e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:07/Issue:06/June-2025 Impact Factor- 8.187 www.irjmets.com

A TABLEAU TOOL FOR EFFECTIVE RECRUITMENT ANALYSIS IN THE IT SECTOR

M. Saranya*1, M. Charishma*2, Dr. B.V. Subba Rao*3

*1,2IIB.Tech, Information Technology, PVPSIT, Vijayawada, India.

*3Professor & HOD, Department Of IT PVPSIT, Vijayawada, India.

DOI: https://www.doi.org/10.56726/IRJMETS80529

ABSTRACT

This application presents a comprehensive analysis of recruitment trends in the IT sector over the past 14years using a Data Visualization tool, Tableau. Recruitment in the IT industry involves identifying, attracting, and hiring skilled professionals across various domains such as software development, data science, cybersecurity, and IT support. Effective recruitment planning is essential for companies to meet evolving technology demands and maintain competitive advantage. This project visualizes historical recruitment data to provide insights into hiring volumes, skill demands, geographic distribution, and demographic changes from 2010to2024.The application offers a clear overview of recruitment patterns, highlighting trends like emerging skill requirements, regional hiring hotspots, and workforce diversity. This analysis helps HR professionals, recruiters, and industry stakeholders make data-driven decisions for future talent acquisition strategies , while also guiding students and graduates to focus on the skills that are increasingly in demand for IT recruitment.

Keywords: Recruitment Analysis, IT Sector, Data Visualization, Tableau, Workforce Trends.

I. INTRODUCTION

Previously, to understand recruitment trends and jobmarket demands in the IT sector, students, graduates,and HR professionals had to rely on multiple sources such as job portals, company websites, reports, and articles. This fragmented approach made it time-consuming and difficult to get a clear and comprehensive picture of the industry's hiring patterns. Additionally, identifyingwhich skills were in demand or which regions had more job opportunities required manual searching across different platforms. This process was inefficient and often resulted in incomplete or outdated information. This project aims to simplify this by providing a unified, visual overview of recruitment data from the past 14 years using Tableau, enabling quicker and more informed decision-making.

II. METHODOLOGY

1. Data Collection: Gathered data on IT sector recruitment across multiple Indian cities over the past 14 years.
2. Data Cleaning & Preprocessing: Used Excel to structure and clean the raw data for compatibility with Tableau.
3. Data Visualization: CreateddashboardsinTableauto:

- Comparerecruitmentpercentagesbyyear.
- Analyzecity-wiseandcompany-wiserecruitmenttrends.
- Highlightrecruitmentpeaksandtroughsacrossthetimeline.

4. Analysis&Interpretation:Derivedinsightsfromvisualtrendsandpatterns.

III. MODELING AND ANALYSIS

This project utilizes Microsoft Excel and Tableau to model and analyze recruitment data in the IT sector from 2010 to 2024. The raw data wasfirstcompiledand organized in Microsoft Excel, where year-wise and location-wise recruitment percentages were calculated for various IT skills. Excel served as a foundational tool for data cleaning and structuring.

Following preprocessing, Tableau was used to create visual models such asscatter plots and geographical maps. These visualizations provided clear and interactive insights into:

- Year-wiserecruitmenttrendsforspecificITskillslike.NET,CyberSecurity,Java,Python,etc.
- City-wise recruitment percentages, identifying major hiring hubs across India such as Hyderabad, Chennai,

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:07/Issue:06/June-2025 Impact Factor- 8.187 www.irjmets.com

Pune, and others.

This combination of tools allowed for effective data exploration, pattern recognition, and industry trend analysis through a user-friendly and interactive dashboard.

S.No	Tool/Material	Purpose
1	MicrosoftExcel	Datapreprocessingandformatting
2	TableauPublic/Desktop	Visualization and dashboard creation
3	RecruitmentDataset	Sourcedata from2010to2024
4	InternetAccess	ForTableau Publicdashboard publishing
5	WindowsSystem	Platform for development and visualization

