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NSSTA

Government of India
Ministry of Statistics and Programme Implementation
National Statistical Systems Training Academy (NSSTA)

Report on Statistical Training needs Assessment Survey

Prepared by NSSTA

In Collaboration with

Capacity Building Commission (CBC)

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सत्यमेव जयते

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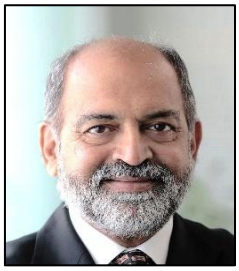

Message

I am pleased to present this report on the Statistical Training Needs Assessment (STA) Survey, marking a significant step in enhancing the capabilities of our nation's statistical workforce. This assessment provides a detailed evaluation of the current training landscape for Indian Statistical Service (ISS) officers and offers actionable insights to improve their ability to deliver high-quality, data-driven statistical services.

As the landscape of governance becomes increasingly complex, equipping our public servants with the right competencies is essential. The findings from this assessment highlight not only the existing strengths but also the areas where there are critical skill gaps, particularly in emerging areas such as artificial intelligence, big data analytics, macroeconomic statistics, and cross-functional skills. These gaps represent a crucial opportunity to realign training efforts to meet the demands of modern governance.

The Capacity Building Commission (CBC) has supported the NSSTA in conducting this exercise, which is central to improving the training framework within India's statistical services. The insights from this survey will guide efforts to realign training initiatives with the evolving needs of the sector, ensuring our officers are prepared to excel in a rapidly changing environment. By leveraging platforms like iGOT, integrating advanced technologies, and fostering continuous learning, we are building a workforce that is not only capable but also future-ready and aligned with national priorities.

I extend my sincere thanks to all stakeholders, experts, and institutions whose contributions have shaped this report. Special appreciation goes to NSSTA and the leadership at MOSPI for their valuable input.

I encourage all ministries, departments, and training institutions to use the insights from this report to enhance individual and institutional capabilities. By fostering a culture of continuous learning, we can build a future-ready workforce and drive greater governance effectiveness.

Adil Zainulbhai

(Adil Zainulbhai)

Place : New Delhi

डॉ. सौरभ गर्ग, भा.प्र.से.
सचिव
Dr. Saurabh Garg, I.A.S.
Secretary

सत्यमेव जयते

भारत सरकार
सांख्यिकी एवं कार्यक्रम कार्यान्वयन मंत्रालय
Government of India
Ministry of Statistics & Programme Implementation

Message

In an era where data serves as the cornerstone of governance and policy decisions, a robust and well-trained statistical workforce is essential for shaping India's development trajectory. As one of the largest statistical systems in the world, India relies on timely, accurate, and well-analyzed data to drive evidence-based policymaking across sectors. The National Statistical Systems Training Academy (NSSTA) plays a pivotal role in building this capacity by equipping the officials with the necessary analytical and technical skills. Recognizing the evolving nature of statistical training needs, NSSTA, MoSPI, in collaboration with the Capacity Building Commission (CBC), Government of India, has undertaken the **Statistical Training needs Assessment (STA) Survey** to systematically evaluate the existing training ecosystem and strategic planning for capacity building.

It is my pleasure to present this report, which underscores our commitment to strengthening institutional capacity and fostering a data-driven governance framework. This report serves as a crucial tool in that endeavor, offering a comprehensive evaluation of the current training landscape and identifying key areas for enhancement. The findings provide a structured analysis of training needs, helping to bridge skill gaps and align learning interventions with national priorities.

I extend my sincere appreciation to all those who have contributed to this survey and report including CBC and CEGIS. I also commend the NSSTA officers along with DDG(NSSTA), ADG(CDD) and DG(DG) for their dedication and hard work for conducting the survey and compiling the results. The efforts of officers and training professionals have been instrumental in shaping this assessment. I am confident that the insights and recommendations presented will serve as a foundation for future training strategies, further strengthening governance at all levels.

Saurabh Garg

(Dr. Saurabh Garg)

Place : New Delhi

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Executive Summary

This report on Statistical Training needs Assessment (STA) Survey provides a detailed overview of the Statistical Training needs Assessment conducted by the National Statistical Systems Training Academy (NSSTA), Ministry of Statistics and Programme Implementation (MoSPI) in collaboration with the Capacity Building Commission (CBC), Government of India. It marks a significant step toward strengthening the capacity of Statistical Personnel of Indian Statistical System. The assessment systematically identifies knowledge gaps among Indian Statistical Service (ISS) officers, prioritizes the required skills, and examines their learning styles and cultural contexts. Based on these insights, training modules will be designed to effectively address skill gaps and deliver targeted training programmes

The assessment reveals that while the officials possess foundational competencies in core areas such as Statistics and IT, there are gaps in advanced domains like big data analytics, macroeconomic statistics, and cross-functional skills. Notably, the supervisory staff highlighted the need for an improved understanding of Global best practices and cutting-edge digital tools to keep up with global trends.

- **Key findings from the assessment include:**

The questionnaire was divided into four domains, designed to assess the training needs based on the respondents' current line of work. Officers were directed to questions aligned with their work area, and those involved in multiple domains (e.g., Statistics and IT) were asked to respond to sections as necessary. The domains included:

- Statistics
- IT
- Communication and Dissemination of Statistics
- Administration and Finance

Findings highlighted that basic knowledge and high priority were listed in statistical tabulation and report writing is a high-priority skill for organizing and presenting data, essential for both supervisors and individual officers. Additionally, familiarity with visualization tools and designing infographics is prioritized to support analysis and enhance data comprehension. Basic knowledge of government financial and administrative rules is also crucial for ensuring compliance in procurement, budgeting, and administrative processes.

Learning Culture and Preferences

According to the learning culture and preferences, there is a clear preference for classroom-based training, with a significant number of respondents also favouring phygital models that combine both physical and digital formats. The majority of

respondents (66%) expressed a preference for a 5-day training programme, while 38.3% opted for a 3-day training programme.

Reflections on MCTP offered courses

In the Mid-Career Training Programme (MCTP) of ISS officers, supervisors and individuals reported high satisfaction with the offered courses in Phase 1 (officers with 8–10 years of experience) at 87.9% and 79.4%, respectively, as well as in Phase 2. However, in Phase 3 (officers with 23–28 years of experience), while supervisors maintained 100% satisfaction, individual satisfaction declined to 83.7%, indicating suggestions to include other topics like on Communication skills, international organization collaborations etc.

Expected Training needs for ISS Probationers

Probationers require foundational training in statistical methodologies, IT skills, communication strategies, and administrative procedures, focusing on basic to intermediate competency levels. Specific emphasis is needed on data visualization, labour force statistics, media handling, vigilance, and legal matters to enhance their analytical and operational capabilities.

This STA Survey serves as a strategic milestone for NSSTA in building a proficient, future-ready workforce that can adapt to the evolving demands of a data-driven governance framework. These findings will guide the development of a focused, high-impact training program that aligns with both individual development needs and institutional priorities, thereby strengthening India's statistical personnel for the future.

Introduction

The National Statistical Systems Training Academy (NSSTA) established on 13th February 2009 is the premier institute under the Ministry of Statistics and Programme Implementation (MoSPI) dedicated to fostering human resource development in the field of Official Statistics and related disciplines, situated in Greater Noida, Uttar Pradesh, NSSTA has been at the forefront of capacity building for statistical personnel at the National, State/UT as well as International level. The academy is pivotal in equipping the statistical workforce with advanced knowledge and skills to meet the challenges posed by an evolving socio-economic environment and advancements in technology and statistical methodologies. NSSTA achieves its objectives through induction trainings, refresher courses, and specialized programmes that address both the foundational and emerging needs of statistics personnel including officers of the Indian Statistical Service and Subordinate Statistical Service.

Training Strategy

The Academy employs a multi-pronged training strategy that includes:

- **Induction and Mid-Career Training Programmes:** Comprehensive programmes for newly recruits and in-service personnel to enhance their skills in areas such as statistical systems, large-scale surveys, data management, and emerging technologies.
- **Demand-based and International Training Programmes:** Tailored programmes based on specific requests/demands from state/UT governments and international collaborations with organizations like UN-SIAP etc.
- **Awareness and Outreach Programmes:** Initiatives to sensitize potential human resources, including students and faculties from universities, about the Indian official statistics and its scope.

Introduction to Capacity Building Commission

The Capacity Building Commission established under the Mission Karmayogi of Government of India, serves as the nodal body for driving capacity-building reforms across civil services and collaborates with various departments and training institutions to enhance the efficiency, competency, and responsiveness of public officials.

Roles and Objectives

- **Standardization and Accreditation:** CBC ensures the standardization of training contents and accredits institutions for quality assurance.
- **Training needs Assessment:** The Commission plays a pivotal role in

identifying training needs and recommending strategies to address competency gaps.

- **Promoting a Learning Ecosystem:** It fosters a culture of continuous learning and professional development among civil servants.

Adoption of the Statistical Training needs Assessment Tool (STA) for Strategic Training needs Assessment (STA)Survey

The Statistical Training needs Assessment Tool, also known as STA, is a tool developed by Global Network of Institutions for Statistical Training (GIST) (a network of international and regional training institutions. STA was launched in 2023 in a side event of 55th session of UNSC. STA is being used by National Statistical Offices (NSOs) to assess and analyze skills gaps of staff and strategically decide on how to prioritize and meet their training needs by using different types of informal and formal learning approaches. NSSTA adopted the STA in 2024 customizing its implementation to address India's specific requirements which included:

- Developing detailed questionnaires for individuals and supervisors to capture skill gaps across core statistics, IT, communication and dissemination of statistics, administration and finance.
- Conducting comprehensive surveys and analyses to prioritize training interventions.
- Aligning with international practices while addressing the localized needs of state and national statistical personnel.

The introduction of STA has allowed NSSTA to better identify critical areas for capacity building including advanced statistics techniques, IT, finance, and communication skills while ensuring targeted and impactful training programmes.

Collaboration of NSSTA with CBC

In its collaboration with NSSTA, CBC provides support to assess and enhance capacity building activities which include:

- Co-developing competency-based training modules
- Leveraging digital learning platforms like IGOT for scalable and personalized learning
- Conducting webinars, workshops, and capacity-building initiatives aimed at modernizing the statistical workforce

By combining the expertise of NSSTA in statistical training with CBC's mandate for capacity building, the collaboration ensures a cohesive approach towards creating a future-ready statistical cadre capable of addressing national and global challenges.

The Statistical Training needs Assessment (STA) Survey

This is a strategic initiative aimed at systematically identifying skill gaps, prioritizing training areas, understanding learning preferences, and aligning the academy's offerings with the current and future governance demands to build a future-ready workforce.

The objectives of Statistical Training needs Assessment (STA) Survey are threefold:

- To evaluate the current competencies and skill levels of ISS officers
- To identify key training priorities based on individual and institutional needs
- To propose actionable recommendations for designing targeted training programmes that enhance both individual and institutional performance.

Benefits of the Statistical Training needs Assessment (STA) Survey:

This STA Survey provides significant benefits to both individuals and the institution as a whole. Key advantages include:

- **Identification of critical skill gaps:** This process allows for a comprehensive assessment of where the knowledge and skills are lacking. This ensures that training is focused on areas of greatest need such as statistical software knowledge, financial rules, and data security.
- **Targeted Training Programmes:** With a clearer understanding of the specific training needs of both individuals and supervisors, training programmes can be customized to address the gaps identified.
- **Optimized Resource allocation:** The assessment helps prioritize which

training areas should receive attention first, ensuring that limited training resources are allocated efficiently.

- **Improved organizational efficiency:** By addressing skill gaps, the assessment ensures that employees are more competent and confident in their roles, ultimately leading to increased productivity.
- **Informed Decision-Making:** The data gathered from this assessment provides leadership with actionable insights into workforce capabilities. This enables informed decision-making about the training priorities and the development paths of individual employees and teams.

Approach and Methodology of Statistical Training needs Assessment (STA)Survey

Survey Instruments

The Statistical Training needs Assessment (STA) Survey utilized carefully crafted survey instruments, drawing inspiration from the Statistical Training needs Assessment Tool (STA) developed by GIST, UNSD. The STA is a globally recognized framework that systematically identifies skill gaps and training priorities within national statistical systems. It provides a structured approach to assess competencies across various statistical functions, ensuring alignment with global best practices.

To meet the specific needs of officers of Indian Statistical Service (ISS), the survey instruments were contextualized and adapted as follows:

- **Individual STA Form:**
  - **Purpose:** Captured self-assessed skill levels, learning needs, and training priorities of statistical officers.
  - **Domains Covered:**
    - Statistics: Core and advanced statistical methodologies.
    - IT: Proficiency in data analysis tools and digital platforms.
    - Communication and Dissemination of Statistics: Effective reporting, visualization, and communication of statistical insights.
    - Administration and Finance: Managerial and financial skills essential for efficient governance.
- **Supervisor STA Form:**
  - **Purpose:** Complemented the Individual STA Form by incorporating managerial insights to validate individual responses and provide a broader perspective on team-wide training requirements.
  - **Domains Covered:** Mirrored the domains of the Individual STA Form to ensure alignment and comprehensive coverage.

By integrating the structured approach of the STA with localized adjustments, this dual-survey method ensured a balanced and robust assessment process. It combined individual self-assessments with supervisor validations, providing a nuanced understanding of training needs. This approach enabled NSSTA to prioritize skill development areas effectively, supporting the broader vision of

enhancing India's statistical capabilities.

Survey Design

Drawing from the STAT framework, the survey forms were structured into the following key sections:

- **Respondent Profile:** Capturing demographic information, years of service, and current roles.
- **Domain-Specific Skills:** Assessing knowledge and proficiency in areas such as Statistics, Information Technology (IT), Communication and Dissemination, and Administration and Finance.
- **Learning Styles and Culture:** Documenting preferences for training delivery methods and formats.

The forms used a four-point scale to rate skill levels ("No Knowledge" to "Advanced Knowledge") and categorized training priorities into "Not a Priority," "Low Priority," "Medium Priority," and "High Priority." Respondents were provided with a Caution Note to ensure consistency and realistic prioritization in their responses. They were advised that if a skill was marked as "Not relevant for my current job" in the skill assessment, it should be categorized as "Not a Priority" in the training prioritization. Similarly, if a skill was marked as "Advanced Knowledge," it should be categorized as either "Not a Priority" or "Low Priority." These guidelines, combined with contextual adjustments to reflect India's statistical landscape and governance challenges, ensured that the survey remained relevant and aligned with the specific training needs of NSSTA's target audience.

Data Collection and Quality Checks

The survey underwent a rigorous pilot phase, tested internally by the senior officers of NSSTA and the CBC/CEGIS team to ensure its design, content, and functionality met the required standards. The survey was rolled out to various ministries and departments after the pilot.

To ensure the reliability and accuracy of the collected data, several measures were implemented:

- **Supervisor Cross-Verification:** Responses were reviewed keeping in view the responses of the supervisors to ensure consistency.

[1] No knowledge: You might have heard about the subject but know nothing or very little about the skill.
Basic knowledge: You know, recognize and can describe the skill. In practice, you have been introduced to and might even have tried to test the skill under supervision.
Intermediate knowledge: You can use the skill for your work at a sufficient level.
Advanced knowledge: You use the knowledge with ease and have a wide background on the topic. You can also write guidance documents and support or teach others.

- **Comprehensive Quality Checks:** Detailed quality assurance processes were conducted to identify and address discrepancies, as well as to resolve incomplete submissions, ensuring the dataset's integrity.

These steps were critical in maintaining the robustness and credibility of the data collected during the STA exercise.

Data Analysis

Following data collection, a multi-step analysis was conducted to:

- Identify skill gaps and training priorities across domains.
- Evaluate alignment between individual self-assessments and supervisor assessments.
- Highlight domain-specific and overarching training needs.

This approach enabled the identification of critical skill gaps and provided actionable insights for strategic capacity building planning.

This report summarizes these findings and serves as a roadmap for addressing the identified needs, leveraging NSSTA's resources to foster a competent statistical workforce aligned with global standards.

Findings of Training needs Assessment (STA) Survey

A total of 143 individual responses and 33 supervisor responses were received. The collected data was then cleaned and scrutinized to ensure accuracy and reliability before conducting detailed assessments.

Respondents' Profile

The respondent pool comprised officers from various ministries, departments, and roles, with a majority representing the Ministry of Statistics and Programme Implementation (MoSPI). Key demographic and professional data include:

- **Gender Distribution:** 37.1% female and 62.9% male among individuals; 30.3% female and 69.7% male among supervisors' respondents.

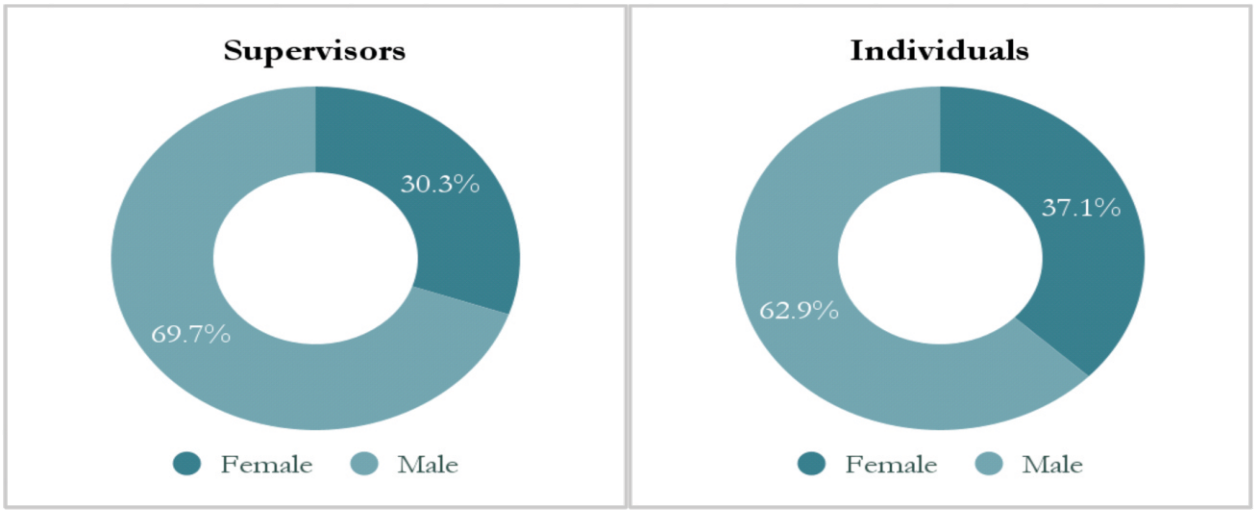


Figure 1: Gender of respondents

- **Years in Service:** Officers ranged from 2 to 28+ years of service, with significant representation in the 2–4 and 23–28-year brackets.

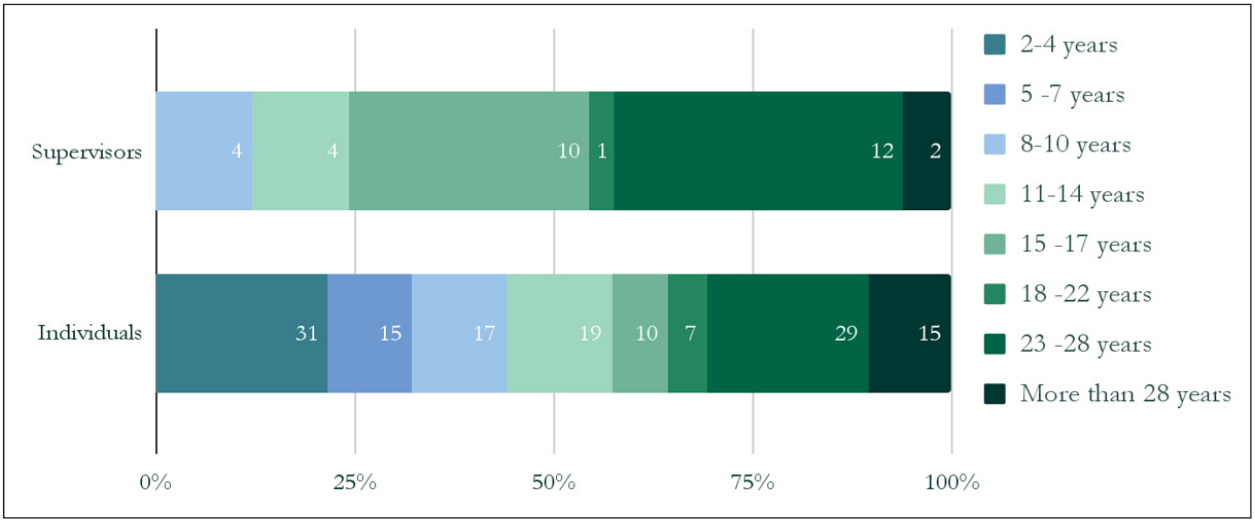


Figure 2: Respondents' years in service

- **Ministries:** This includes the spread of respondents across 44+ ministries, including names like the Ministry of Agriculture & Farmers Welfare, Ministry of Education, Ministry of Finance, etc.

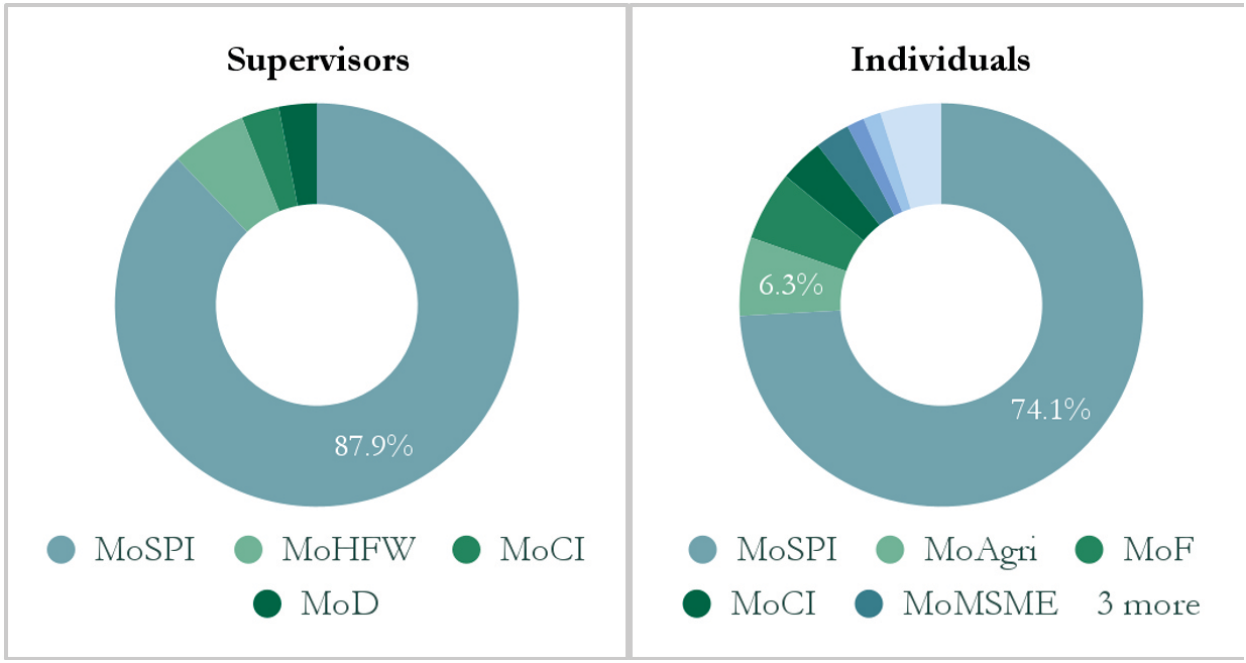


Figure 3: Spread of respondents across ministries

- **Designations:** Included roles from Assistant Directors and equivalents to Director Generals and equivalents, reflecting a diverse experience spectrum.

