitoring more acceptable and beneficial.

8. Encourage Team-Based Monitoring for Better Collaboration

Organizations should incorporate team-level monitoring alongside individual tracking. Individual monitoring alone may reduce collaboration, as seen in the decline after monitoring. Team-based evaluation encourages collective responsibility and cooperation. It also promotes knowledge sharing and communication among employees. This helps rebuild a collaborative work environment. As a result, both team performance and employee satisfaction improve.

9. Minimize Psychological Pressure through Smart Monitoring Tools

Organizations should use less intrusive monitoring tools such as project management systems instead of constant surveillance. Continuous tracking can create anxiety and reduce job satisfaction. Smart tools focus on progress and outcomes without invading employee privacy. This reduces stress while maintaining accountability. Employees feel more comfortable and less pressured in such environments. This leads to improved performance and well-being.

10. Continuously Adapt Monitoring Based on Employee Feedback

Monitoring practices should be regularly reviewed based on employee feedback. This helps organizations identify issues and make necessary improvements. Employees feel valued when their opinions are considered. Continuous adaptation ensures that monitoring remains relevant and acceptable. It also helps balance organizational control with employee needs. This dynamic approach improves satisfaction and long-term effectiveness of monitoring systems.

5.5.2: Suggestions for Employees

1. Develop a Positive Perception of Monitoring

Employees should view monitoring as a tool for performance improvement rather than surveillance. A negative mindset can increase stress and dissatisfaction. Understanding that monitoring helps in maintaining accountability can improve acceptance. It also enables employees to align their efforts with organizational goals. A positive perception can reduce

resistance and enhance job satisfaction. This mindset shift is essential in a technology-driven work environment.

2. Actively Engage with Performance Feedback

Employees should utilize monitoring feedback to improve their performance. Regularly reviewing dashboards and reports can help identify strengths and weaknesses. Instead of ignoring feedback, employees should take corrective actions. This improves productivity and efficiency over time. Engaging with feedback also shows professionalism and willingness to grow. It ultimately enhances career development opportunities.

3. Maintain Work Discipline and Time Management

Monitoring systems often track time and task completion, making discipline essential. Employees should plan their work schedules effectively to meet deadlines. Proper time management reduces stress and improves performance outcomes. It also helps in maintaining consistency under monitored environments. Being disciplined ensures better evaluation results. This leads to improved job satisfaction and reduced pressure.

4. Communicate Concerns Openly with Management

Employees should express any concerns regarding monitoring practices to management. Open communication can help resolve misunderstandings and reduce anxiety. It also allows organizations to improve monitoring systems based on feedback. Employees who communicate effectively feel more valued. This reduces dissatisfaction and builds trust. A transparent approach benefits both employees and employers.

5. Focus on Skill Development Using Monitoring Insights

Employees should use monitoring data to identify areas for improvement. Instead of feeling threatened, they should see it as an opportunity for learning. Improving skills based on feedback enhances performance and confidence. It also increases career growth prospects. Continuous learning helps employees stay competitive in the IT sector. This approach turns monitoring into a personal development tool.

6. Adapt to Changing Work Environments

Electronic monitoring is becoming a standard practice in modern workplaces. Employees should be flexible and adaptable to such changes. Resistance to change can lead to dissatisfaction and stress. Accepting new technologies helps in smoother work processes. Adaptability also improves overall efficiency. It ensures long-term career sustainability in the evolving IT industry.

7. Maintain Work-Life Balance through Self-Regulation

Employees should set clear boundaries between work and personal life. Monitoring may create pressure to stay constantly active, but self-regulation is important. Taking breaks and managing workload effectively can prevent burnout. Employees should avoid overworking to meet monitored targets. Maintaining balance improves mental health and productivity. It ensures long-term job satisfaction.

8. Collaborate Effectively Despite Monitoring

Employees should continue to engage in teamwork and communication. Monitoring may reduce interaction, but collaboration is essential for performance. Sharing knowledge and supporting team members improves outcomes. It also enhances workplace relationships. Employees should actively participate in team activities. This helps maintain a positive work culture.

9. Build Trust through Accountability and Transparency

Employees should maintain honesty and accountability in their work. Meeting deadlines and delivering quality work builds trust with management. Transparent work behavior reduces the need for excessive monitoring. It also improves performance evaluations. Trust-based relationships lead to better work environments. Employees benefit from greater autonomy over time.