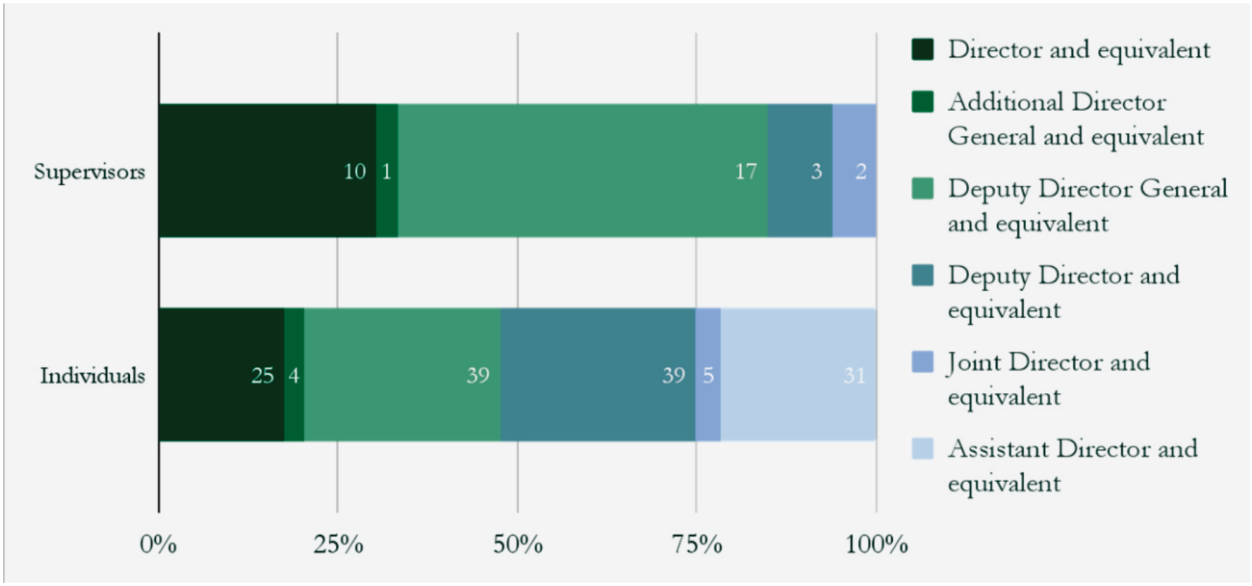


Figure 4: Spread of designations among respondents

- **Line of Work Areas:** Includes the spread of respondents across Statistics, IT, Communication, and Dissemination of Statistics and Administration and Finance.

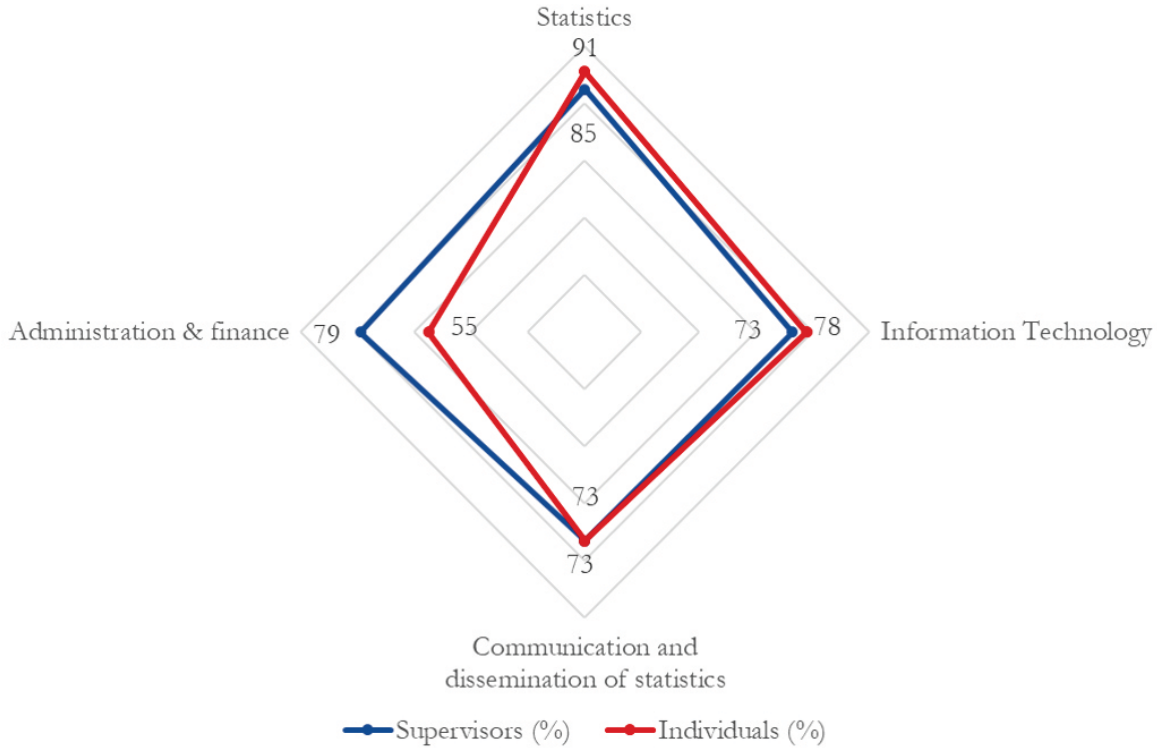


Figure 5: Assessment of line of work areas

Respondents' Current Skill Level Across Competencies

This section highlights the current skill level as reported by the respondents, along with the responses received from the supervisor feedback about their team members.

Statistics

Gaps were observed in advanced statistical methods like small area estimation and macroeconomic statistics. Foundational skills like research methodology and survey design showed higher competency levels but still required improvement for certain respondents.

Data sources, collection and processing

Supervisors assessed officers as having basic to intermediate proficiency in data collection and processing but noted limited expertise in integrating multiple data sources, such as survey data, administrative records, and newer datasets like those based on the GST system. In contrast, officers rated themselves slightly higher in research methodology but recognized gaps in handling big data and advanced survey techniques. To strengthen their capabilities, structured training is needed to

help officers effectively integrate traditional and modern data sources, ensuring more accurate policymaking and statistical reporting.

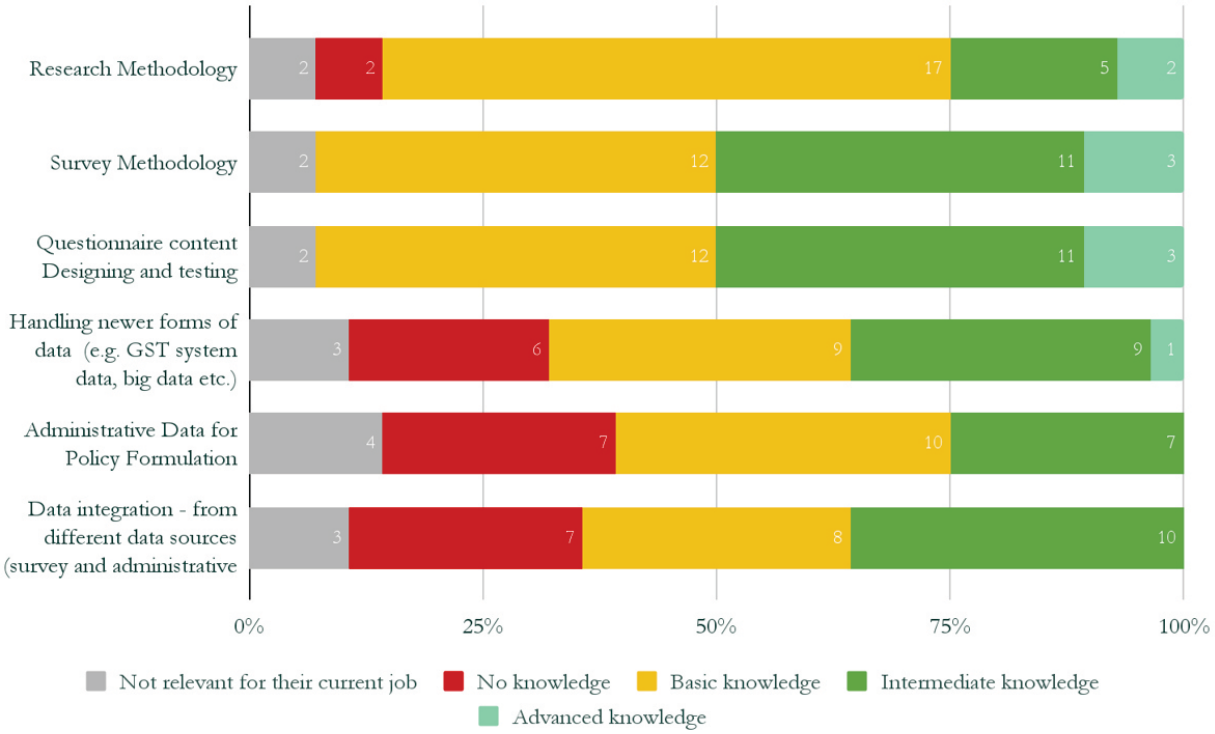


Figure 6.1: Supervisor's assessment of skill levels across Statistics: Data sources, collection and processing

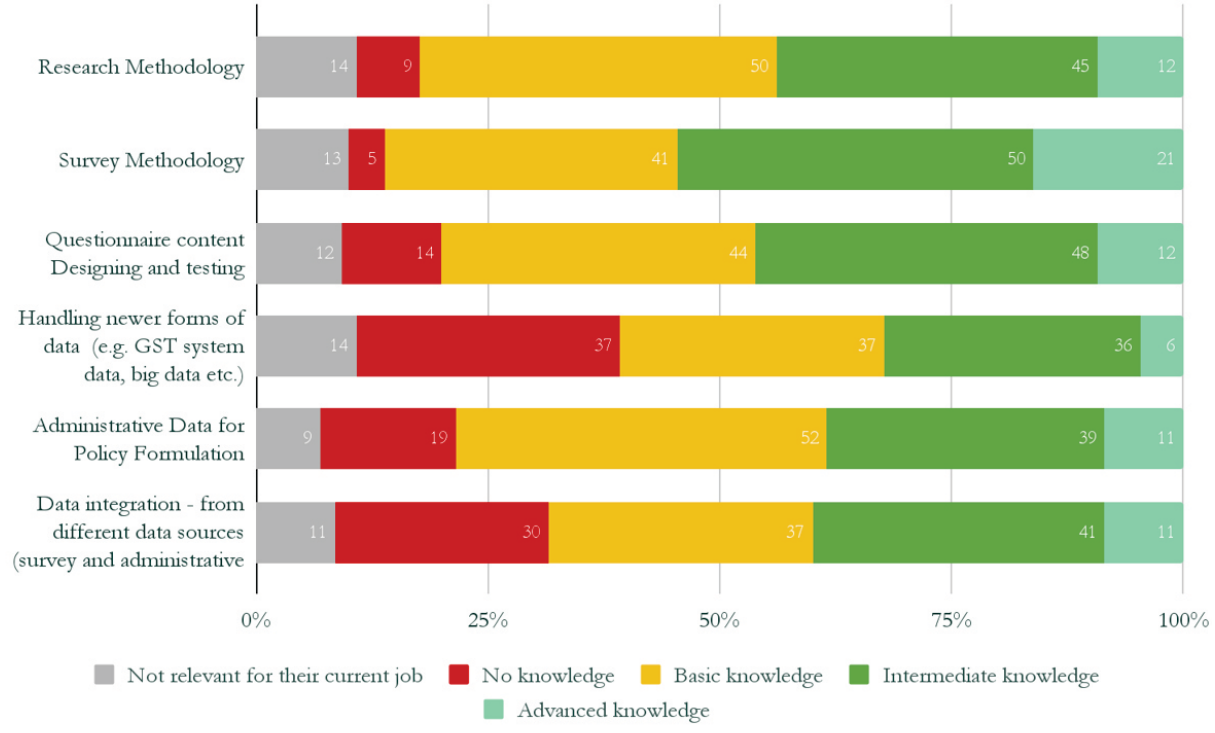


Figure 6.2: Individual's assessment of skill levels across Statistics: Data sources, collection and processing

Data analysis and presenting

Individuals acknowledged their limitations in interpreting large datasets and applying econometric models, emphasizing the need for advanced training in data visualization and analytics. Supervisors observed that while officers were competent in basic statistical tabulation, they lacked proficiency in more complex techniques such as predictive modeling and small area estimation. To bridge these gaps, training would focus on strengthening statistical modeling, geospatial analysis, and dynamic data visualization techniques, ultimately enhancing the quality of data reporting and decision-making.

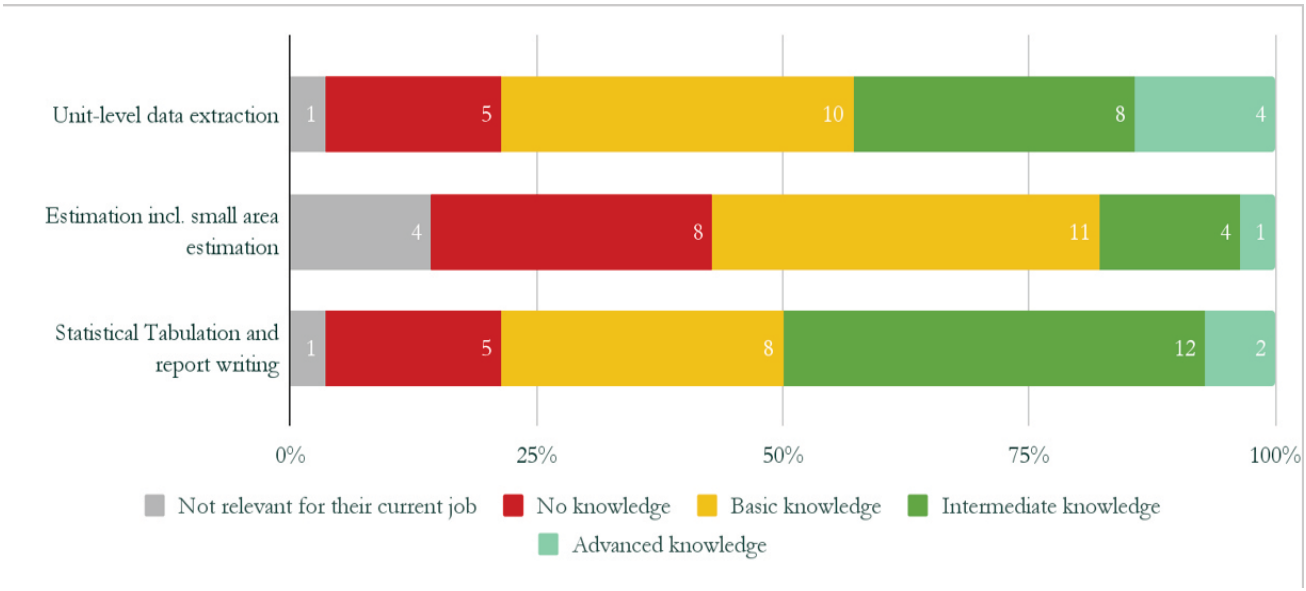


Figure 7.1: Supervisor's assessment of skill levels across Statistics: Data analysis and presenting

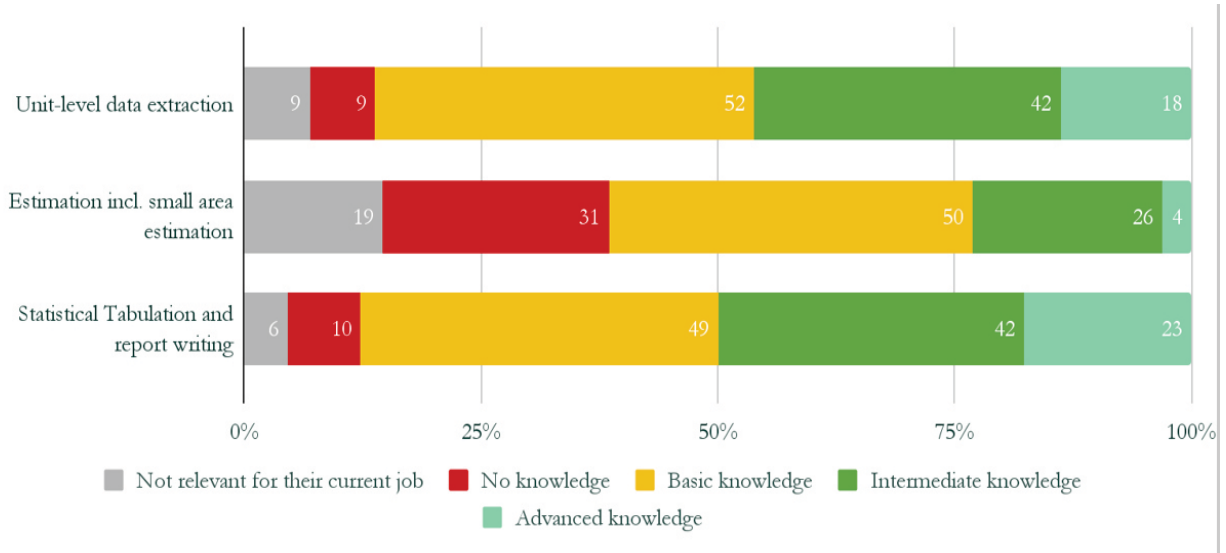


Figure 7.2: Individual's assessment of skill levels across Statistics: Data analysis and presenting

Macroeconomic Statistics

The assessment revealed that many officers lack familiarity with emerging economic indicators, such as the digital economy and environmental-economic accounting. Supervisors further observed gaps in knowledge related to macroeconomic indicators. To address these gaps, training programmes would focus on satellite accounts, and international economic measurement frameworks, ensuring officers have the necessary skills to analyze and interpret macroeconomic data effectively.

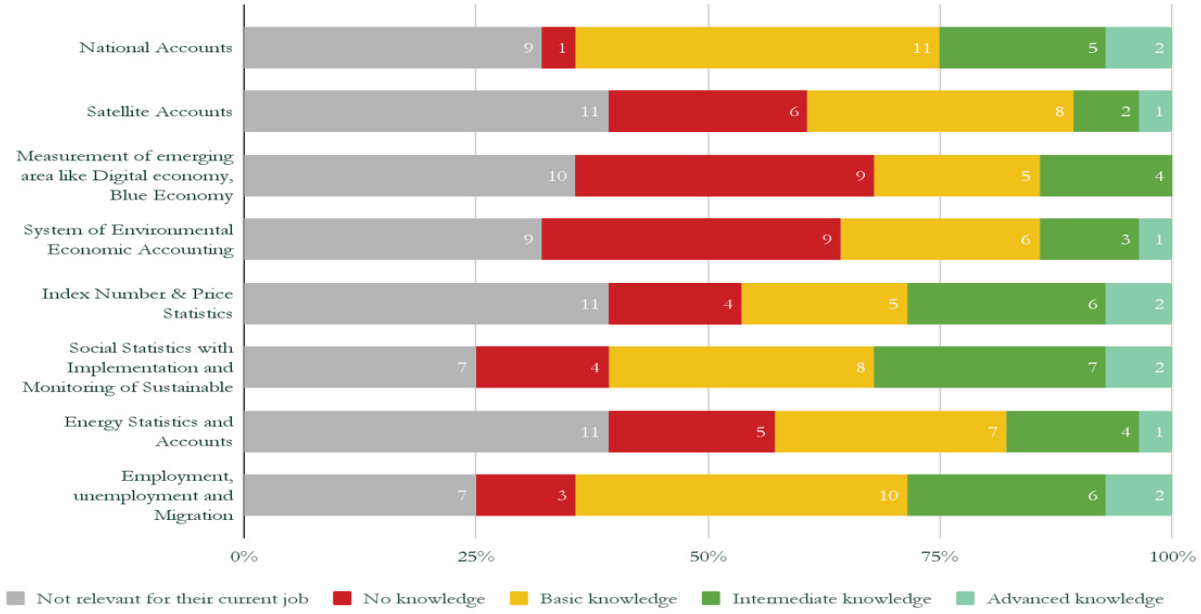


Figure 8.1: Supervisor's assessment of skill levels across Statistics: Macroeconomic Statistics

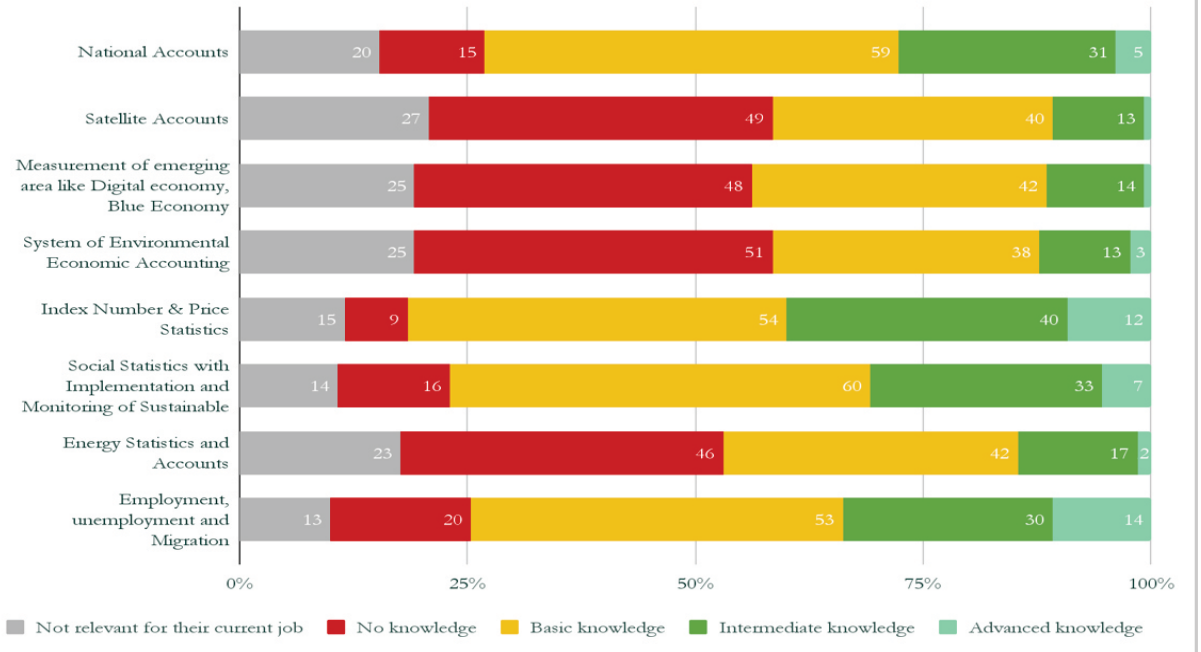


Figure 8.2: Individual's assessment of skill levels across Statistics: Macroeconomic Statistics

Cross-cutting Statistics

Many officers recognize the importance of cross-cutting themes such as gender statistics and sustainability-linked data analysis. However, their knowledge in these areas remains at a basic level. Supervisors noted that while officers are aware of global statistical frameworks, they lack practical exposure to global best practices in monitoring and evaluation. This highlights the need for greater exposure to global statistical standards and hands-on experience in evaluation techniques to enhance their capabilities.

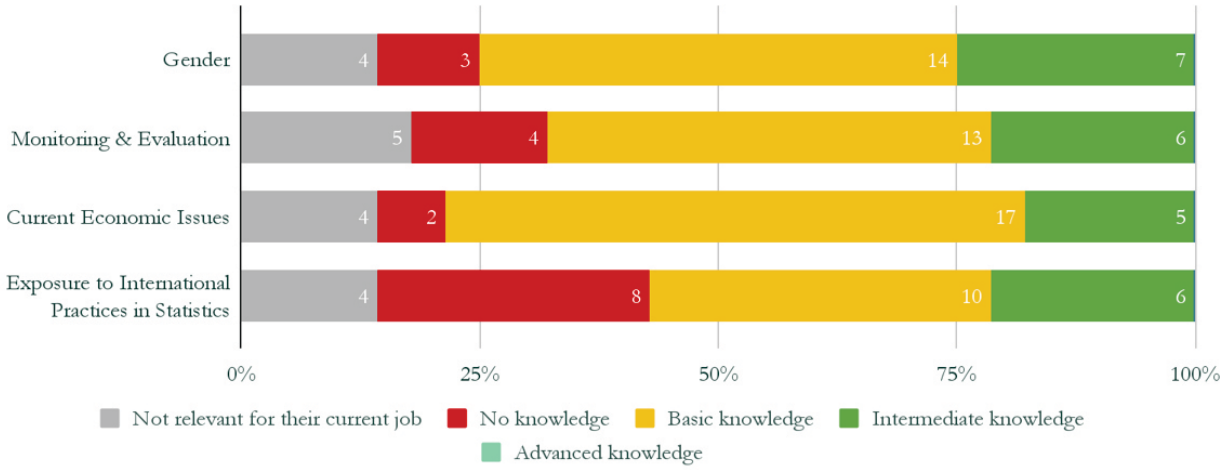


Figure 9.1: Supervisor's assessment of skill levels across Statistics: Cross-cutting Statistics

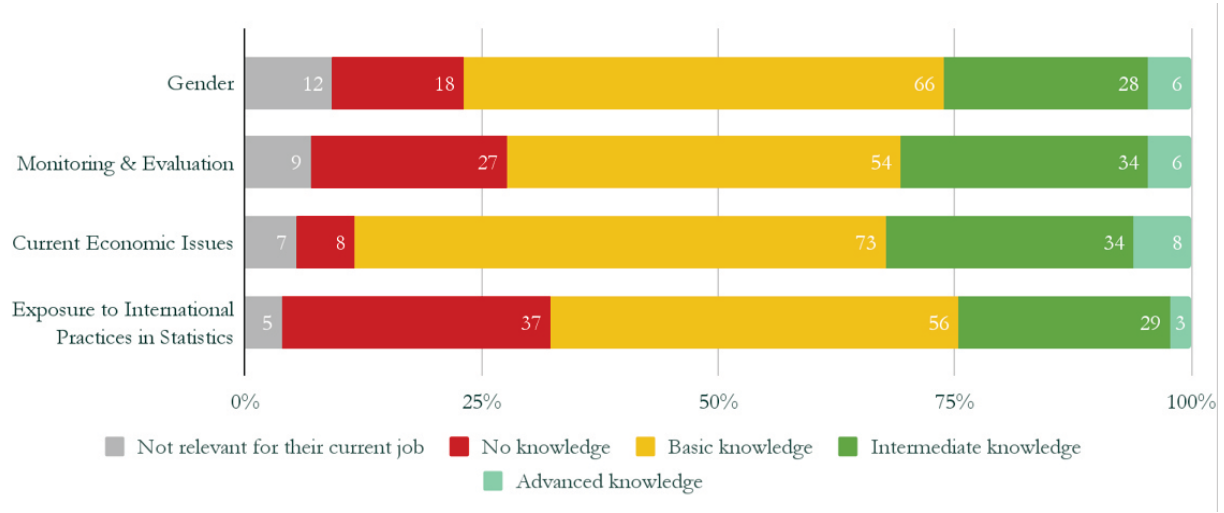


Figure 9.2: Individual's assessment of skill levels across Statistics: Cross-cutting Statistics

Information Technology (IT)

Officers exhibited intermediate proficiency in tools like R, Python, and SPSS but lacked advanced skills in big data analytics, artificial intelligence, and GIS. Database management and visualization tools were identified as critical areas for improvement.

Software skills

Individuals reported being comfortable with traditional data processing tools such as R, Python, and Excel but found big data handling, database management, and cloud computing challenging. Supervisors echoed this observation, noting that while officers had a working knowledge of R, Python, and Excel, they lacked proficiency in SQL, Power BI, and machine learning tools.

The key takeaway from these findings is the need for hands-on training in big data tools, SQL, and AI-driven statistical modeling. Strengthening these skills will enhance officers' ability to effectively manage and analyze complex datasets.

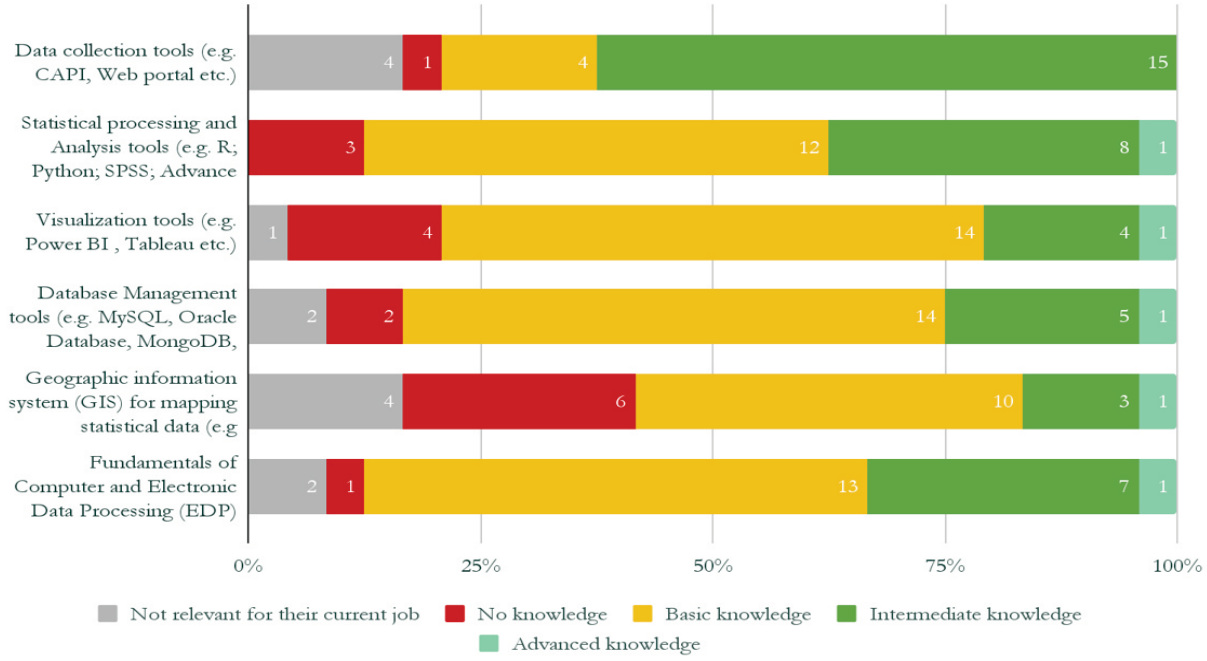


Figure 10.1: Supervisor's assessment of skill levels across IT: Software skills

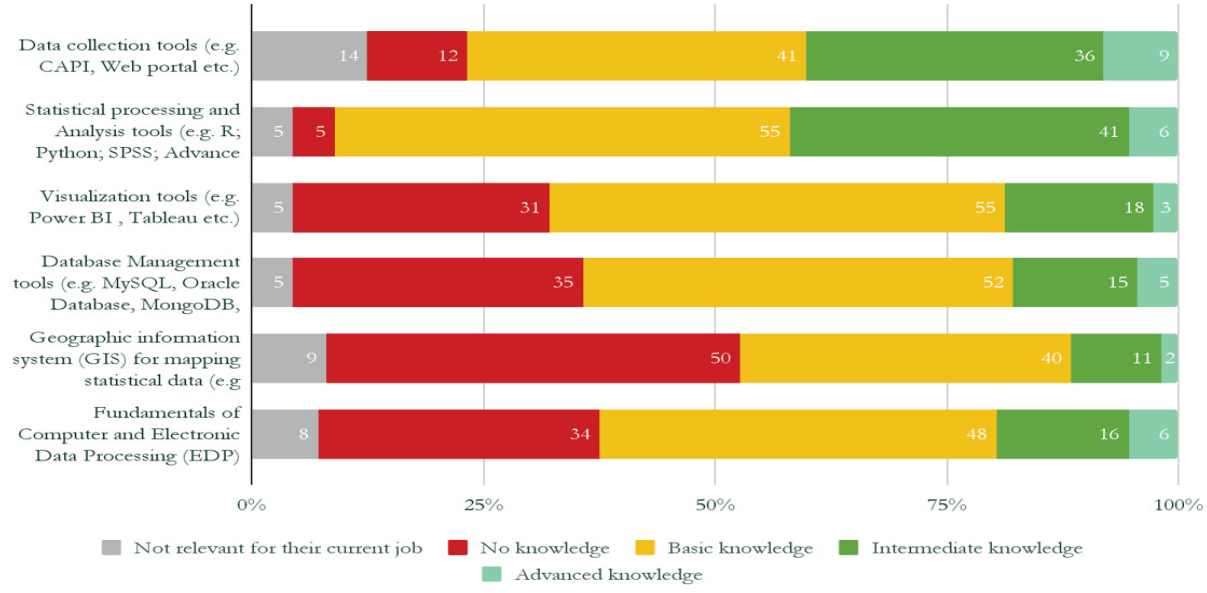


Figure 10.2: Individual's assessment of skill levels across IT: Software skills

Modernization and Digitalization

The self-assessment revealed that while individuals are interested in learning about automation, cybersecurity, and AI-driven analysis, most have little to no prior experience in these areas. Supervisors further noted that officers are not well-versed in emerging digital tools such as web scraping, automated data pipelines, and blockchain applications in statistics. Given these gaps, training programmes would focus on introducing automation tools like APIs and AI-assisted analytics, along with essential cyber risk mitigation techniques, to enhance digital proficiency and data security awareness.

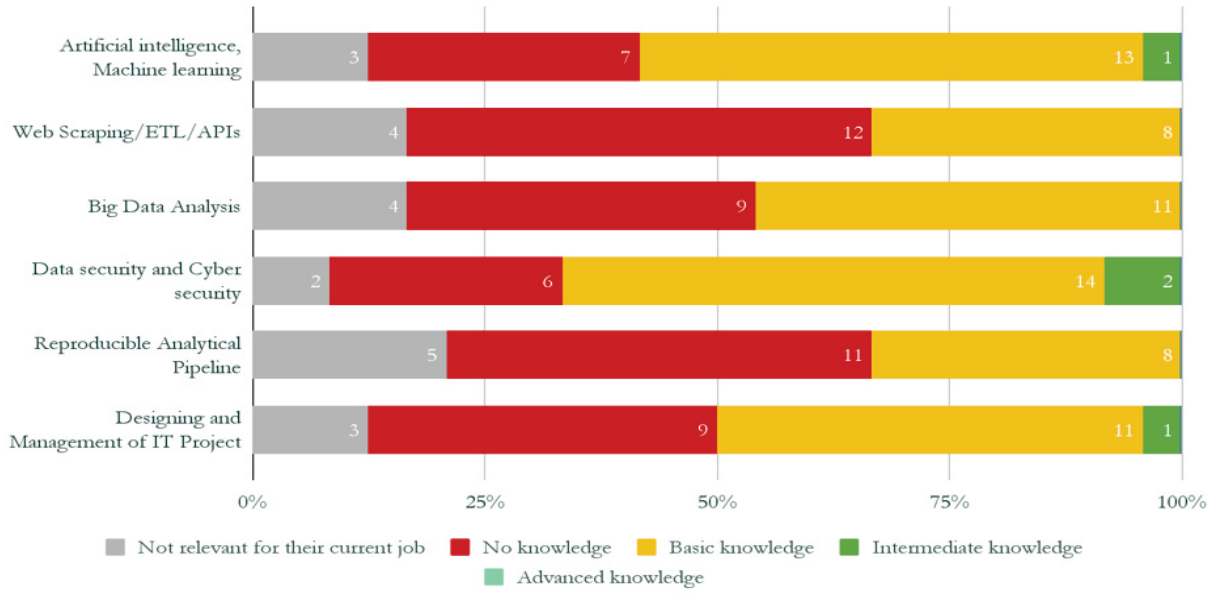


Figure 11.1: Supervisor's assessment of skill levels across IT: Modernization and Digitalization

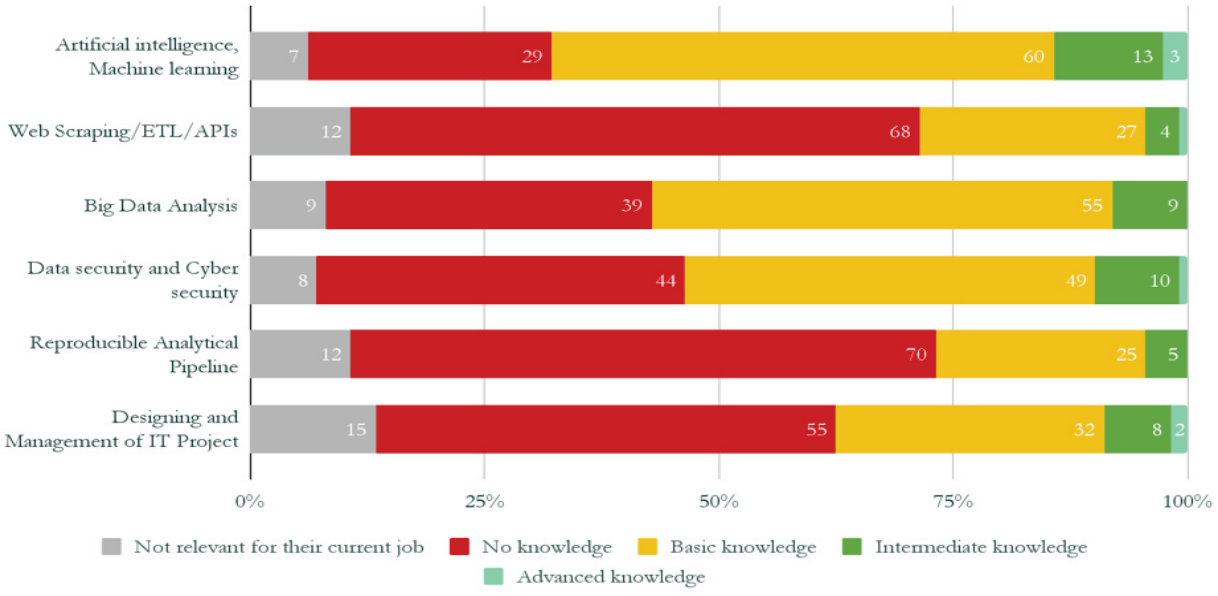


Figure 11.2: Individual's assessment of skill levels across IT: Modernization and Digitalization

Communication and Dissemination of Statistics

Many officers reported facing challenges in effectively communicating statistical information beyond traditional methods. They struggled with creating engaging infographics, adapting their writing for diverse audiences, and confidently handling media interactions. Supervisors recognized their proficiency in basic statistical storytelling but observed gaps in more advanced digital communication skills. They noted that officers lacked expertise in leveraging social media for outreach, crafting strategic messages for public awareness, and using digital tools to make data more accessible and engaging.

These findings highlight the need for focused training in visual storytelling, public communication strategies, and media engagement. Equipping officers with these skills will enhance their ability to present statistical insights in a more impactful manner, ensuring that data is not only accurate but also effectively communicated to policymakers, stakeholders, and the general public.

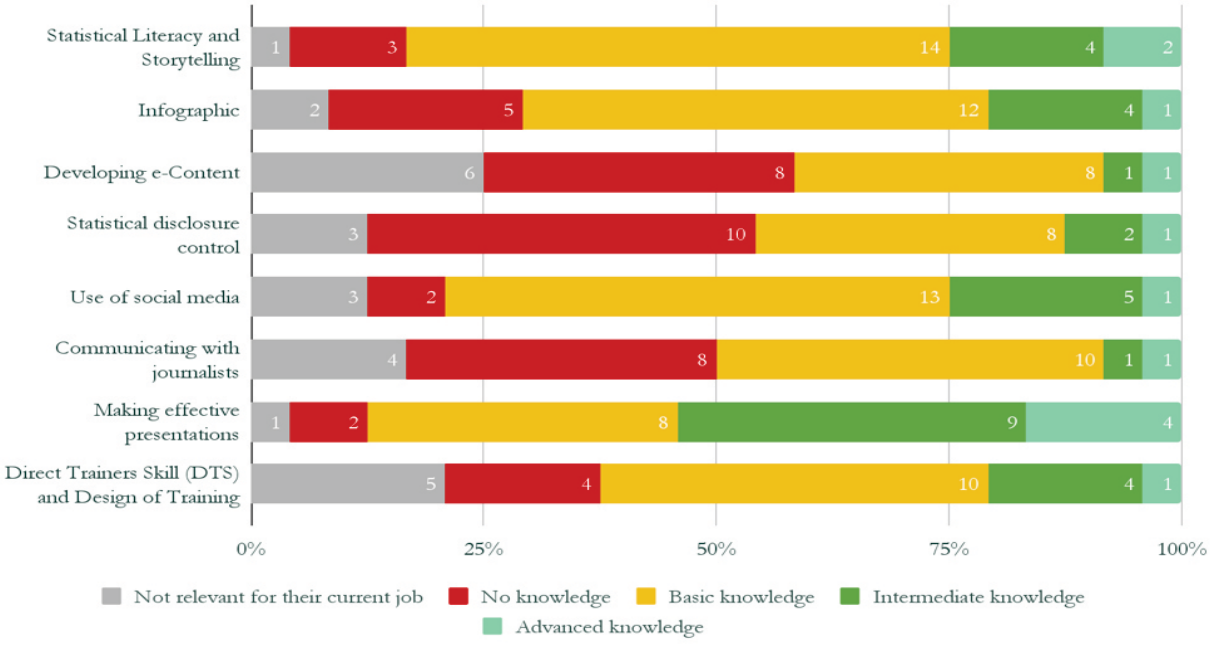


Figure 12.1: Supervisor's assessment of skill levels across Communication and dissemination of Statistics

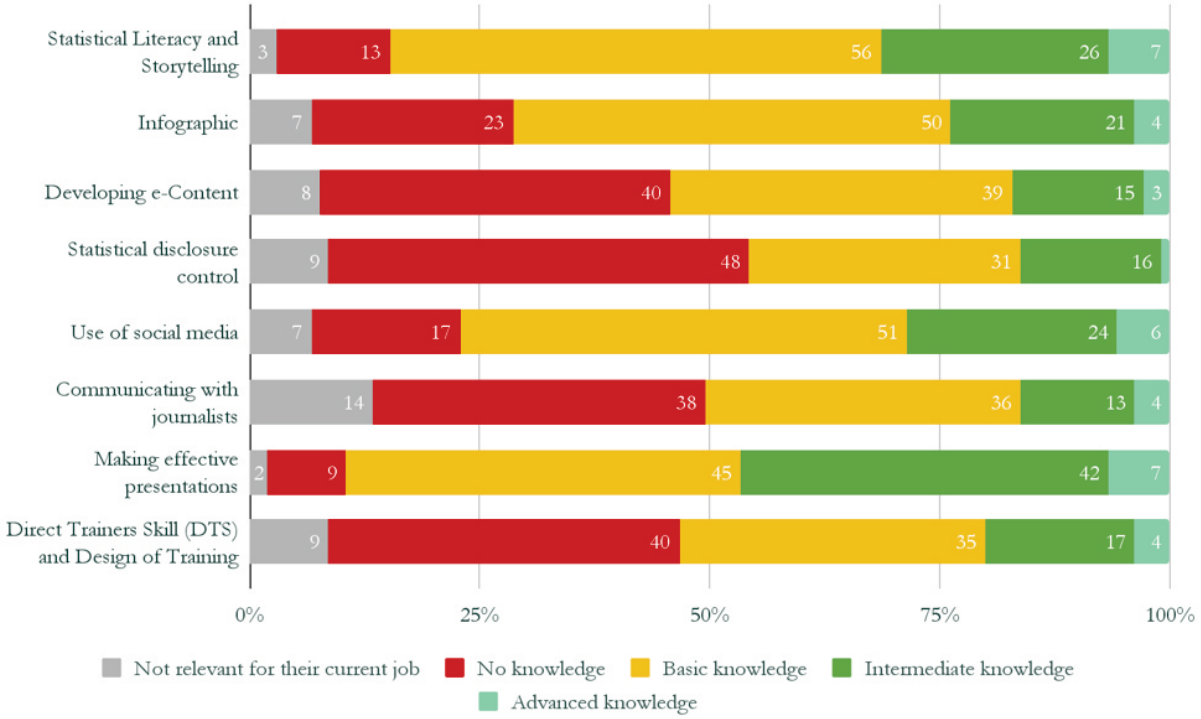


Figure 12.2: Individual's assessment of skill levels across Communication and dissemination of statistics

Administration and Finance

In the self-assessment, many officers acknowledged difficulties in key financial tasks such as budgeting, financial reporting, and administrative documentation. They expressed a need for better understanding and practical guidance in these areas.

Supervisors' assessments reinforced this finding, noting that officers had limited knowledge of government financial regulations, such as the General Financial Rules (GFR) and Delegation of Financial Power Rules (DFPR), as well as procurement processes. This lack of familiarity posed challenges in ensuring compliance and efficiency in financial management.

Given these gaps, a structured training programme focused on government financial management and public procurement rules is essential. Such a programme would enhance officers' ability to navigate financial procedures effectively, ensure regulatory compliance, and improve overall administrative efficiency.