10. Leverage Monitoring Data for Personal Growth and Innovation

Employees can proactively use monitoring insights to identify patterns in their own work, discover efficiency gaps, and optimize their workflow. Instead of viewing monitoring solely as oversight, they can treat it as a tool for self-improvement. For example, analyzing task completion times or collaboration metrics can help them innovate processes, propose new

solutions, or automate repetitive tasks. This approach not only boosts individual performance but also demonstrates initiative to management. By turning monitoring data into a personal development roadmap, employees can enhance their skills, increase visibility in the organization, and take ownership of their career growth.

5.6 – FUTURE SCOPE OF THE STUDY

The topic of electronic monitoring offers significant potential for future research, especially when considering its application as a safety measure for employees. For instance, electronic monitoring can be explored for its role in preventing theft, ensuring workplace safety, and addressing issues like social harassment. A detailed study on the effectiveness of monitoring systems in creating a safer workplace environment, particularly in industries with high-security concerns, can provide valuable insights into their broader organizational impact.

Future research can leverage electronic monitoring (EM) data to anticipate employees' long-term career paths and identify their optimal role within an organization. By analyzing patterns such as task preferences, work pace, collaboration style, and project engagement, researchers can determine which employees are most suited for leadership positions, specialized technical roles, or cross-functional responsibilities. This approach moves beyond traditional performance evaluation, positioning EM as a strategic tool for personalized career planning. Insights from such studies can help organizations design targeted development programs, succession planning, and skill alignment strategies, ultimately enhancing both employee growth and organizational effectiveness. Furthermore, understanding role fit through monitoring data can improve job satisfaction, retention, and the efficient allocation of human capital in knowledge-intensive sectors like IT.

Additionally, future studies could examine the impact of electronic monitoring on employee creativity and innovation. Monitoring practices may either foster disciplined creativity or inhibit innovation due to perceived constraints or fear of judgment. Exploring how monitoring affects these cognitive processes could offer valuable insights for organizations that rely on creative outputs.

Another promising direction is the integration of artificial intelligence (AI) and machine learning (ML) into electronic monitoring systems. These technologies have the potential to transform monitoring from traditional methods to more sophisticated, data-driven approaches. AI-powered systems can analyze large volumes of data in real-time, detect patterns and anomalies, and provide actionable insights, supporting both organizational decision-making and employee development. Research in this area could explore how advanced monitoring can be effective yet minimally intrusive.

Finally, investigating the ethical and legal dimensions of electronic monitoring presents an important avenue for research. This includes examining compliance with privacy laws, data protection regulations, and employee rights. Such studies could guide organizations in designing monitoring systems that uphold legal and ethical standards while balancing organizational objectives with employee autonomy.

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1. Chandni Sheth & Dr. Rajesh Faldu (2023) A review Paper on Managing Monitoring & Morality, KUTAP UGC Care Enlisted & Peer reviewed referred international Journal, ISSN number 2582-5356, Volume 6, Issue 8, January-June 2023.

2. Chandni Sheth & Dr. Rajesh Faldu (2024) Digital Oversight: The Rise of AI in Transforming Employee Performance Monitoring, IPE Journal of Management, ISSN: 2249-9040, UGC Care Listed Journal, Volume 14, No. 2, January-June 2024.

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CERTIFICATE
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Appendix – Survey Questionnaire

Study on Identifying the Impact of Electronic Monitoring on Employee Performance in the IT Industry

Dear Participant,

I am pursuing my PhD in Management - HR from Gujarat Technological University. As a partof my research work, I am conducting research on identifying the Impact of electronic monitoring on the performance of employees working in the IT sector. Requesting you to provide a few minutes for the survey.

Your participation will be anonymous and the data will be strictly used for research purposes. No personal questions have been asked that reveal you or your organization. Your responsewill add value to my research as well as to the literature. Kindly go through all the questions carefully and choose the response that seems mostsuitable to you.

Thanks a lot for your participation.
Chandni Sheth

DEMOGRAPHIC INFORMATION

1. Gender

- o Male
- o Female

2. Age Group

- o Below 30 years
- o 31 – 40 years
- o 41 – 50 years
- o 51 – 60 years
- o Above 60 years

3. Marital Status

- o Married
- o Unmarried

4. Educational Background

- o Non-Graduate
- o Graduate
- o Diploma Course
- o Postgraduate
- o Professional Degree
- o Other

5. Type of Family

- Joint Family
- Nuclear Family

PROFESSIONAL INFORMATION

6. Type of Employment

- Probation Period
- Permanent
- Contractual Basis

7. Sector of IT industry

- IT services
- Software Products & Engineering Services
- Business Processing Management
- Hardware

8. Current Job Profile

- Software Developer/Designer
- Application Developer/Designer
- Database Administrator/Analyst
- IT Consultant
- Project Manager/Team Lead
- Web Developer/Designer
- Cyber Security Analyst
- Network Administrator/Analyst
- Software Consultant
- Other

9. Experience

- Less than 1 year
- 5 years to 10 years
- 1 year to 5 years
- More than 10 years

10. Monthly Income

- Less than 50000
- 1 Lacs to 3 Lacs
- 50000 to 1 Lacs
- More than 3 Lacs

11. Have you been Monitored at your workplace

- Yes
- No

EMPLOYEES' PERCEPTION TOWARDS ELECTRONIC MONITORING

12. Do you think monitoring is required for the job that you do

- Yes
- No
-

13. Are you being monitored through CCTV Camera?

- Yes
- No

14. Apart from CCTV Camera which monitoring option is the most preferred and comfortable monitoring technique for you?

- By Tapping your phone
- By E-mail Tracking
- By installing Monitoring Software
- By GPS Tracking
- By ERP System
- By Biometric Security System

15. Which Monitoring method is implemented by your organization?

- By Tapping your phone
- By E-mail Tracking
- By installing Monitoring Software
- By GPS Tracking
- By ERP System
- By Biometric Security System

16. What according to you could be the vital reason for monitoring?

Particulars	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
To measure your performance & productivity					
To monitor the content shared/communicated					
To review internet usage					
To have physical accessibility					
To measure working time/idle time duration					
To check the accuracy of the work					

17. At what level do you think monitoring practices are implemented in your organization

- Normal
- Moderate
- Extreme

18. What is your perception about monitoring practices implemented at your organization?

Particulars	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Effectiveness of Work (Monitoring practices contribute to the overall effectiveness of my work)					
Evidence-Based (Outcome of Monitoring is useful to me as evidence for the future)					
Comfort Zone (Monitoring practices provide me with comfortable situations to work)					
Confidentiality (Monitoring practices help to reduce breaching of confidentiality.)					
Privacy Concern (Monitoring practices invade my privacy)					
Trust Issues (Monitoring practices lessen the trust between management and employees.)					
Transparency (The purpose and use of monitoring practice is communicated to me)					

Fair & Equitable policy (Monitoring Practice is fairly and consistently applied to all the employees)					
Job Security Concern (Electronically monitored data might be used for downsizing or restructuring)					
Fear of Unfair Evaluation (Your performance might be judged solely based on electronically collected data)					

19. Does your company inform you about its monitoring policy in advance

Yes No

IMPACT OF ELECTRONIC MONITORING ON PERFORMANCE

20. How would you describe yourself and your performance before the implementation of electronic monitoring practices

Particulars	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Work Productivity (I was able to maintain a high level of focus and concentration on my work tasks.)					
Job Satisfaction (I derived job satisfaction from accurately accomplishing my goals.)					
Responsibility & Accountability (I tend to be more responsible)					
Stress Level					

(I felt nervous, frustrated & stressed out					
Job Engagement (I used to be more engaged in my job)					
Task Completion Time (I was able to meet my deadlines within the time)					
Autonomy (I felt a sense of autonomy within my role					
Collaboration (I used to have strong collaboration and communication with my team members)					
Work-Life Balance (I experienced a healthy work-life balance)					
Job Burnout (I experienced a high level of Job Burnout)					

21. How far does Electronic Monitoring impact you and your performance at the workplace currently?

Particulars	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Work Productivity (I'm able to maintain a high level of focus and concentration on my work tasks.)					
Job Satisfaction (I derive job satisfaction from accurately accomplishing my goals.)					

Responsibility & Accountability (I tend to be more responsible)					
Stress Level (I feel nervous, frustrated & stressed out					
Job Engagement (I'm able to be more engaged in my job)					
Task Completion Time (I'm able to meet my deadlines within the time)					
Autonomy (I feel a sense of autonomy within my role					
Collaboration (I have strong collaboration and communication with my team members)					
Work-Life Balance (I experience a healthy work-life balance)					
Job Burnout (I experience a high level of Job Burnout)					

Thank you for your response