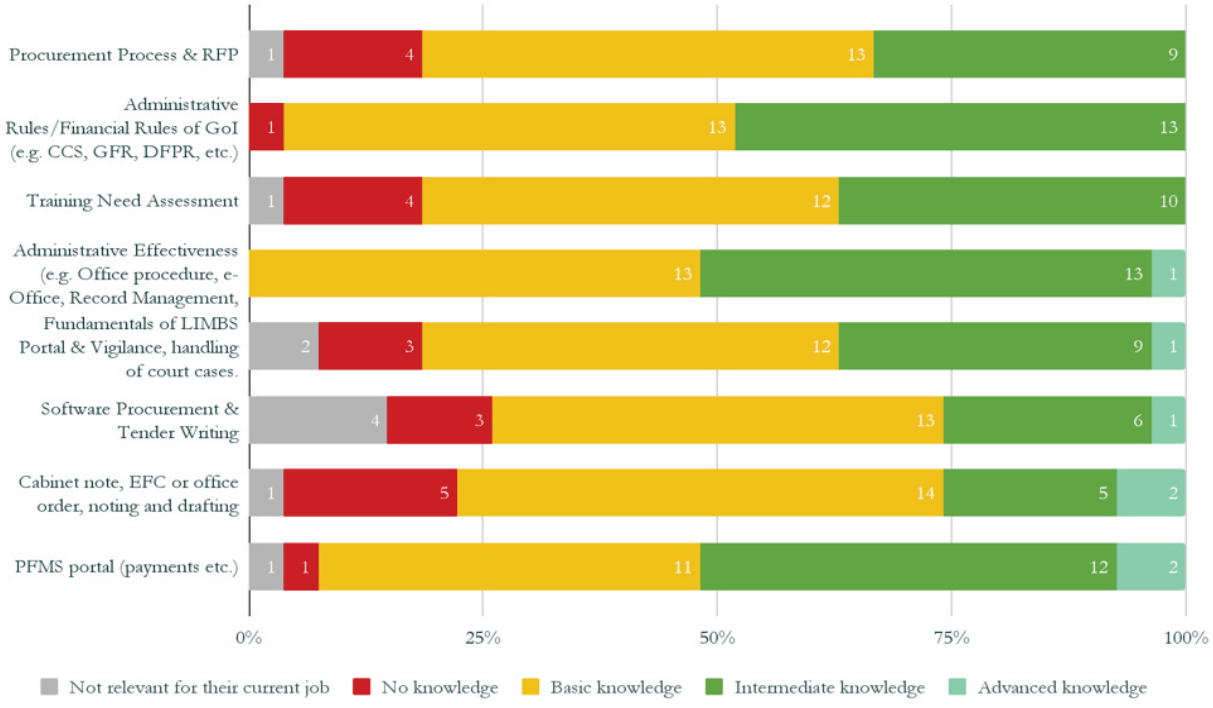


Figure 13.1: Supervisor's assessment of skill levels across Administration and finance

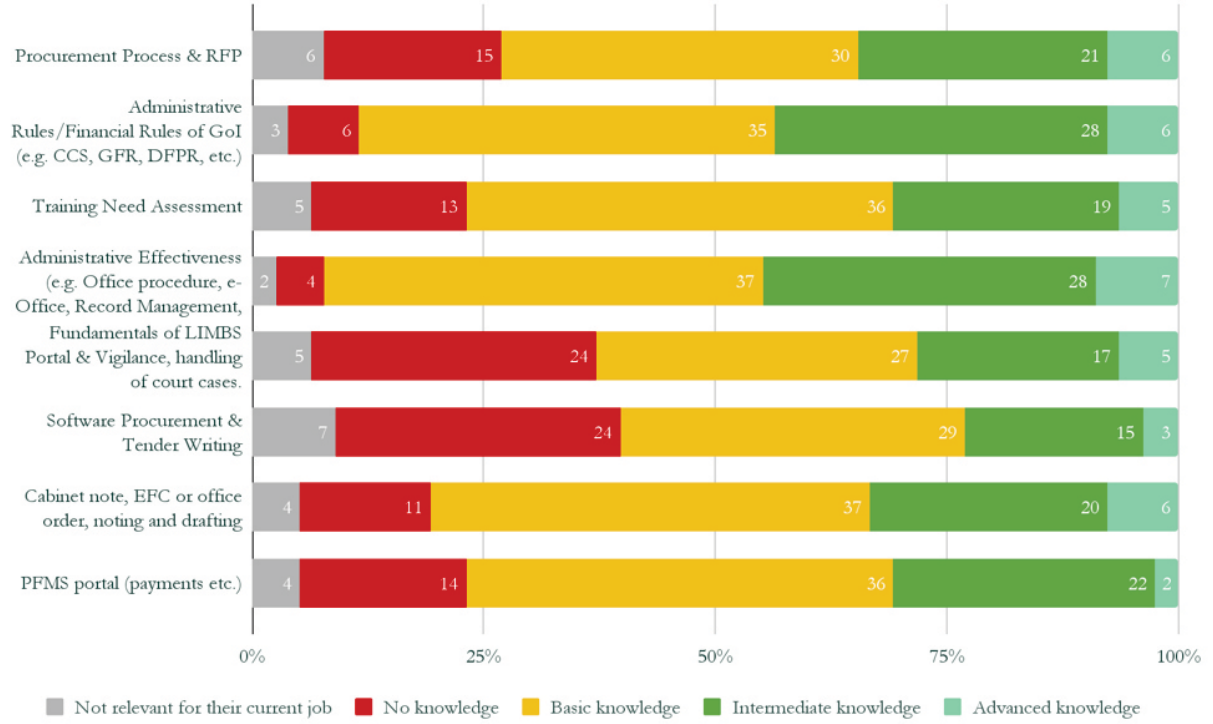


Figure 13.2: Individual's assessment of skill levels across Administration and Finance

Priority of Learning Needs

This section identifies key training priorities based on individual responses and incorporates supervisors' insights to refine and align training needs effectively.

Statistics

Data sources, collection and processing

Respondents expressed a strong demand for training in integrating diverse data sources to support evidence-based policymaking. Many officers highlighted the importance of big data processing, ranking it as a high-priority skill due to its increasing role in decision-making. Their responses indicate a clear interest in enhancing their ability to work with multiple data streams effectively. Supervisors echoed this need but placed even greater urgency on trainings in survey design, administrative data usage, and the integration of multiple data sources. They particularly emphasized the importance of equipping officers with skills to handle non-traditional datasets, such as GST data, census data fusion, and machine-readable administrative records. These datasets are becoming essential in modern governance, yet gaps remain in their effective utilization.

The key takeaway is that future training programmes would focus on advancing survey methodology, improving the handling of non-traditional datasets, and incorporating automation in data collection. Strengthening these areas will enhance the ability of officers to manage complex datasets and make more data-driven decisions.

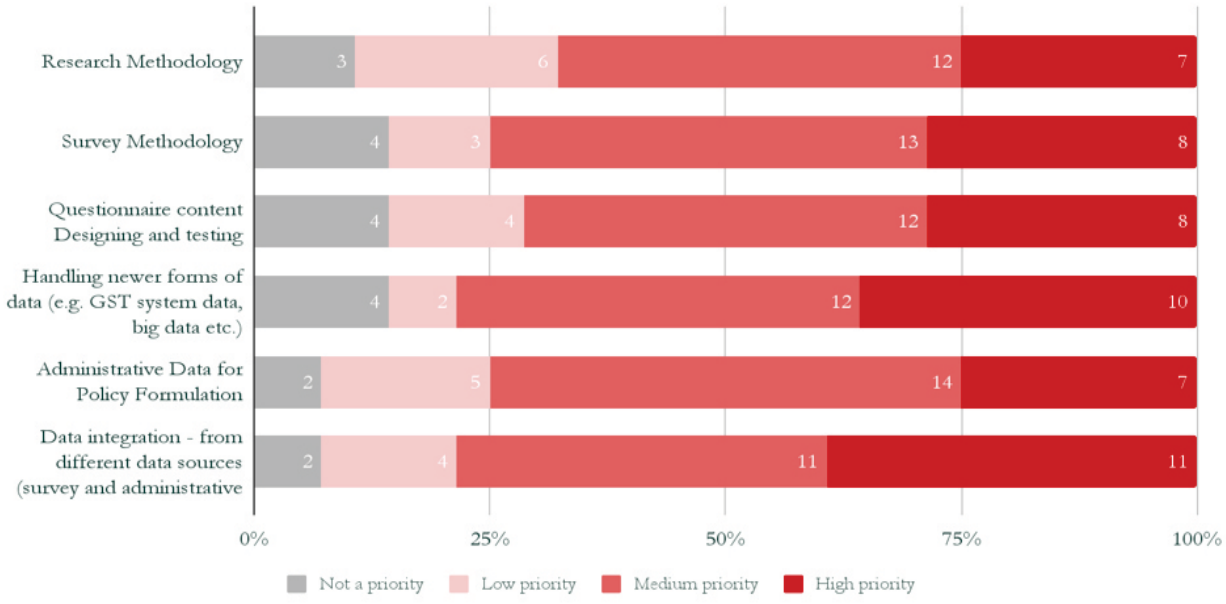


Figure 14.1: Supervisor's assessment of priority levels across Statistics: Data sources, collection & processing

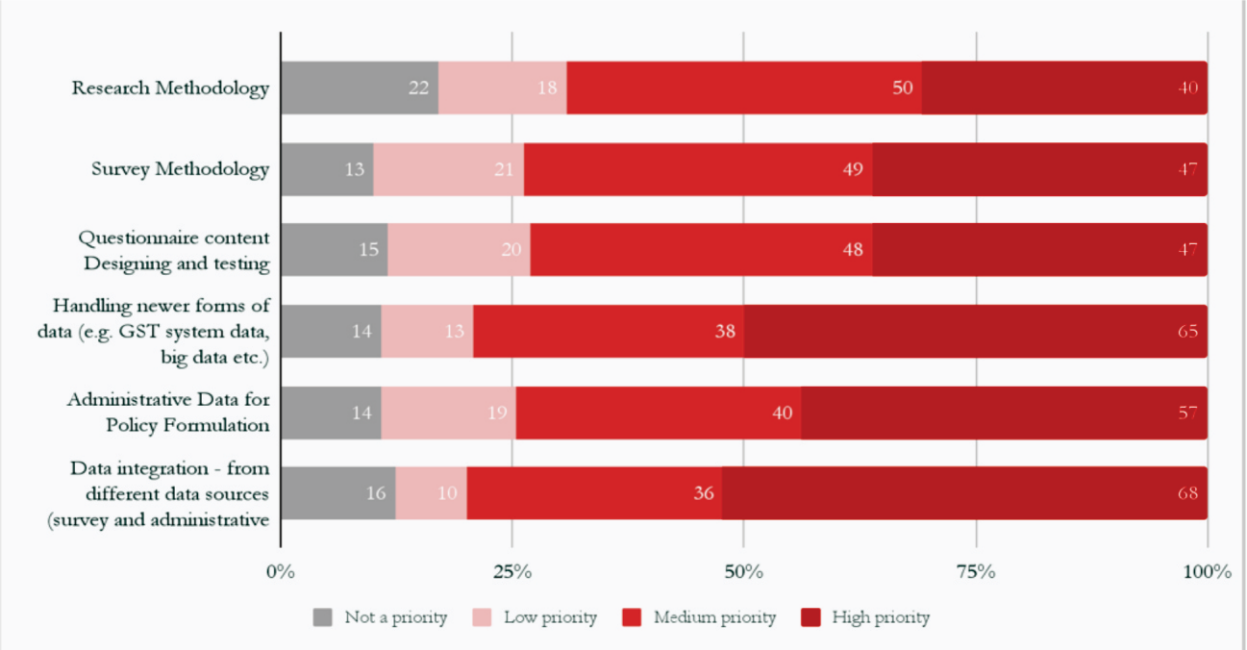


Figure 14.2: Individual's assessment of priority levels across Statistics: Data sources, collection & processing

Data analysis and presenting

Many officers highlighted the need for trainings in big data visualization, dashboard creation, and storytelling techniques to improve how they present data. They expressed a strong interest in making their insights more interactive and visually engaging. However, there was a noticeable gap in their familiarity with AI-driven statistical analysis tools, suggesting the need for exposure to more advanced technologies in data analytics.

Supervisors, on the other hand, placed a high priority on strengthening officers' skills in advanced statistical tabulation and inferential analysis. They also emphasized the growing importance of geospatial analysis, real-time economic forecasting, and scenario modeling, as these skills are becoming critical for data-driven decision-making in policy planning and economic assessments.

Overall, the findings indicate a strong need for targeted training programmes that enhance interactive data visualization, econometric modeling, and the use of automated analytical tools. Addressing these gaps will help officers process, analyze, and present data more effectively, ultimately improving their ability to support evidence-based decision-making.

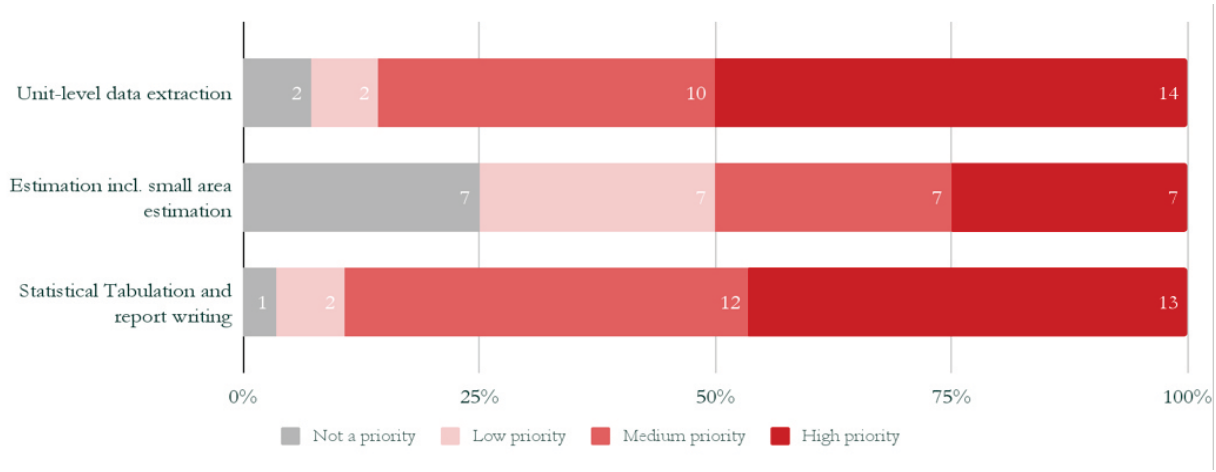


Figure 15.1: Supervisor's assessment of priority levels across Statistics: Data analysis and presenting

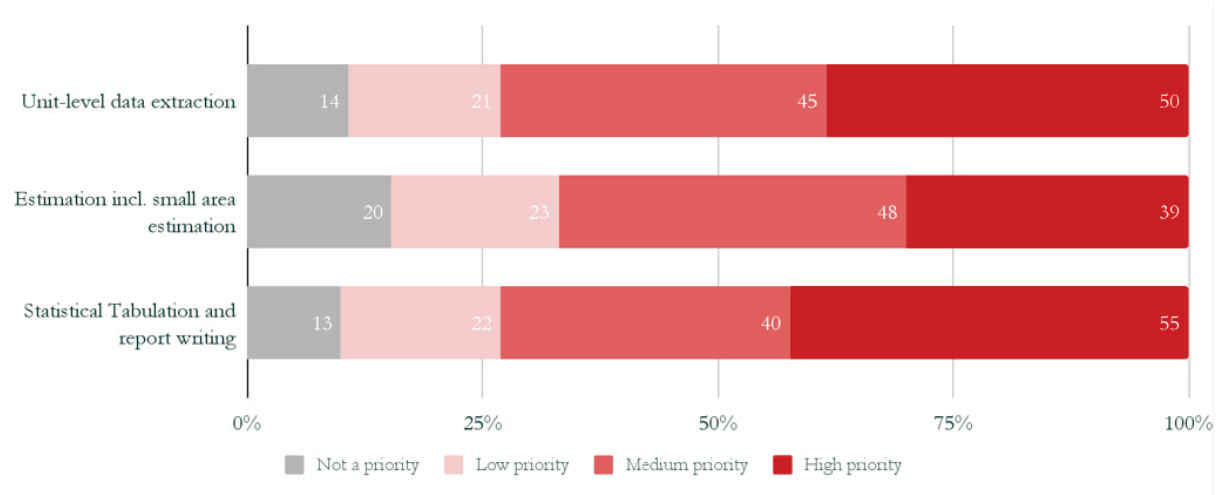


Figure 15.2: Individual's assessment of priority levels across Statistics: Data analysis and presenting

Macroeconomic Statistics

The assessment revealed key insights into officers' proficiency and training needs in macroeconomic analysis. From the individual responses, many officers rated basic knowledge in national accounts and a high priority, indicating a lack of confidence in their current macroeconomic skills. There was also a strong interest in understanding global economic frameworks, such as those used by institutions like the IMF and World Bank, suggesting a need for broader exposure to global economic trends.

Supervisors, on the other hand, identified more specific gaps. They highlighted the need for advanced training in GDP calculation, trade balance statistics, and macroeconomic forecasting models, marking these areas as high priority. A major concern was the limited ability of officers to interpret macroeconomic indicators and align them with policy trends, which is crucial for effective decision-making and governance.

The key takeaway from these findings is that training programmes would prioritize macroeconomic forecasting, the interpretation of real-time economic indicators, and a deeper understanding of international statistical frameworks. Strengthening these areas will help bridge the identified skill gaps and equip officers with the necessary expertise to engage with complex economic data and policy development more effectively.

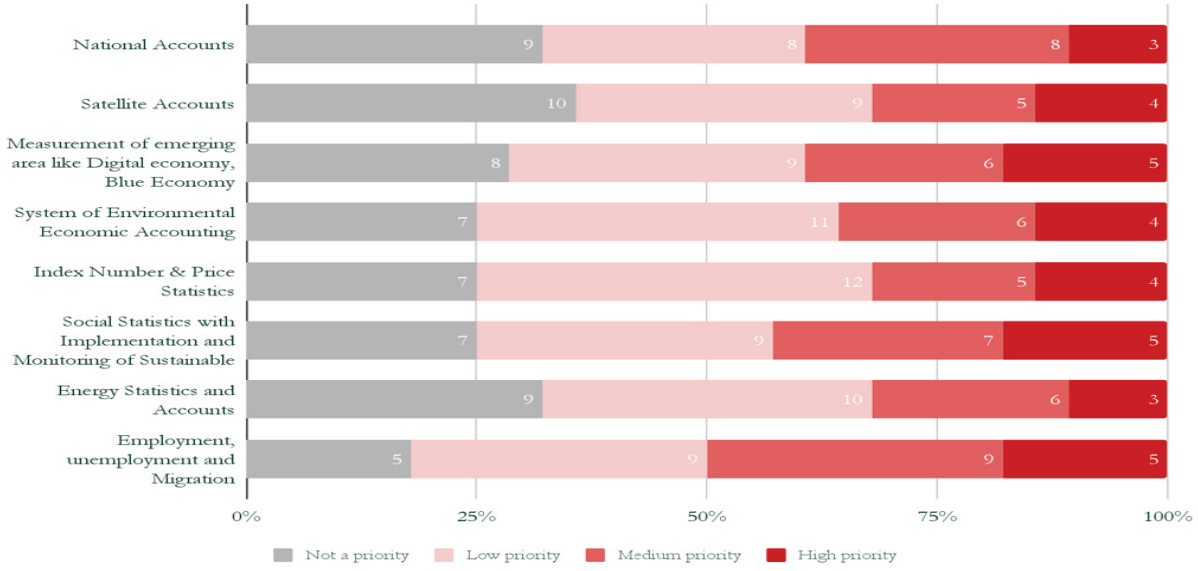


Figure 16.1: Supervisor's assessment of priority levels across Statistics: Macroeconomic Statistics

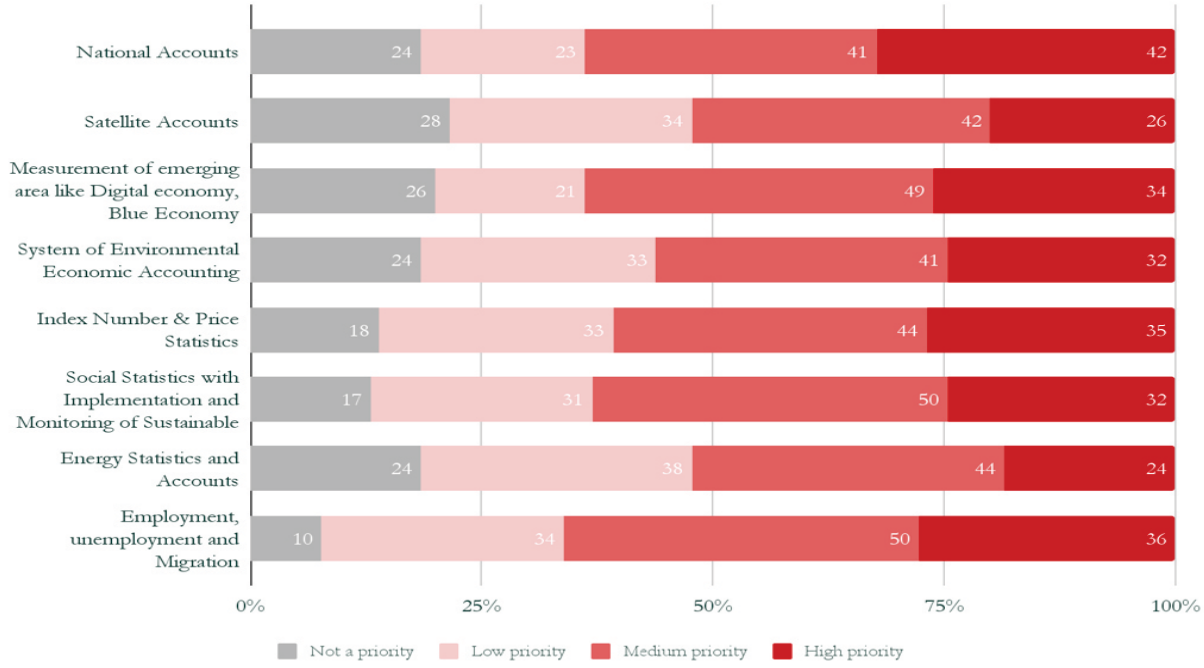
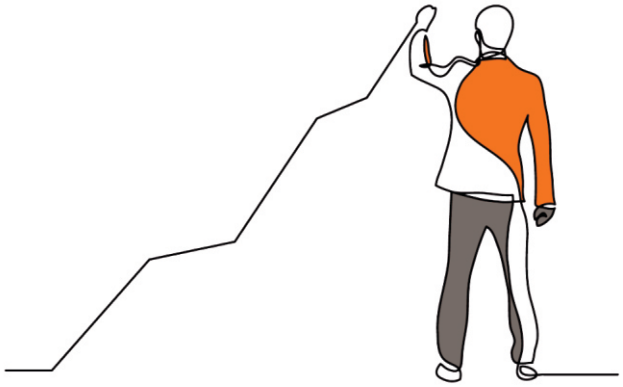


Figure 16.2: Individual's assessment of priority levels across Statistics: Macroeconomic Statistics



Cross-cutting Statistics

Respondents displayed a strong interest in expanding their expertise in key statistical areas, particularly gender-disaggregated data analysis, Sustainable Development Goal (SDG) tracking, and the integration of multiple data sources. However, many reported lower confidence in handling emerging statistical domains such as sustainability accounting, indicating a need for targeted capacity building in these areas.

Supervisors echoed these observations, identifying training in Gender Statistics, Monitoring and Evaluation and Environmental Statistics as high-priority areas. They also emphasized the importance of exposure to international statistical methods to enhance cross-cutting expertise and align with global best practices.

These findings highlight the need for a structured training approach that focuses on strengthening skills in global statistical methodologies, SDG-related data handling, and evaluation techniques. By addressing these gaps, training programmes can ensure that officials are well-equipped to manage complex data systems and contribute effectively to policy and decision-making processes.

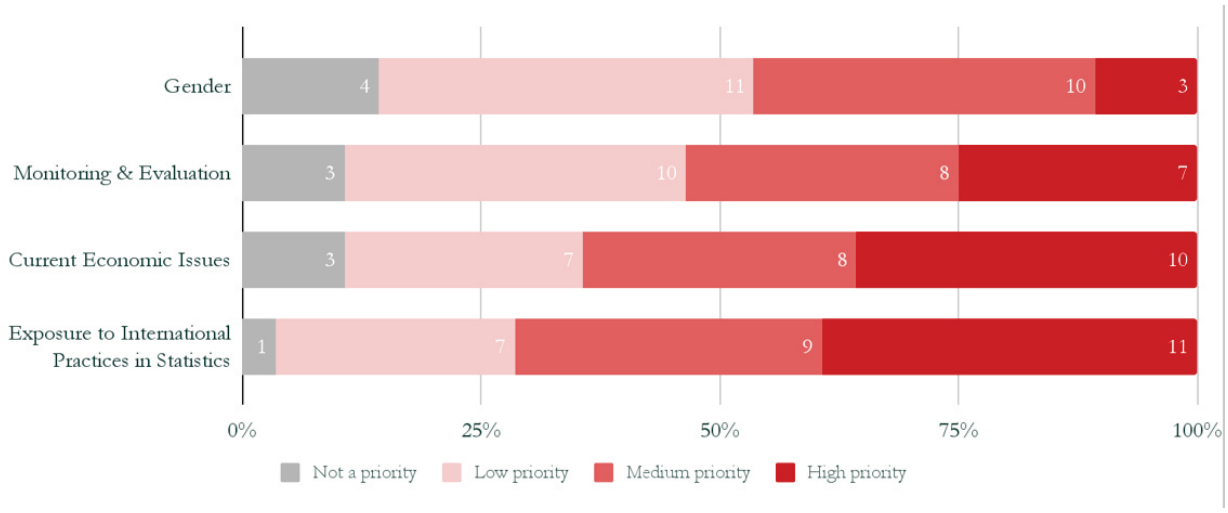


Figure 17.1: Supervisor's assessment of priority levels across Statistics: Cross-cutting Statistics

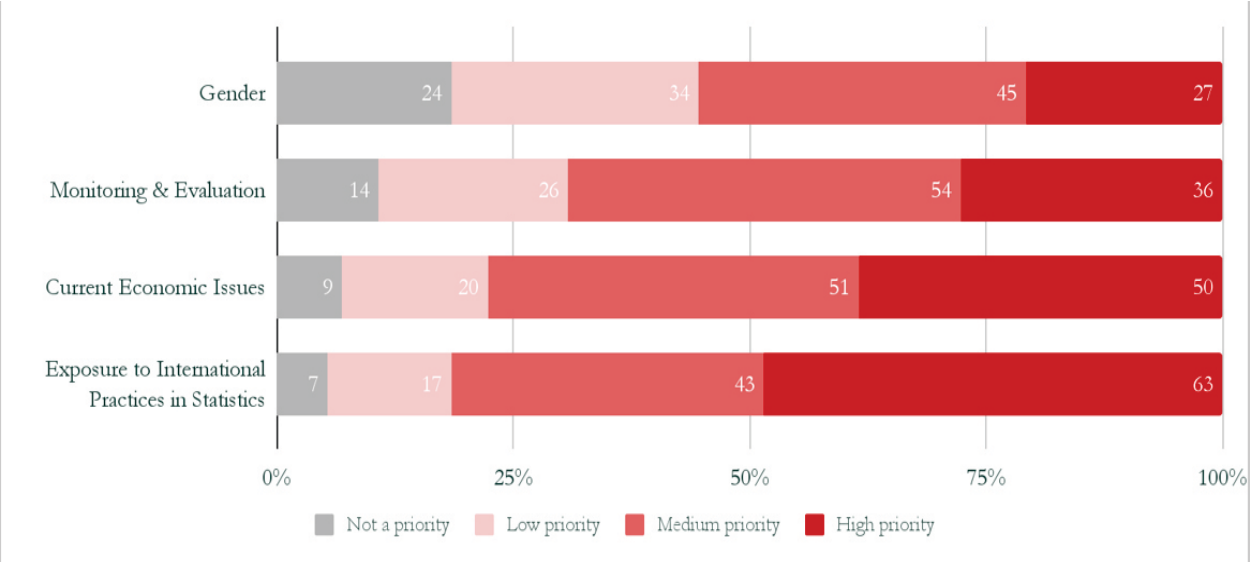


Figure 17.2: Individual's assessment of priority levels across Statistics: Cross-cutting Statistics

Information Technology (IT)

Software skills

Respondents identified key areas where they sought to improve their technical skills, with a strong emphasis on GIS tools, SQL databases, and R for predictive modeling. Many also expressed a growing interest in coding workshops, particularly for automation and AI-based analytics, reflecting their recognition of the increasing role of technology in data-driven decision-making.

Supervisors, however, had slightly different concerns. They rated training in big data tools such as Hadoop and Spark as a high priority, along with SQL for managing large datasets and automation using Python. A major concern highlighted by supervisors was the officers' difficulty to effectively use visualization tools like Tableau and Power BI, which are essential for presenting insights in a clear and impactful manner.

These findings suggest a clear need for structured training programmes focused on AI-based analytics, data engineering, and interactive dashboards. Addressing both individual aspirations and supervisor expectations will help bridge existing skill gaps and equip officers with the technical capabilities needed to work efficiently with modern data systems.

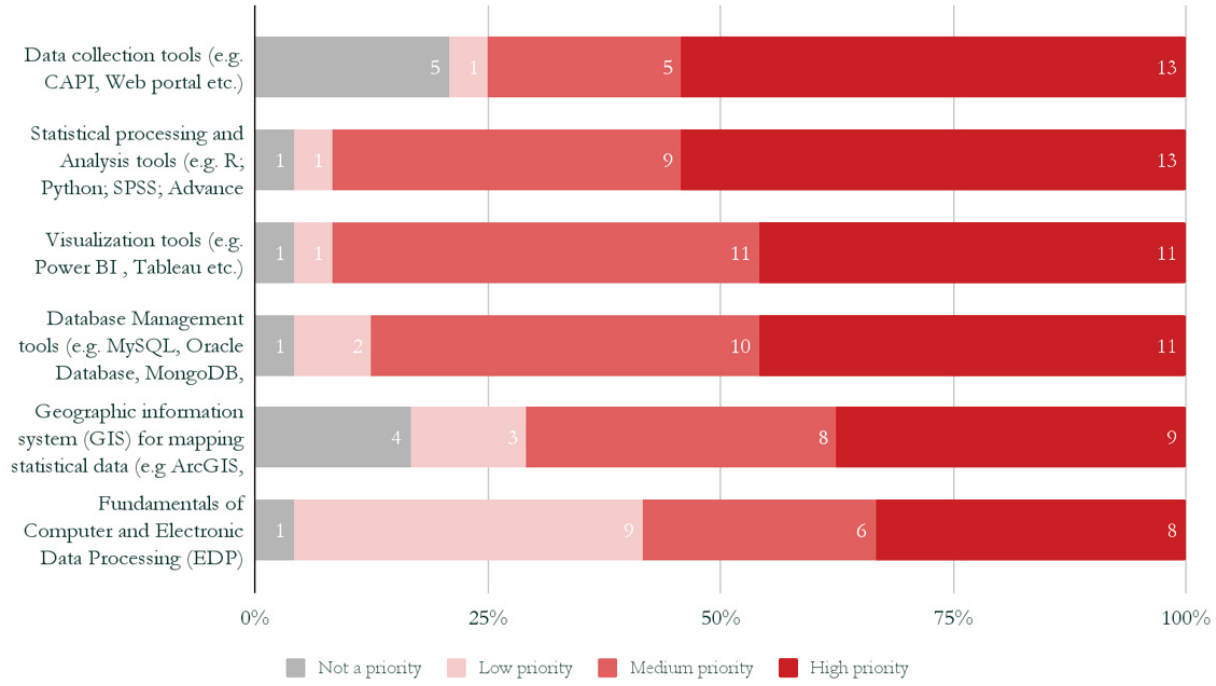


Figure 18.1: Supervisor's assessment of priority levels across IT: Software skills

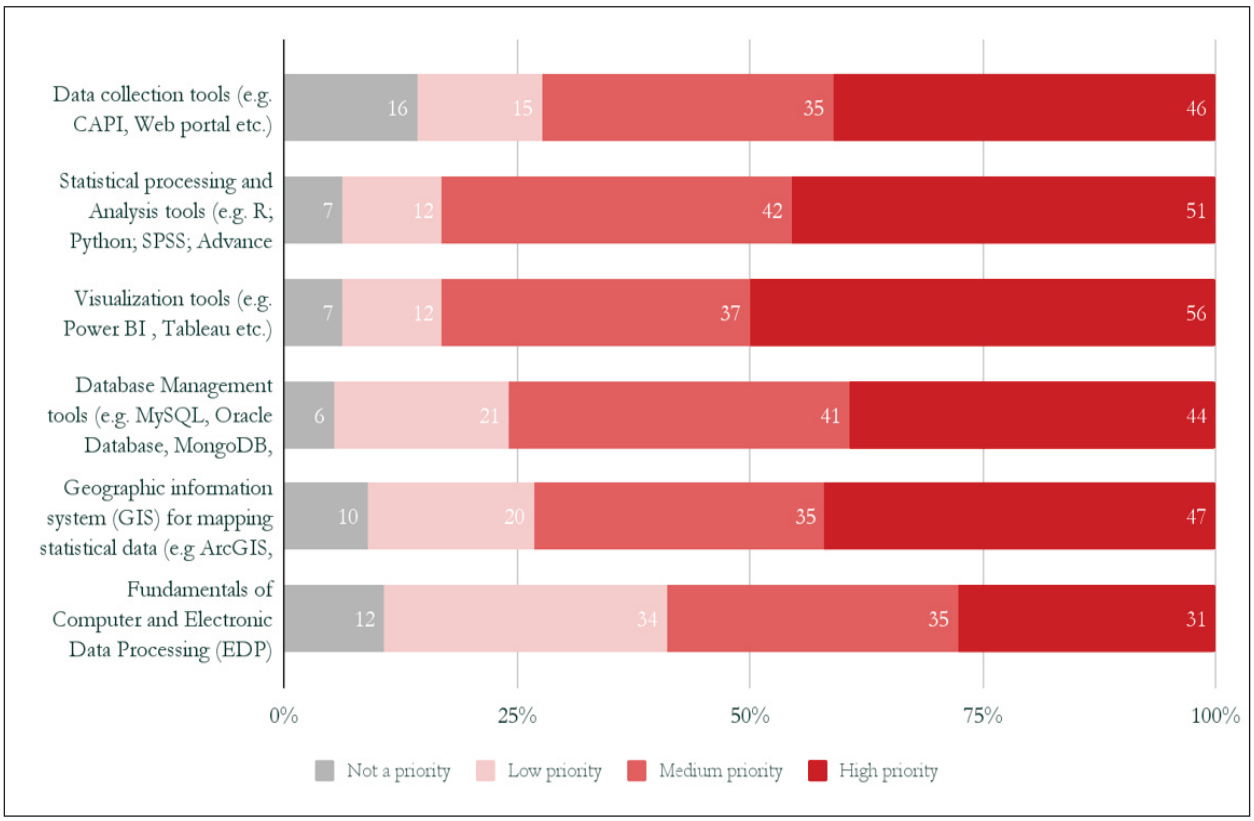


Figure 18.2: Individual's assessment of priority levels across IT: Software skills

Modernization and Digitalization

The assessment revealed key differences between individual self-assessments and supervisor evaluations regarding technical skills. Officers expressed a strong interest in cybersecurity awareness, machine learning applications, and AI-driven policy recommendations, indicating enthusiasm for emerging technologies. However, there was a noticeable gap in understanding cloud data management, suggesting the need for further capacity-building in this area.

Supervisors, on the other hand, highlighted an urgent need for training in web scraping, ETL (Extract, Transform, Load), and API integration to support automated data pipelines. They also rated big data processing and cloud computing as high-priority areas, emphasizing the growing demand for expertise in handling large-scale datasets efficiently.

The findings suggest that officers require structured training in AI-assisted statistical modeling, cybersecurity risks, and API-driven data modernization. Addressing these gaps will enhance their ability to manage and analyze data effectively, ensuring they are well-equipped for evolving technological demands in governance and policy implementation.

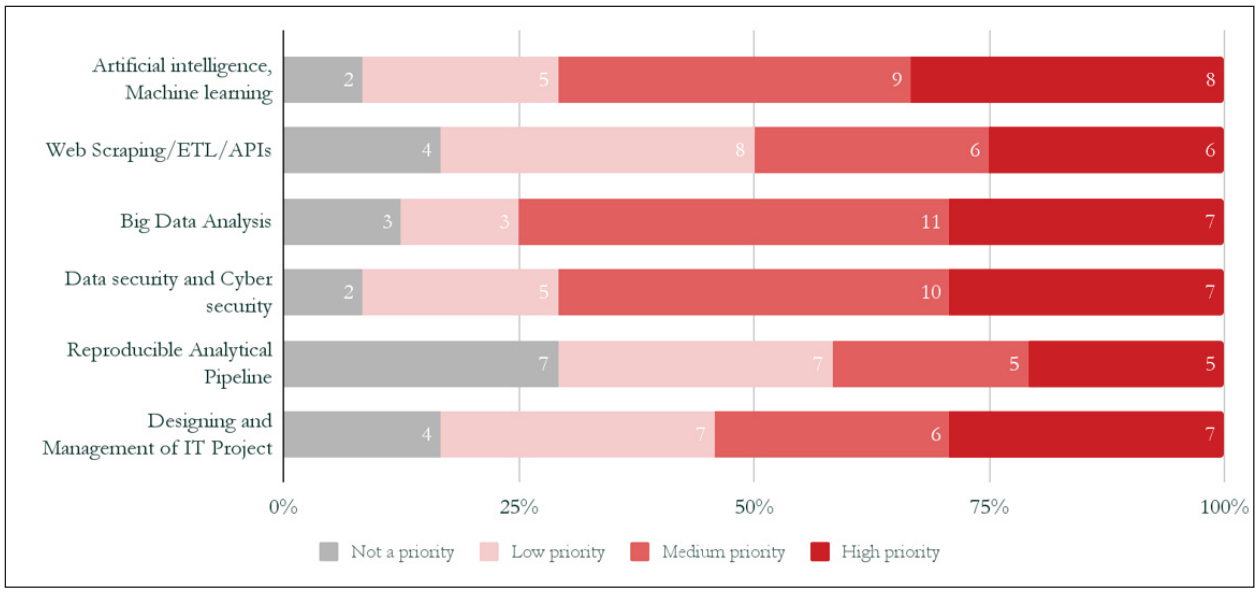


Figure 19.1: Supervisor's assessment of priority levels across IT: Modernization and digitalization

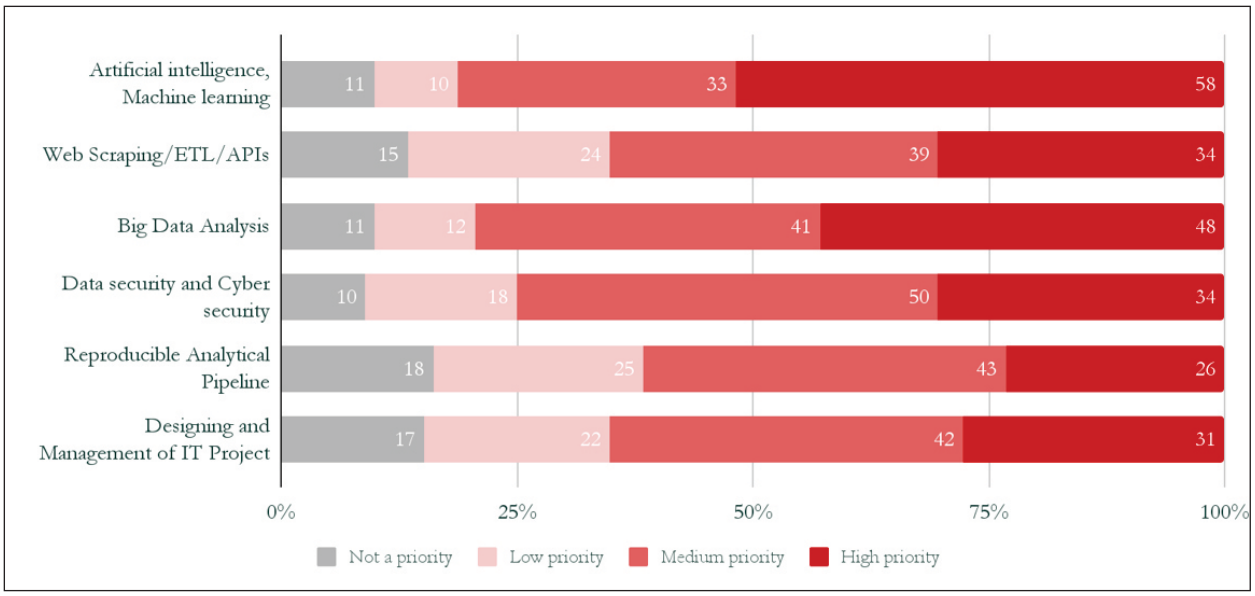


Figure 19.2: Individual's assessment of priority levels across IT: Modernization and digitalization

Communication and Dissemination of Statistics

Respondents highlighted the need for strategic training in effectively presenting statistical information. Many officers were strongly interested in learning infographic design, creating interactive reports, and improving social media communication to enhance policy awareness. However, a noticeable gap was observed in their confidence when drafting reports specifically for policymakers and journalists, indicating a need for structured support.

Supervisors reinforced these concerns, emphasizing the urgency of training in storytelling techniques for statistical communication. They rated media handling, public engagement, and digital outreach as high-priority skills that require immediate attention to ensure that data-driven insights are communicated clearly and effectively to a wider audience.

Given these findings, it is essential to focus training efforts on visual storytelling, policy communication, and media interaction skills. Strengthening these capabilities will help officers translate complex statistical data into compelling narratives, making information more accessible and impactful for policymakers, journalists, and the public.

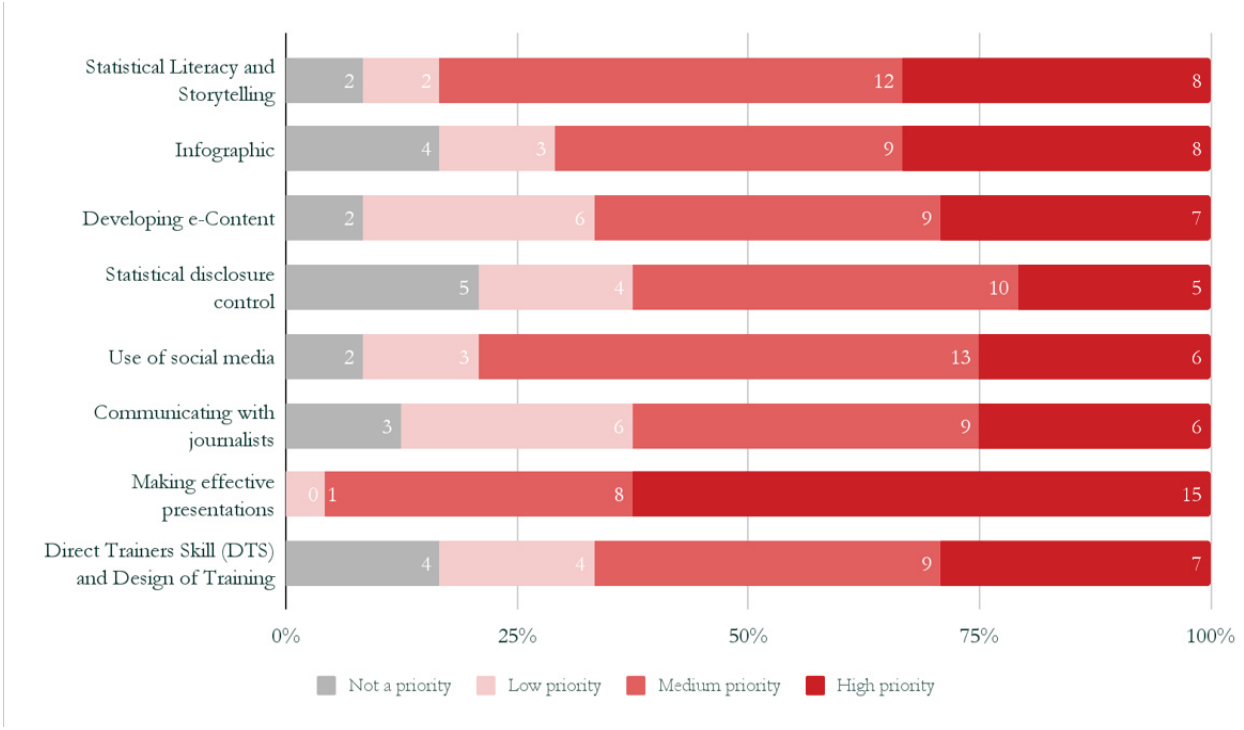


Figure 20.1: Supervisor's assessment of priority levels across Communication and dissemination of Statistics

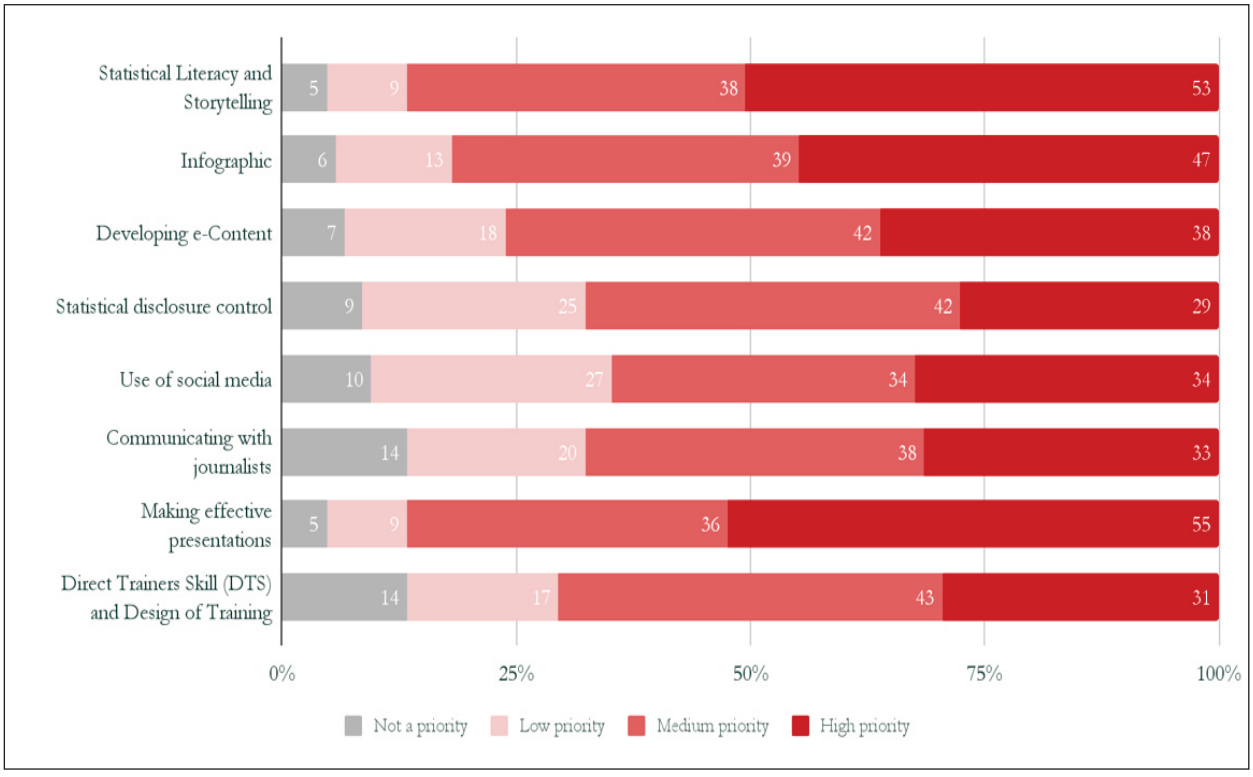


Figure 20.2: Individual's assessment of priority levels across Communication and dissemination of Statistics

Administration and Finance

In the area of procurement and financial management, individual officers and supervisors highlighted key training needs, though their perspectives varied slightly. Many officers reported difficulty with understanding financial rules and compliance mechanisms. They identified audit procedures, grant management, and procurement evaluation as high-priority areas for training, indicating a need for greater clarity and guidance in these domains.

Supervisors reinforced these findings, emphasizing a strong demand for training in procurement rules, budgeting, and contract management. They also rated financial governance topics, such as the Public Financial Management System (PFMS) and public expenditure tracking, as critical areas requiring immediate attention.

The overall takeaway is clear—officers need structured, hands-on training to strengthen their understanding of financial governance, procurement policies, and audit procedures. Addressing these gaps will help improve compliance, efficiency, and transparency in financial management processes.

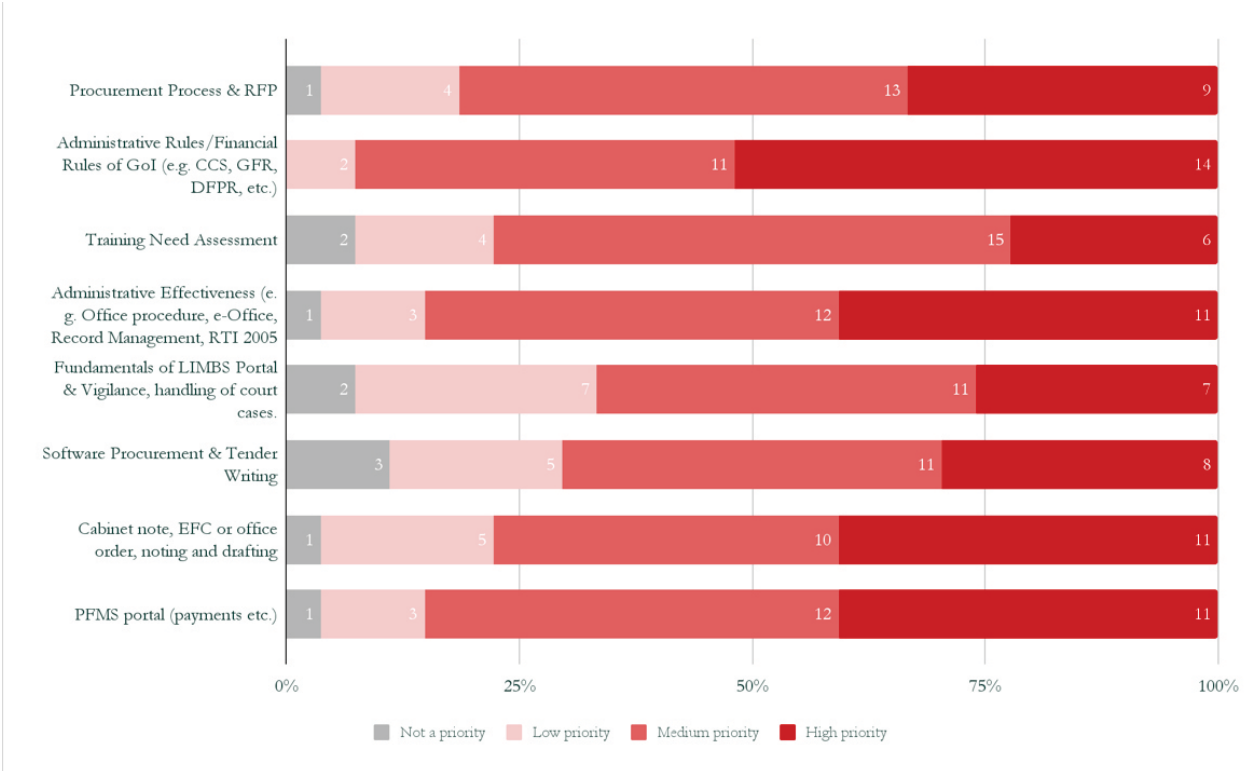


Figure 21.1: Supervisor's assessment of priority levels across Administration and Finance

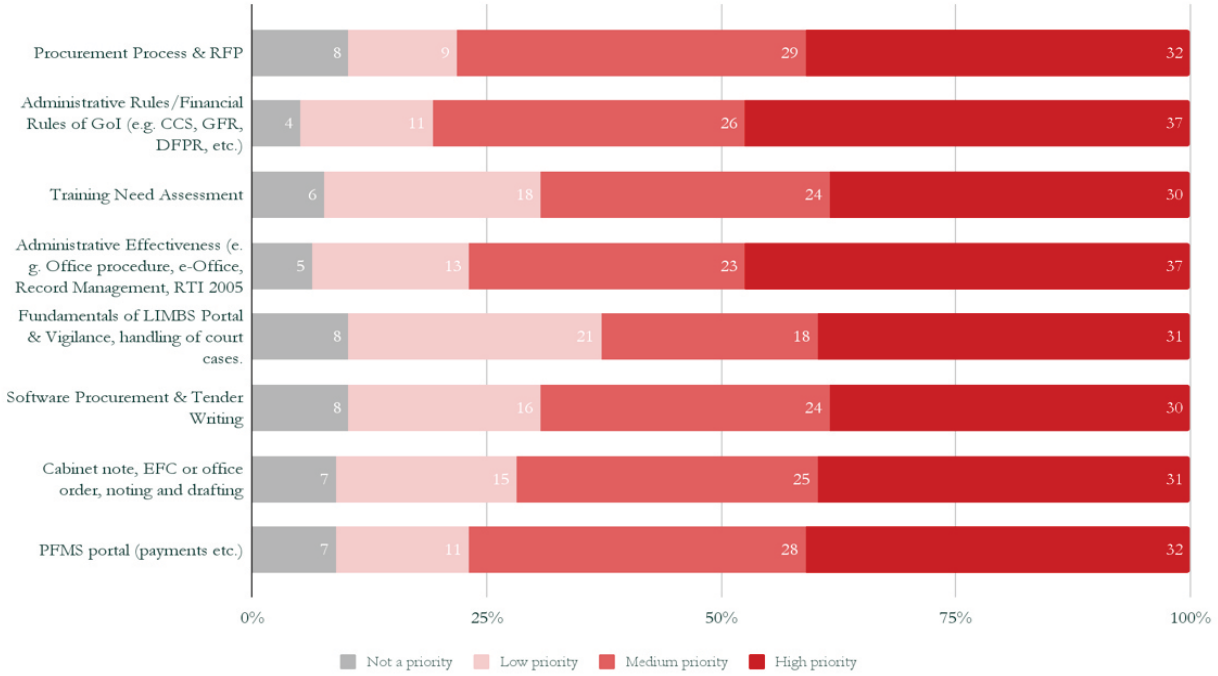


Figure 21.2: Individual's assessment of priority levels across Administration and Finance

Expected Training needs of the ISS Probationers

This section highlights the expected knowledge levels of ISS probationers by the end of their probationary training. It provides insights into both statistical and non-statistical domains, ensuring that new officers acquire the necessary competencies to perform effectively. This analysis is as per the supervisor's feedback received in the forms.

Statistics

Probationers need intermediate proficiency in agricultural statistics, focusing on crop data collection, yield estimation, and GIS mapping. Training may include satellite imagery analysis, climate impact assessments, and integrating agricultural surveys with national accounts. Industrial statistics is a priority, requiring skills in index compilation (IIP, WPI), supply chain tracking, and labour productivity. For national accounts, officers need a basic understanding of GDP computation, SNA, and sectoral breakdowns. Training would cover GDP frameworks, satellite accounts, and public finance integration.

Labour Force Statistics training would focus on employment rates, wage distributions, and PLFS indicators, with emphasis on survey methodologies, labour market analytics, and gender-disaggregated analysis. Price Statistics require basic knowledge of CPI and WPI but need deeper training in inflation measurement, basket selection, and real-time price data collection. Social Statistics training would enhance SDG tracking and demographic analysis, with a focus on poverty measurement, demographic modeling, and social welfare impact. Time series

analysis requires officers to develop forecasting skills, trend monitoring, and advanced statistical modeling, addressing gaps in ARIMA models and economic cycle analysis. Survey methodology training would focus on modern techniques like CATI, CAPI, and web-based surveys, improving digitized survey methods and error reduction.

Overall, officers have foundational knowledge but need targeted training to strengthen technical proficiency and data-driven decision-making.

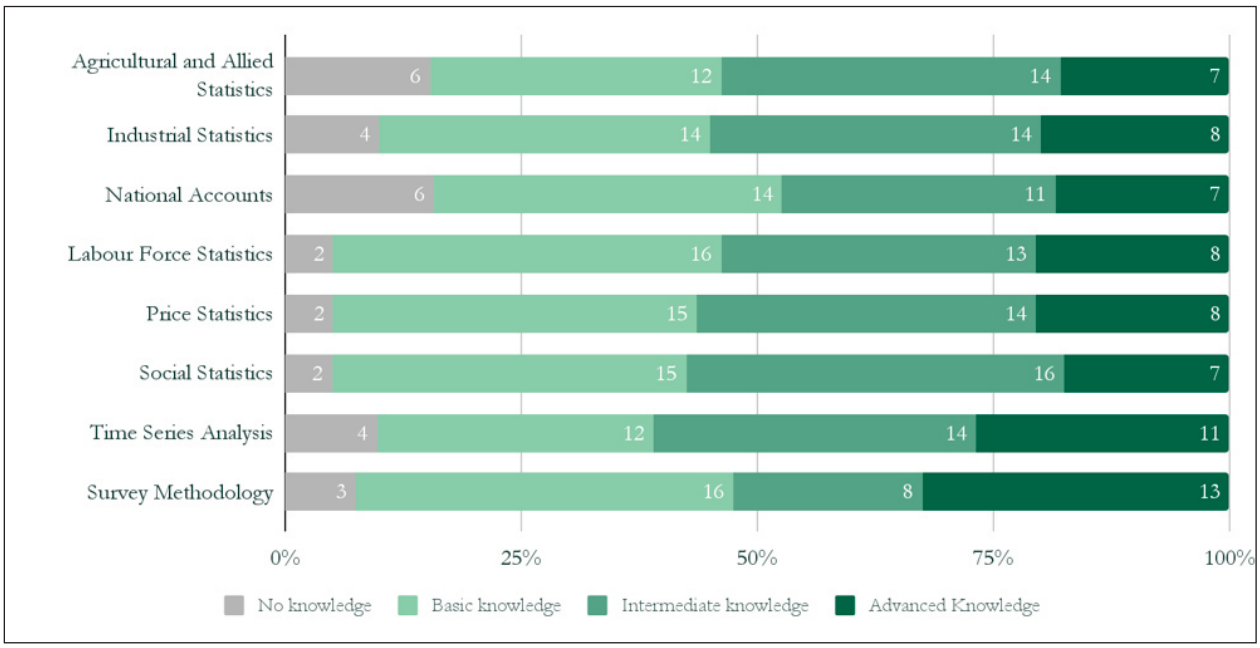


Figure 24.1: Expected knowledge levels of ISS Probationers across Statistics

Information Technology (IT)

Officers are expected to handle databases efficiently, yet gaps exist in cloud computing and large-scale data warehousing. Training should focus on SQL, NoSQL, and cloud storage best practices. Similarly, while basic networking skills are required, awareness of cybersecurity risks is low. Training should cover network security, VPN usage, and cyber risk mitigation.

In graphic design, officers need basic proficiency in Canva and Photoshop, but many lack experience in creating data-driven visuals. Training should introduce data storytelling and interactive visualization. Programming skills in Python or R are necessary for statistical computing, yet exposure to automation and AI is limited. Training should focus on statistical modeling, automation scripts, and AI-based analytics.

Officers are expected to have advanced skills in Power BI, Tableau, and dashboard development but have limited experience with interactive and geospatial visualization. Training should emphasize dynamic dashboards, real-time analytics, and GIS tools. While machine learning is key for data-driven policy analysis, AI

automation and predictive modeling remain weak areas. Training would focus on deep learning, AI-assisted decision-making, and automated data analysis.

Lastly, GIS and remote sensing skills are required, yet officers have minimal exposure to satellite data processing. Training should cover spatial analytics, remote sensing applications, and real-time geospatial processing to enhance their analytical capabilities. Strengthening these skills will enable officers to manage complex data effectively.

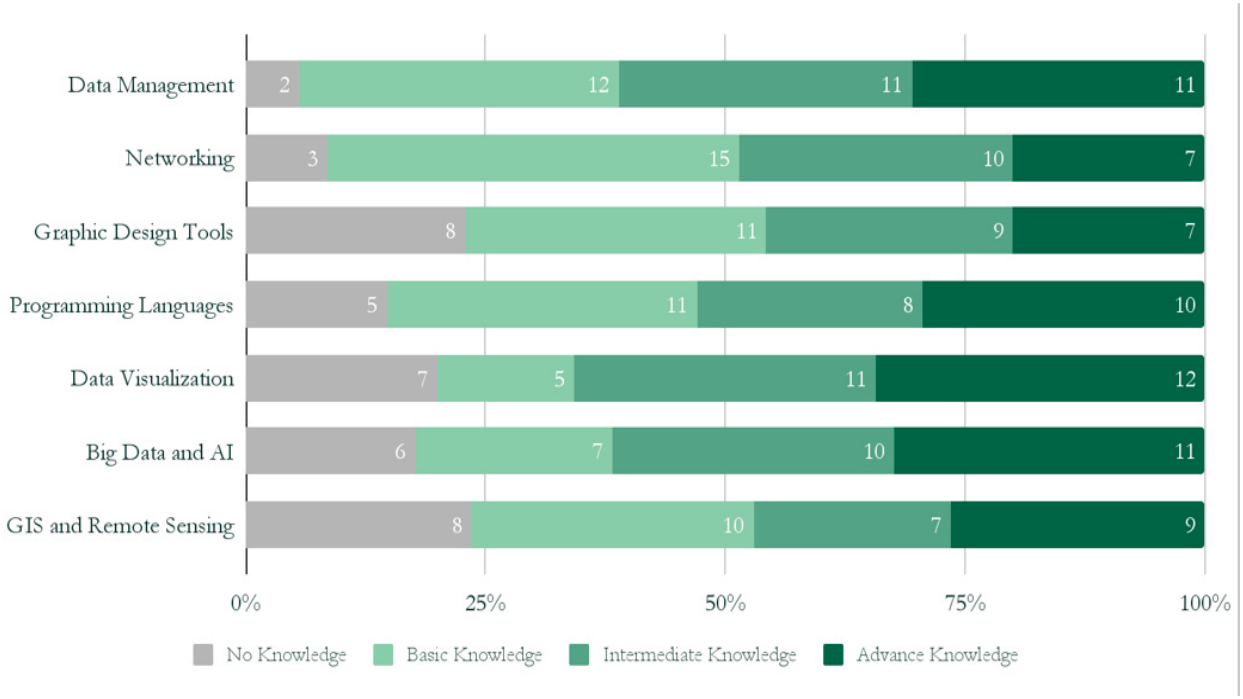


Figure 24.2: Expected knowledge levels of ISS Probationers across Information technology

Communication and Dissemination of Statistics

Officers are expected to have a basic competency in public policy communication; however, their exposure to crisis communication and journalist interaction remains limited. To address this gap, training programmes may incorporate strategic messaging, media training, and public outreach techniques to enhance their ability to communicate effectively in different scenarios.

Similarly, while officers are expected to demonstrate intermediate skills in public speaking and Power Point storytelling, many reported difficulties with live data visualization during presentations. To improve their proficiency, training should introduce interactive presentation tools and real-time data storytelling techniques, enabling them to convey complex information more effectively.

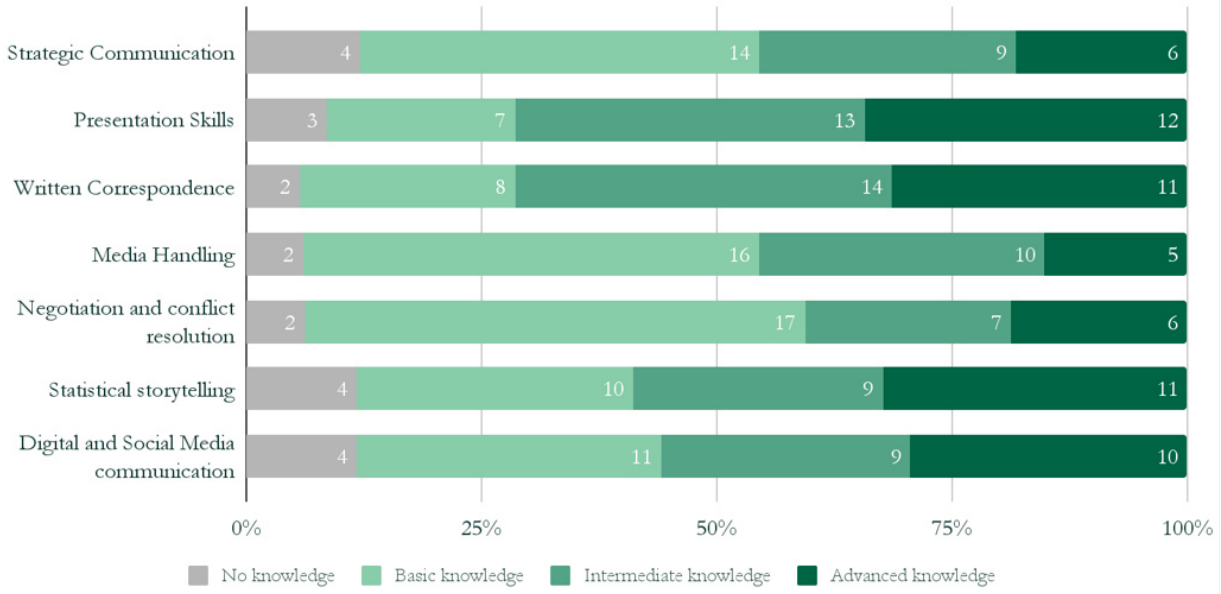


Figure 24.3: Expected knowledge levels of ISS Probationers across Communication and dissemination of Statistics

Administration and Finance

Officers are expected to have a basic understanding of procurement rules and financial regulations, but gaps were identified in legal compliance and contract management training. Strengthening their knowledge in financial governance, audit procedures, and compliance management is essential to ensure adherence to regulations. Additionally, while officers are required to develop intermediate skills in budgeting, record management, and financial tracking, their exposure to public finance analytics and expenditure monitoring remains limited. To bridge this gap, training would focus on fiscal planning techniques, expenditure audits, and performance-based budgeting, equipping officers with the necessary skills to manage public finances effectively.

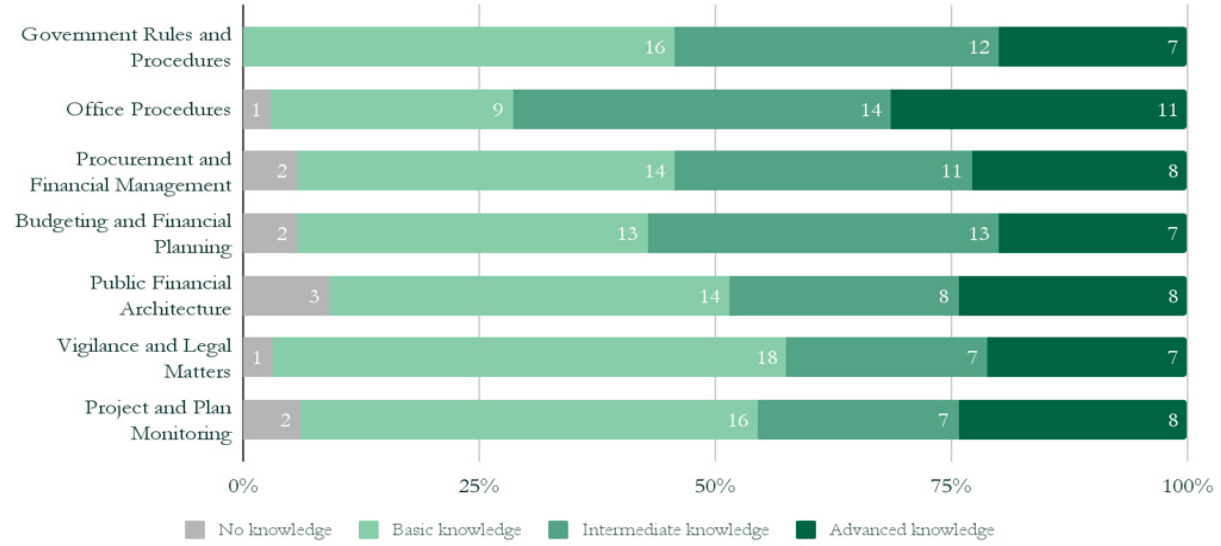


Figure 24.4: Expected knowledge levels of ISS Probationers across Administration and Finance

Customised Training Needs for ISS Probationers

This section highlights the specific training requirements for ISS probationers across various domains, based on the expected knowledge levels as identified in the Statistical Training needs Assessment (STA) Survey.

Specific training expectations for probationers included:

- Intermediate knowledge in areas like social statistics and survey methodology.
- Basic proficiency in IT-related skills such as networking and data management.
- Improved communication capabilities in negotiation and media handling.
- Foundational understanding of administrative and financial procedures.

Topic Area	Expected Knowledge Level	# of responses	% of responses
Statistics			
Agricultural and Allied Statistics	Intermediate	14	31.1
Industrial Statistics	Intermediate	14	31.1
National Accounts	Basic	14	31.1
Labour Force Statistics	Basic	16	35.6
Price Statistics	Basic	15	33.3
Social Statistics	Intermediate	16	35.6
Time Series Analysis	Intermediate	14	31.1
Survey Methodology	Basic	16	35.6
Information Technology			
Data Management	Basic	12	30.8
Networking	Basic	15	38.5
Graphic Design Tools	Basic	11	28.2
Programming Languages	Basic	11	28.2
Data Visualization	Advanced	12	30.8

Topic Area	Expected Knowledge Level	# of responses	% of responses
Data Visualization	Advanced	12	30.8
Big Data and AI	Advanced	11	28.2
GIS and Remote Sensing	Basic	10	25.6
Communication and Dissemination of Statistics			
Strategic Communication	Basic	14	37.8
Presentation Skills	Intermediate	13	35.1
Written Correspondence	Intermediate	14	37.8
Media Handling	Basic	16	43.2
Negotiation and conflict resolution	Basic	17	45.9
Statistical storytelling	Advanced	11	29.7
Digital and Social Media communication	Basic	11	29.7
Administration and Finance			
Government Rules and Procedures	Basic	16	44.4
Office Procedures	Intermediate	14	38.9
Procurement and Financial Management	Basic	14	38.9
Budgeting and Financial Planning	Intermediate	13	36.1
Public Financial Architecture	Basic	14	38.9
Vigilance and Legal Matters	Basic	18	50.0
Project and Plan Monitoring	Basic	16	44.4

Table 15: Reported preferred of training needs for ISS probationers

huge stars.

Challenges Faced in Current Line of Work

The assessment revealed several key challenges faced by respondents in their roles. The most commonly reported difficulties included proficiency in statistical software, adherence to financial rules, and effective communication skills. Many officers struggled with integrating data, writing reports, and adopting IT tools, highlighting the need for broader skill development.

Supervisors provided a slightly different perspective, emphasizing that low competency in coding, procurement procedures, and public engagement were concerns. Their feedback suggested that while officers managed basic tasks, they often lacked the technical and procedural expertise required for more complex responsibilities.

A deeper look at the number of challenges faced per officer showed that over half of the respondents encountered four to six skill gaps, particularly in areas like data integration, report writing, and IT adoption. Additionally, a smaller yet notable group of officers (5.6%) reported struggling with seven or more competency gaps, signaling an urgent need for targeted training interventions. Both individual and supervisor have stated that they have mostly faced 1 to 3 challenges with practical negligible respondents saying there are no challenges.

These findings underscore the importance of prioritizing technical upskilling, particularly in coding and data visualization, and improving financial know how and communication skills. Addressing these areas through focused training programmes will enhance overall competency and efficiency.

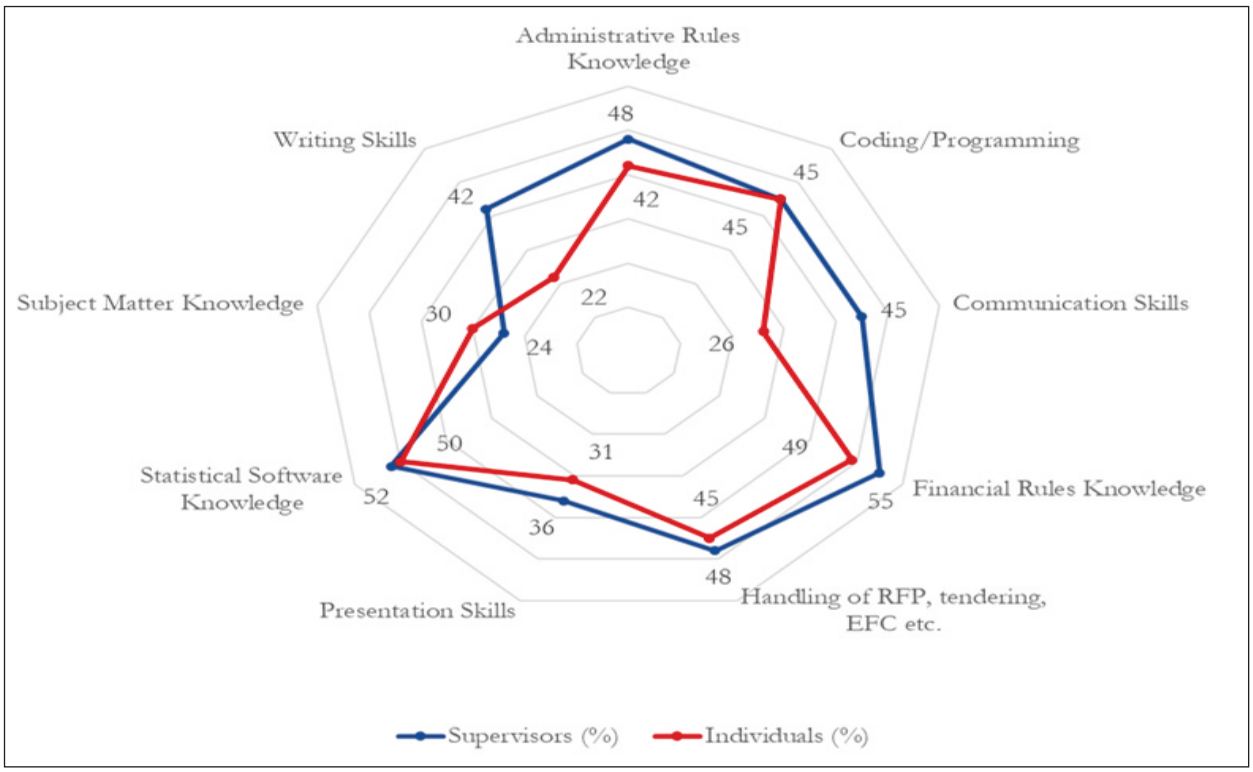


Figure 22.1: Assessment of types of challenges faced according to respondents

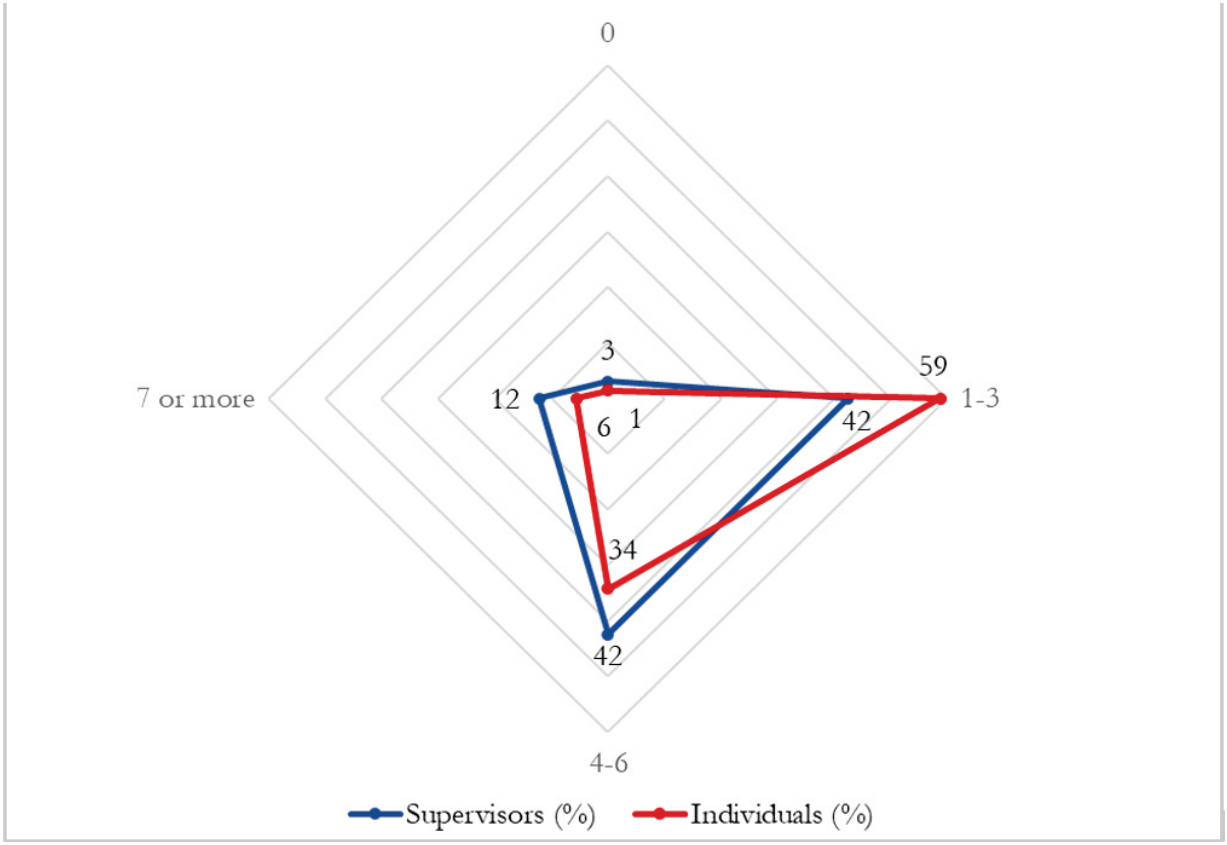


Figure 22.2: Assessment of number of challenges faced according to respondents

Training Mode Preferences

The assessment revealed that a majority of respondents preferred classroom-based learning, as it provided structured guidance and opportunities for direct interaction with trainers and peers. Hybrid models, which combine in-person and digital learning, also gained significant interest, offering flexibility while maintaining some level of structured engagement. While self-paced learning was moderately popular, many officers preferred training formats that included clear direction and facilitation rather than entirely independent study. Field immersions were also rated highly, as they provided hands-on experience and practical skill-building opportunities. However, supervisors noted that such programmes require careful logistical planning to ensure effective execution without disrupting regular work commitments.

Given these insights, the most effective training model is a blended approach incorporating classroom learning, digital modules, and practical field experiences. This combination would provide the structure and guidance that officers prefer while allowing for flexibility and real-world application of skills.

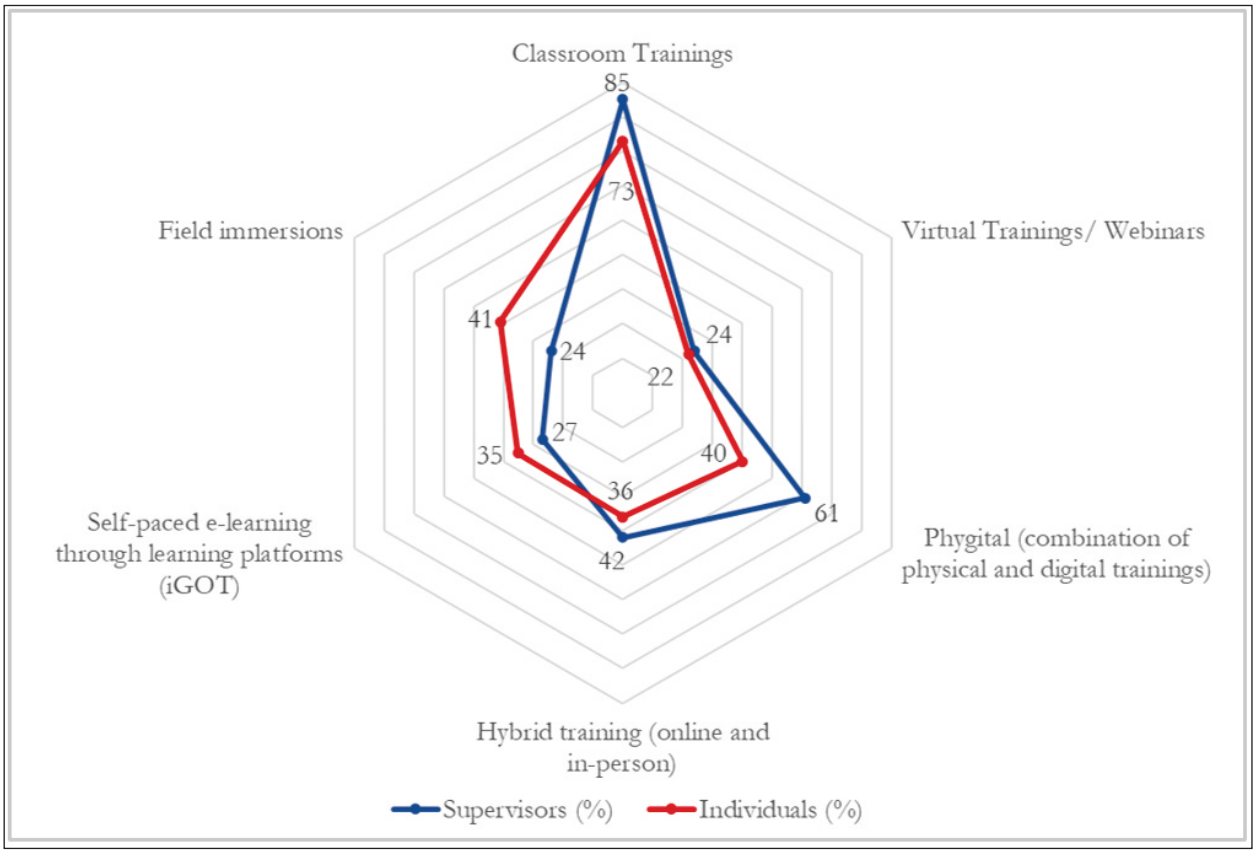


Figure 23: Training style preferred by respondents

Cross-Validation of Findings

The Statistical Training needs Assessment (STA) Survey highlighted key insights into the current state of competencies, challenges, and training preferences among ISS officers. The supervisor form served as the primary tool for validating training needs by offering a managerial perspective on team-wide skill gaps and priorities. It complemented the individual form by cross-referencing officers' self-assessed skill levels and training requirements with supervisory evaluations. This approach ensured that responses from individuals were aligned with organizational objectives and provided a holistic view of the training needs of ISS officers.

A comparative analysis of superior and individual STA Survey forms revealed the following aspects:

- Current Skill Level Across Domain Areas: As shown in Table 3, a comparative analysis of responses from supervisors and individuals on current skills revealed alignment in foundational competencies. However, gaps were identified in advanced areas such as macroeconomic statistics and IT modernization.
- Challenges: Statistical software proficiency and financial rules knowledge were identified as common challenges, reported by both supervisors and individuals as shown in Tables 12 and 13.

- Learning Styles: As shown in Table 14 above, both groups favored traditional classroom settings, though supervisors also highlighted the potential of phygital approaches.

Mid-Career Training Programme (MCTP) Feedback: The Mid-Career Training Programmes (MCTPs) of ISS officers, offer specialized courses based on the years of service, with three distinct phases. Phase 1 (8-10 years) includes foundational courses in Machine Learning, AI, Big Data, and Management Development. Phase 2 (15-17 years) focuses on advanced courses like Project Design and Evaluation, Advanced Management, Survey Methodology, and exposure to national statistical offices. Phase 3 (23-28 years) offers leadership-focused courses, including Strategic Management, Managing ICT Projects, and insights into current economic issues. Each phase builds upon the previous one, supporting professional growth and expertise at various career stages.The feedback on MCTP was reported as follows:

In Phase 1(8-10 years), both supervisors and individuals are generally satisfied with available courses, but the supervisors show slightly higher satisfaction at 88 % when compared to individuals at 79 %.

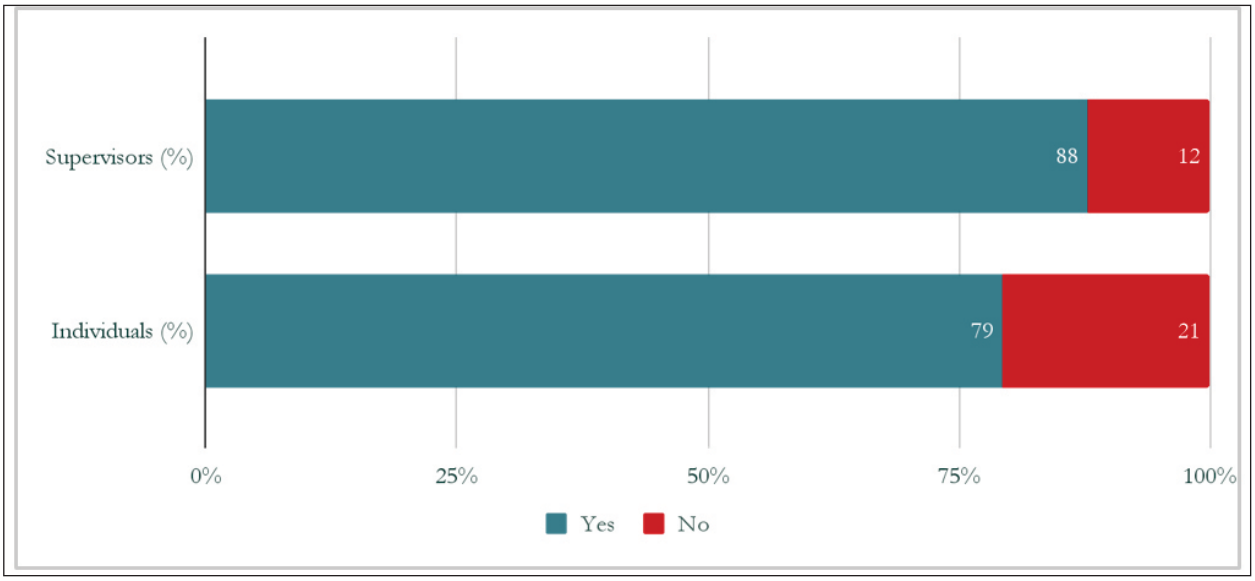


Figure 25.1: Respondents' satisfaction with courses available in Phase 1

In Phase 2(15-17 years), both supervisors and individuals are satisfied with the available courses.

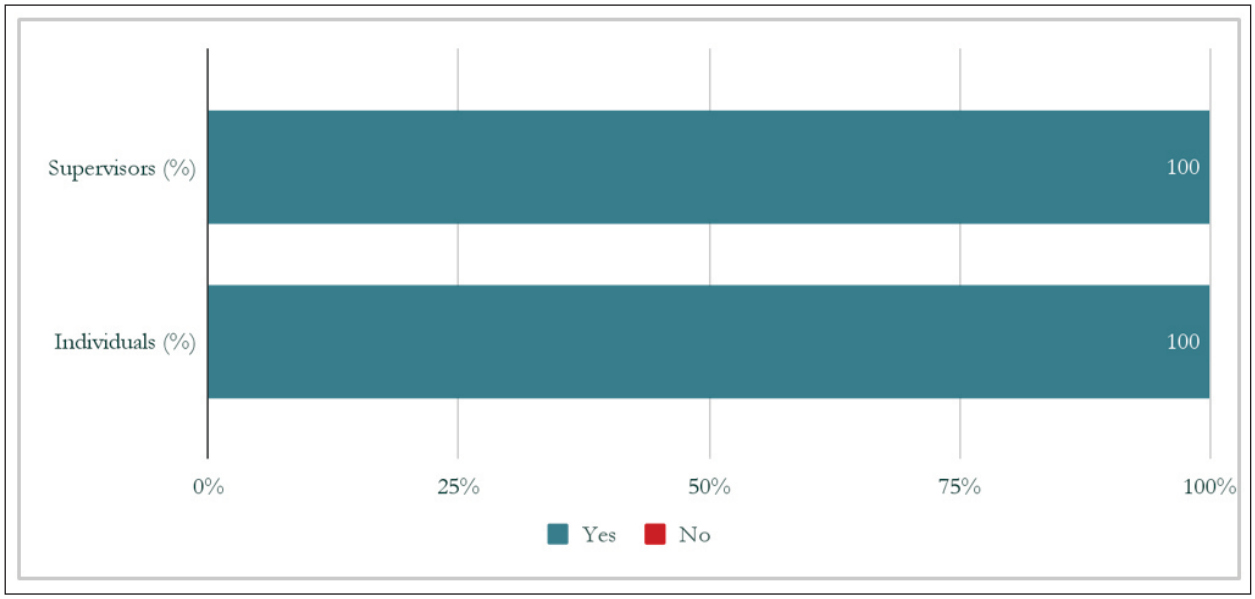


Figure 25.2: Respondents' satisfaction with courses available in Phase 2

In Phase 3(23-28 years), the supervisors maintain 100 % satisfaction, while the individual's satisfaction drops to 84 %.

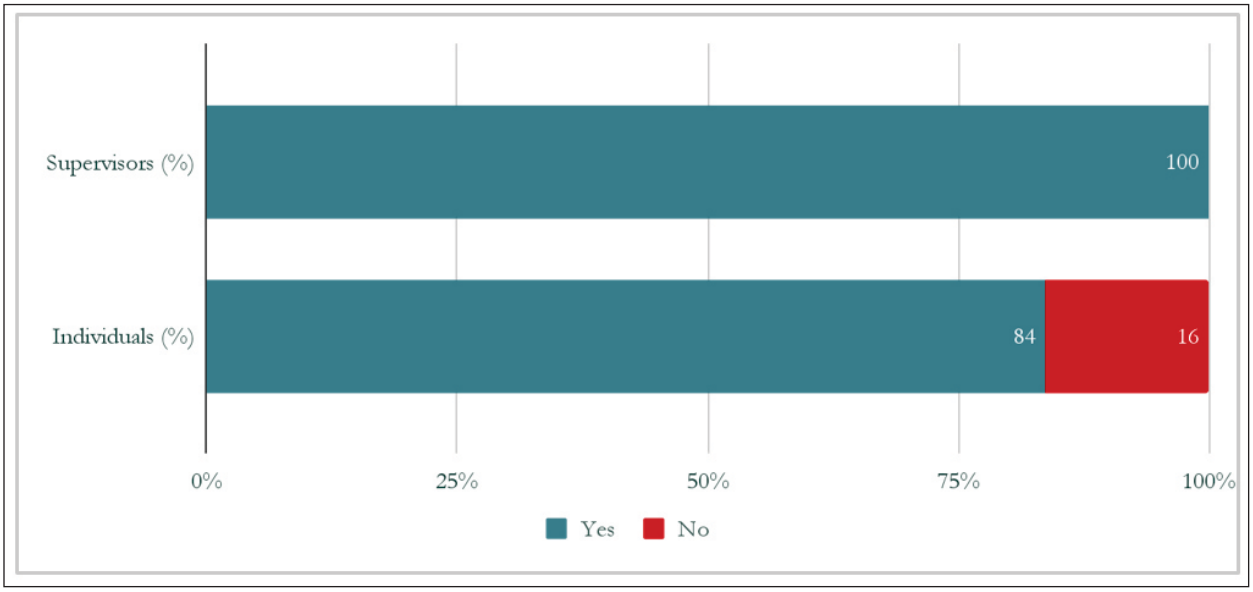


Figure 25.3: Respondents' satisfaction with courses available in Phase 3

Recommendations

The following are the recommendations for the capacity building of ISS officers.

1. **Enhance Training in Advanced Statistical Methods**
   a. Focus on big data analytics, predictive modeling, and AI-driven statistical techniques.
   b. Strengthen expertise in macroeconomic indicators, environmental economic accounting, and SDG tracking.
2. **Upgrade IT and Data Management Skills**
   a. Introduce hands-on training in R, Python, SQL, and cloud-based data management.
   b. Develop competency in GIS, remote sensing, and cybersecurity for statistical data protection.
3. **Improve Communication & Data Dissemination**
   a. Train officers in policy storytelling, infographic design, and media engagement.
   b. Emphasize interactive data visualization using Power BI, Tableau, and real-time dashboards.
4. **Strengthen Administrative & Financial Knowledge**
   a. Conduct specialized sessions on government financial regulations (GFR, DFPR), procurement, and public finance management.
   b. Provide training on audit procedures, expenditure tracking, and compliance management.
5. **Adopt Blended Learning Approaches**
   a. Combine classroom training with hybrid, self-paced digital modules, and field immersions.
   b. Leverage e-learning platforms like iGOT for flexible upskilling.
6. **Promote International Exposure & Best Practices**
   a. Facilitate training collaborations with global statistical institutions (IMF, UN, World Bank etc.).
   b. Introduce benchmarking exercises and peer learning programmes.
7. **Customize Training for Probationers & Mid-Career Officers**

a. Conduct specialized induction programmes for ISS probationers covering foundational statistics, IT, and governance.

b. Offer mid-career training modules focusing on advanced analytics, leadership, and policy application.

8. **Strengthen Data Modernization & Automation**

a. Train officers in API integration, automated data pipelines, and web scraping techniques.

b. Introduce AI and machine learning applications for policy-driven analytics.

9. **Foster Cross-Domain Collaboration & Knowledge Sharing**

a. Establish cross-functional training programmes between statisticians, policymakers, and IT specialists.

b. Encourage inter-ministerial knowledge sharing and capacity-building initiatives.

10. **Implement Continuous Evaluation & Feedback Mechanisms**

a. Regularly update training content based on officer feedback and evolving governance needs.

b. Monitor training effectiveness through performance assessments and skill application tracking.

Conclusion

The NSSTA's hybrid launch of the Statistical Training needs Assessment (STA) Survey on 28th November, 2024 in the presence of the Secretary, MoSPI & the Chairman of CBC, and over 100 officers from across pan India, represents a landmark initiative in strengthening statistical capacity building. The comprehensive assessment has successfully identified skill gaps, prioritized learning needs, and captured the challenges faced by officers across diverse domains. This survey provides actionable insights into developing a tailored training strategy that not only addresses current competencies but also fosters a culture of continuous learning. By analyzing learning preferences, training duration, and skill priorities, the initiative ensures that the training programmes are both impactful and aligned with evolving global and national demands. The findings underscore the importance of strategic planning in designing focused training modules that address core areas such as advanced statistical techniques, IT tools, and effective communication, while fostering interdisciplinary competencies. It also highlights the need for periodic reassessment to keep pace with technological advancements and changing governance requirements. To sustain momentum and

ensure continued relevance, it is recommended that similar training needs assessments be conducted every 2–3 years. This will help refine training strategies, optimize resource allocation, and enhance the effectiveness of capacity-building initiatives. Through these recurring evaluations, NSSTA can uphold its commitment to fostering a proficient and future-ready workforce, thereby contributing to the nation's statistical ecosystem and governance excellence.

Annexures

List of Tables

Table 1: Respondent profile

Topic	Supervisors		Individuals	
	# of responses	% of responses	# of responses	% of responses
Gender				
Female	10	30.3	53	37.1
Male	23	69.7	90	62.9
Years of service				
2-4 years	-	-	31	21.7
5 -7 years	-	-	15	10.5
8-10 years	4	12.1	17	11.9
11-14 years	4	12.1	19	13.3
15 -17 years	10	30.3	10	7.0
18 -22 years	1	3.0	7	4.9
23 -28 years	12	36.4	29	20.3
More than 28 years	2	6.1	15	10.5
Ministries				
MoSPI	29	87.9	106	74.1
MoA&FM	-	-	9	6.3
MoF	-	-	8	5.6
MoCI	1	3.0	5	3.5
MoMSME	-	-	4	2.8
MoHFW	2	6.1	2	1.4
MoNRE	-	-	2	1.4
MoD	1	3.0	-	-
Others	-	-	7	4.9

Topic	Supervisors		Individuals	
	# of responses	% of responses	# of responses	% of responses
Designations of respondents				
Director and equivalent	10	30.3	25	17.5
Additional Director General and equivalent	1	3.0	4	2.8
Deputy Director General and equivalent	17	51.5	39	27.3
Deputy Director and equivalent	3	9.1	39	27.3
Joint Director and equivalent	2	6.1	5	3.5
Assistant Director and equivalent	-	-	31	21.7

Table 2: Assessment of work areas according to respondents

Topic	Supervisors		Individuals	
	# of responses	% of responses	# of responses	% of responses
Statistics	28	84.8	130	90.9
Information Technology	24	72.7	112	78.3
Communication and dissemination of Statistics	24	72.7	105	73.4
Administration & Finance	26	78.8	78	54.5

Table 3: Current knowledge levels of the respondents

Topic	Supervisors			Individuals		
	Knowledge level	# of responses	% of responses	Knowledge level	# of responses	% of responses
Statistics						
Data sources, collection and processing						
Research Methodology	Basic	17	60.7	Basic	50	38.5
Survey Methodology	Basic	12	42.9	Intermediate	50	38.5
Questionnaire content Designing and testing	Basic	12	42.9	Intermediate	48	36.9
Handling newer forms of data (e.g. GST system data, big data etc.)	Intermediate	9	32.1	Basic	37	28.5
Administrative Data for Policy Formulation	Basic	10	35.7	Basic	52	40.0
Data integration - from different data sources (survey and administrative data)	Intermediate	10	35.7	Intermediate	41	31.5
Data analysis and presenting						
Unit-level data extraction	Basic	10	35.7	Basic	52	40.0
Estimation incl. small area estimation	Basic	11	39.3	Basic	50	38.5
Statistical Tabulation and report writing	Intermediate	12	42.9	Basic	49	37.7
Macroeconomic statistics						
National Accounts	Basic	11	39.3	Basic	59	45.4
Satellite Accounts	Not relevant	11	39.3	No knowledge	49	37.7
Measurement of emerging area like Digital economy, Blue Economy	Not relevant	10	35.7	No knowledge	48	36.9
System of Environmental Economic Accounting	No knowledge	9	32.1	No knowledge	51	39.2
Index Number & Price Statistics	Not relevant	11	39.3	Basic	54	41.5
Social Statistics with Implementation and Monitoring of Sustainable Development Goals	Basic	8	28.6	Basic	60	46.2
Energy Statistics and Accounts	Not relevant	11	39.3	No knowledge	46	35.4
Employment, unemployment and Migration	Basic	10	35.7	Basic	53	40.8

Topic	Supervisors			Individuals		
	Knowledge level	# of responses	% of responses	Knowledge level	# of responses	% of responses
Cross-cutting statistics						
Gender	Basic	14	50.0	Basic	66	50.8
Monitoring & Evaluation	Basic	13	46.4	Basic	54	41.5
Current Economic Issues	Basic	17	60.7	Basic	73	56.2
Exposure to International Practices in Statistics	Basic	10	35.7	Basic	56	43.1
Information technology						
Software skills						
Data collection tools (e.g. CAPI, Web portal etc.)	Intermediate	15	62.5	Basic	41	36.6
Statistical processing and Analysis tools (e.g. R; Python; SPSS; Advance Excel, SQL etc.)	Basic	12	50.0	Basic	55	49.1
Visualization tools (e.g. Power BI , Tableau etc.)	Basic	14	58.3	Basic	55	49.1
Database Management tools (e.g. MySQL, Oracle Database, MongoDB, PostgreSQL etc.)	Basic	14	58.3	Basic	52	46.4
Geographic information system (GIS) for mapping statistical data (e.g ArcGIS, QGIS)	Basic	10	41.7	No knowledge	50	44.6
Fundamentals of Computer and Electronic Data Processing (EDP)	Basic	13	54.2	Basic	48	42.9
Modernization and digitalization						
Artificial intelligence, Machine learning	Basic	13	54.2	Basic	60	53.6
Web Scraping/ETL/APIs	No knowledge	12	50.0	No knowledge	68	60.7
Big Data Analysis	Basic	11	45.8	Basic	55	49.1
Data security and Cyber security	Basic	14	58.3	Basic	49	43.8
Reproducible Analytical Pipeline	No knowledge	11	45.8	No knowledge	70	62.5
Designing and Management of IT Project	Basic	11	45.8	No knowledge	55	49.1

Topic	Supervisors			Individuals		
	Knowledge level	# of responses	% of responses	Knowledge level	# of responses	% of responses
Communication and dissemination of statistics						
Statistical Literacy and Storytelling	Basic	14	58.3	Basic	56	53.3
Infographic	Basic	12	50.0	Basic	50	47.6
Developing e-Content	Basic	8	33.3	No knowledge	40	38.1
Statistical disclosure control	No knowledge	10	41.7	No knowledge	48	45.7
Use of social media	Basic	13	54.2	Basic	51	48.6
Communicating with journalists	Basic	10	41.7	No knowledge	38	36.2
Making effective presentations	Intermediate	9	37.5	Basic	45	42.9
Direct Trainers Skill (DTS) and Design of Training (DOT)	Basic	10	41.7	No knowledge	40	38.1
Administration & finance						
Procurement Process & RFP	Basic	13	48.1	Basic	30	38.5
Administrative Rules/Financial Rules of GoI (e.g. CCS, GFR, DFPR, etc.)	Intermediate	13	48.1	Basic	35	44.9
Training Need Assessment	Basic	12	44.4	Basic	36	46.2
Administrative Effectiveness (e.g. Office procedure, e-Office, Record Management, RTI 2005 and Public Grievances etc.)	Intermediate	13	48.1	Basic	37	47.4
Fundamentals of LIMBS Portal & Vigilance, handling of court cases.	Basic	12	44.4	Basic	27	34.6
Software Procurement & Tender Writing	Basic	13	48.1	Basic	29	37.2
Cabinet note, EFC or office order, noting and drafting	Basic	14	51.9	Basic	37	47.4
PFMS portal (payments etc.)	Intermediate	12	44.4	Basic	36	46.2

Table 4: Priority levels of the respondents

Topic	Supervisors			Individuals		
	Priority level	# of responses	% of responses	Priority level	# of responses	% of responses
Statistics						
Data sources, collection and processing						
Research Methodology	Medium	12	42.9	Medium	50	38.5
Survey Methodology	Medium	13	46.4	Medium	49	37.7
Questionnaire content Designing and testing	Medium	12	42.9	Medium	48	36.9
Handling newer forms of data (e.g. GST system data, big data etc.)	Medium	12	42.9	High	65	50.0
Administrative Data for Policy Formulation	Medium	14	50.0	High	57	43.8
Data integration - from different data sources (survey and administrative data)	High	11	39.3	High	68	52.3
Data analysis and presenting						
Unit-level data extraction	High	14	50.0	High	50	38.5
Estimation incl. small area estimation	High	7	25.0	Medium	48	36.9
Statistical Tabulation and report writing	High	13	46.4	High	55	42.3
Macroeconomic statistics						
National Accounts	Not a priority	9	32.1	High	42	32.3
Satellite Accounts	Not a priority	10	35.7	Medium	42	32.3
Measurement of emerging area like Digital economy, Blue Economy	Low	9	32.1	Medium	49	37.7
System of Environmental Economic Accounting	Low	11	39.3	Medium	41	31.5
Index Number & Price Statistics	Low	12	42.9	Medium	44	33.8
Social Statistics with Implementation and Monitoring of Sustainable Development Goals	Low	9	32.1	Medium	50	38.5
Energy Statistics and Accounts	Low	10	35.7	Medium	44	33.8
Employment, unemployment and Migration	Medium	9	32.1	Medium	50	38.5

Topic	Supervisors			Individuals		
	Priority level	# of responses	% of responses	Priority level	# of responses	% of responses
Cross-cutting statistics						
Gender	Low	11	39.3	Medium	45	34.6
Monitoring & Evaluation	Low	10	35.7	Medium	54	41.5
Current Economic Issues	High	10	35.7	Medium	51	39.2
Exposure to International Practices in Statistics	High	11	39.3	High	63	48.5
Information technology						
Software skills						
Data collection tools (e.g. CAPI, Web portal etc.)	High	13	54.2	High	46	41.1
Statistical processing and Analysis tools (e.g. R; Python; SPSS; Advance Excel, SQL etc.)	High	13	54.2	High	51	45.5
Visualization tools (e.g. Power BI , Tableau etc.)	High	11	45.8	High	56	50.0
Database Management tools (e.g. MySQL, Oracle Database, MongoDB, PostgreSQL etc.)	High	11	45.8	High	44	39.3
Geographic information system (GIS) for mapping statistical data (e.g ArcGIS, QGIS)	High	9	37.5	High	47	42.0
Fundamentals of Computer and Electronic Data Processing (EDP)	Low	9	37.5	Medium	35	31.3
Modernization and digitalization						
Artificial intelligence, Machine learning	Medium	9	37.5	High	58	51.8
Web Scraping/ETL/APIs	Low	8	33.3	Medium	39	34.8
Big Data Analysis	Medium	11	45.8	High	48	42.9
Data security and Cyber security	Medium	10	41.7	Medium	50	44.6
Reproducible Analytical Pipeline	Low	7	29.2	Medium	43	38.4
Designing and Management of IT Project	High	7	29.2	Medium	42	37.5
Communication and dissemination of statistics						
Statistical Literacy and Storytelling	Medium	12	50.0	High	53	50.5
Infographic	Medium	9	37.5	High	47	44.8
Developing e-Content	Medium	9	37.5	Medium	42	40.0
Statistical disclosure control	Medium	10	41.7	Medium	42	40.0
Use of social media	Medium	13	54.2	High	34	32.4

Topic	Supervisors			Individuals		
	Priority level	# of responses	% of responses	Priority level	# of responses	% of responses
Communicating with journalists	Medium	9	37.5	Medium	38	36.2
Making effective presentations	High	15	62.5	High	55	52.4
Direct Trainers Skill (DTS) and Design of Training (DOT)	Medium	9	37.5	Medium	43	41.0
Administration & finance						
Procurement Process & RFP	Medium	13	48.1	High	32	41.0
Administrative Rules/Financial Rules of GoI (e.g. CCS, GFR, DFPR, etc.)	High	14	51.9	High	37	47.4
Training Need Assessment	Medium	15	55.6	High	30	38.5
Administrative Effectiveness (e.g. Office procedure, e-Office, Record Management, RTI 2005 and Public Grievances etc.)	Medium	12	44.4	High	37	47.4
Fundamentals of LIMBS Portal & Vigilance, handling of court cases.	Medium	11	40.7	High	31	39.7
Software Procurement & Tender Writing	Medium	11	40.7	High	30	38.5
Cabinet note, EFC or office order, noting and drafting	High	11	40.7	High	31	39.7
PFMS portal (payments etc.)	Medium	12	44.4	High	32	41.0

Table 5: Challenges and training style preferences

Topic	Supervisors		Individuals	
	# of responses	% of responses	# of responses	% of responses
Challenges faced according to respondents				
Administrative Rules Knowledge	16	48.5	60	42.0
Coding/Programming	15	45.5	64	44.8
Communication Skills	15	45.5	37	25.9
Financial Rules Knowledge	18	54.5	70	49.0
Handing of RFP, tendering, EFC etc.	16	48.5	64	44.8
Presentation Skills	12	36.4	45	31.5
Statistical Software Knowledge	17	51.5	72	50.3
Subject Matter Knowledge	8	24.2	43	30.1
Writing Skills	14	42.4	31	21.7
Number of challenges faced according to respondents				
0	1	3.0	2	1.4
1-3	14	42.4	84	58.7
4-6	14	42.4	49	34.3
7 or more	4	12.1	8	5.6
Training style preferred by respondents				
Classroom Trainings	28	84.8	105	73.4
Virtual Trainings/ Webinars	8	24.2	31	21.7
Phygital (combination of physical and digital trainings)	20	60.6	57	39.9
Hybrid training (online and in-person)	14	42.4	52	36.4
Self-paced e-learning through learning platforms (iGOT)	9	27.3	50	35.0
Field immersions	8	24.2	58	40.6

Table 6: Expected knowledge levels of ISS Probationers by the end of their training

Topic	Expected knowledge level	# of responses	% of responses
Statistics			
Agricultural and Allied Statistics	Intermediate	14	31.1
Industrial Statistics	Intermediate	14	31.1
National Accounts	Basic	14	31.1
Labour Force Statistics	Basic	16	35.6
Price Statistics	Basic	15	33.3
Social Statistics	Intermediate	16	35.6
Time Series Analysis	Intermediate	14	31.1
Survey Methodology	Basic	16	35.6
Information technology			
Data Management	Basic	12	30.8
Networking	Basic	15	38.5
Graphic Design Tools	Basic	11	28.2
Programming Languages	Basic	11	28.2
Data Visualization	Advanced	12	30.8
Big Data and AI	Advanced	11	28.2
GIS and Remote Sensing	Basic	10	25.6
Communication and dissemination of statistics			
Strategic Communication	Basic	14	37.8
Presentation Skills	Intermediate	13	35.1
Written Correspondence	Intermediate	14	37.8
Media Handling	Basic	16	43.2
Negotiation and conflict resolution	Basic	17	45.9
Statistical storytelling	Advanced	11	29.7
Digital and Social Media communication	Basic	11	29.7
Administration & finance			
Government Rules and Procedures	Basic	16	44.4
Office Procedures	Intermediate	14	38.9
Procurement and Financial Management	Basic	14	38.9
Budgeting and Financial Planning	Intermediate	13	36.1
Public Financial Architecture	Basic	14	38.9
Vigilance and Legal Matters	Basic	18	50.0
Project and Plan Monitoring	Basic	16	44.4

Table 7: Cross-Validation Analysis

Topic	Supervisors				Individuals			
	Knowledge & priority level		# of responses	% of responses	Knowledge & priority level		# of responses	% of responses
Statistics								
Data sources, collection and processing								
Research	Basic	Medium	6	21.4	Basic	Medium	24	18.5
Survey	Basic	Medium	7	25.0	Intermediate	High	25	19.2
Questionnaire content Designing and testing	Intermediate	Medium	7	25.0	Intermediate	High	22	16.9
Handling newer forms of data (e.g. GST system data, big data etc.)	Basic	Medium	5	17.9	Intermediate	High	22	16.9
Administrative Data for Policy Formulation	Basic	Medium	8	28.6	Basic	High	25	19.2
Data integration - from different data sources (survey and administrative data)	Intermediate	High	7	25.0	Intermediate	High	24	18.5
Data analysis and presenting								
Unit-level data extraction	Intermediate	High	7	25.0	Basic	High	26	20.0
Estimation incl. small area	Basic	High	4	14.3	Basic	Medium	22	16.9
Statistical Tabulation and report writing	Basic	High	6	21.4	Basic	High	26	20.0
Macroeconomic statistics								
National Accounts	Basic	Medium	5	17.9	Basic	Medium	25	19.2
Satellite Accounts	Basic	High	3	10.7	Basic	Medium	22	16.9
Measurement of emerging area like Digital economy, Blue Economy	No knowledge	Medium	4	14.3	No knowledge	Medium	21	16.2
System of Environmental Economic Accounting	No knowledge	Low	6	21.4	Not relevant	Not a priority	19	14.6
Index Number & Price Statistics	Intermediate	Medium	3	10.7	Basic	Medium	19	14.6

Topic	Supervisors				Individuals			
	Knowledge & priority level		# of responses	% of responses	Knowledge & priority level		# of responses	% of responses
Social Statistics with Implementation and Monitoring of Sustainable Development Goals	Intermediate	Medium	4	14.3	Basic	Medium	31	23.8
Energy Statistics and Accounts	Basic	Medium	4	14.3	Basic	Medium	23	17.7
Employment, unemployment and Migration	Basic	Medium	5	17.9	Basic	Medium	25	19.2
Cross-cutting statistics								
Gender	Basic	Medium	6	21.4	Basic	Medium	25	19.2
Monitoring & Evaluation	Basic	Low	7	25.0	Basic	Medium	27	20.8
Current Economic Issues	Basic	High	6	21.4	Basic	Medium	31	23.8
Exposure to International Practices in Statistics	Basic	High	4	14.3	Basic	High	30	23.1
Information technology								
Software skills								
Data collection tools (e.g. CAPI, Web portal etc.)	Intermediate	High	10	41.7	Intermediate	High	20	17.9
Statistical processing and Analysis tools (e.g. R; Python; SPSS; Advance Excel, SQL etc.)	Intermediate	High	7	29.2	Basic	Medium	25	22.3
Visualization tools (e.g. Power BI , Tableau etc.)	Basic	High	8	33.3	Basic	High	29	25.9
Database Management tools (e.g. MySQL, Oracle Database, MongoDB, PostgreSQL etc.)	Basic	High	7	29.2	Basic	Medium	23	20.5

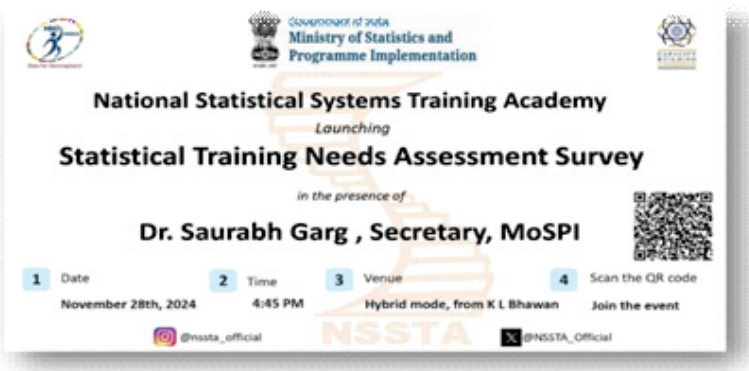
Topic	Supervisors				Individuals			
	Knowledge & priority level		# of responses	% of responses	Knowledge & priority level		# of responses	% of responses
Geographic information system (GIS) for mapping statistical data (e.g ArcGIS, QGIS)	Basic	High	4	16.7	No knowledge	High	26	23.2
Fundamentals of Computer and Electronic Data Processing (EDP)	Basic	Medium	5	20.8	Basic	Medium	16	14.3
Modernization and digitalization								
Artificial intelligence, Machine learning	Basic	Medium	7	29.2	Basic	High	36	32.1
Web Scraping/ETL/APIs	No knowledge	Low	6	25.0	No knowledge	Medium	24	21.4
Big Data Analysis	Basic	Medium	6	25.0	Basic	High	29	25.9
Data security and Cyber security	Basic	Medium	8	33.3	Basic	Medium	28	25.0
Reproducible Analytical Pipeline	No knowledge	Low	6	25.0	No knowledge	Medium	28	25.0
Designing and Management of IT Project	Basic	Medium	5	20.8	No knowledge	Medium	22	19.6
Communication and dissemination of statistics								
Statistical Literacy and Storytelling	Basic	Medium	8	33.3	Basic	High	26	24.8
Infographic	Basic	High	6	25.0	Basic	High	26	24.8
Developing e-Content	Basic	High	5	20.8	No knowledge	Medium	18	17.1
Statistical disclosure control	Basic	Medium	5	20.8	No knowledge	Medium	24	22.9
Use of social media	Basic	Medium	10	41.7	Basic	Medium	22	21.0
Communicating with journalists	Basic	Medium	4	16.7	Basic	Medium	16	15.2
Making effective presentations	Basic	High	6	25.0	Basic	High	24	22.9
Direct Trainers Skill (DTS) and Design of Training (DOT)	Basic	High	5	20.8	Basic	Medium	20	19.0
Administration & finance								
Procurement Process & RFP	Basic	Medium	7	25.9	Basic	Medium	16	20.5
Administrative Rules/Financial Rules of GoI (e.g. CCS, GFR, DFPR, etc.)	Intermedia te	High	9	33.3	Intermedia te	High	17	21.8

Topic	Supervisors				Individuals			
	Knowledge & priority level		# of responses	% of responses	Knowledge & priority level		# of responses	% of responses
Training Need Assessment	Basic	Medium	8	29.6	Basic	High	14	17.9
Administrative Effectiveness (e.g. Office procedure, e-Office, Record Management, RTI 2005 and Public Grievances etc.)	Basic	Medium	9	33.3	Basic	High	17	21.8
Fundamentals of LIMBS Portal & Vigilance, handling of court cases.	Basic	Medium	7	25.9	No knowledge	High	10	12.8
Software Procurement & Tender Writing	Basic	Medium	5	18.5	Basic	High	13	16.7
Cabinet note, EFC or office order, noting and drafting	Basic	Medium	6	22.2	Basic	Medium	15	19.2
PFMS portal (payments etc.)	Basic	Medium	8	29.6	Basic	High	16	20.5

Table 8: Satisfaction with offered courses in MCTP

Topic	Supervisors		Individuals	
	# of responses	% of responses	# of responses	% of responses
Phase 1				
Yes	29	87.9	54	79.4
No	4	12.1	14	20.6
Phase 2				
Yes	21	100.0	32	100.0
No	0	0.0	0	0.0
Phase 3				
Yes	8	100.0	36	83.7
No	0	0.0	7	16.3

Glimpse of the STA Survey Launch Event



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Note: *Feedback and suggestions for the report are welcomed by the National Statistical Systems Training Academy (NSSTA), Ministry of Statistics and Programme Implementation (MoSPI) team at ddg.nssta@mospi.gov.in*

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