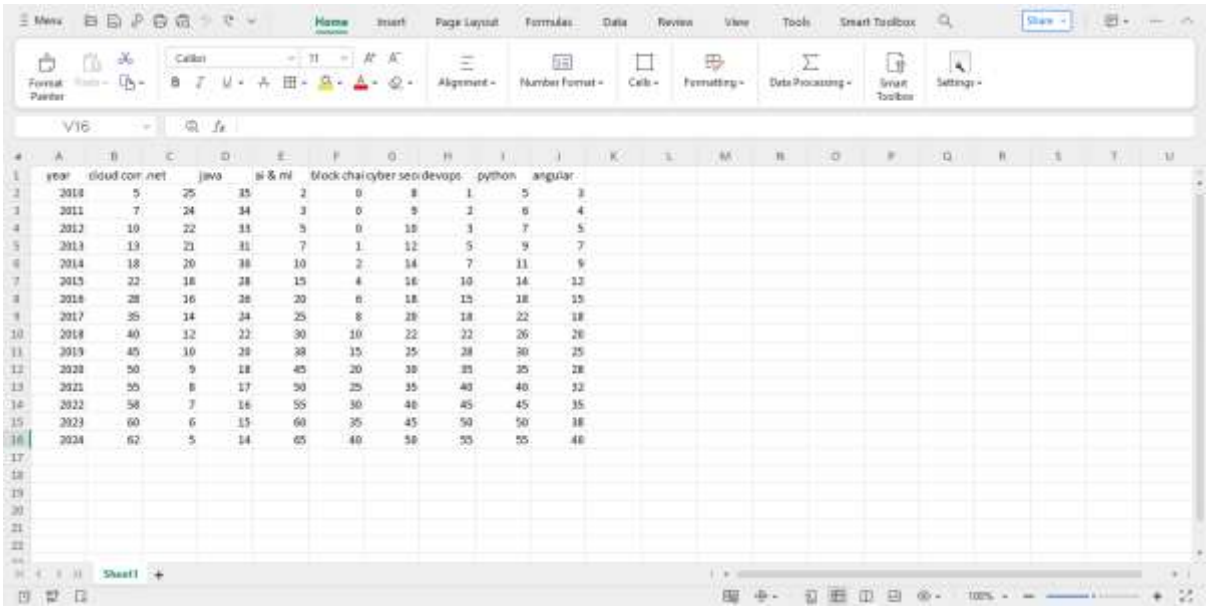

Figure 1: ExcelSheetRepresentingJobPercentagebyTechnologyinthePast14Years

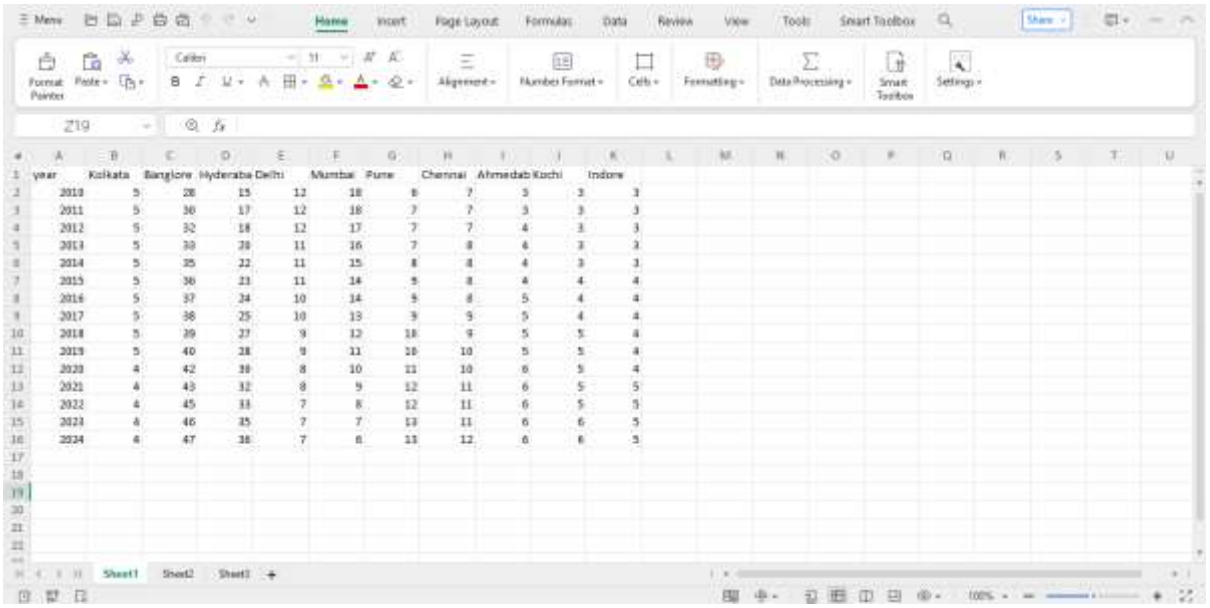

Figure 2: ExcelSheetRepresentingRecruitmentPercentageAcrossVariousLocationsinIndiaOverthe Past 14 Years

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:07/Issue:06/June-2025 Impact Factor- 8.187 www.irjmets.com

IV. RESULTS AND DISCUSSION

There cruitmentdatawasanalyzedandvisualizedusingTableautouncover trend sover thepast14yearsacross various IT skills and major Indian cities.

4.1 Year-wiseRecruitmentTrendsbySkillUsingScatterPlotting

ScatterplotswerecreatedinTableautorepresent year-wiserecruitmenttrendsfor differentITskillssuchas.NET, AI & ML, Angular, Blockchain, Cloud Computing, Cyber Security, DevOps, Java, and Python. These plots reveal patterns in the demand for each skill over time, making it easier to identifyrising and declining trends.

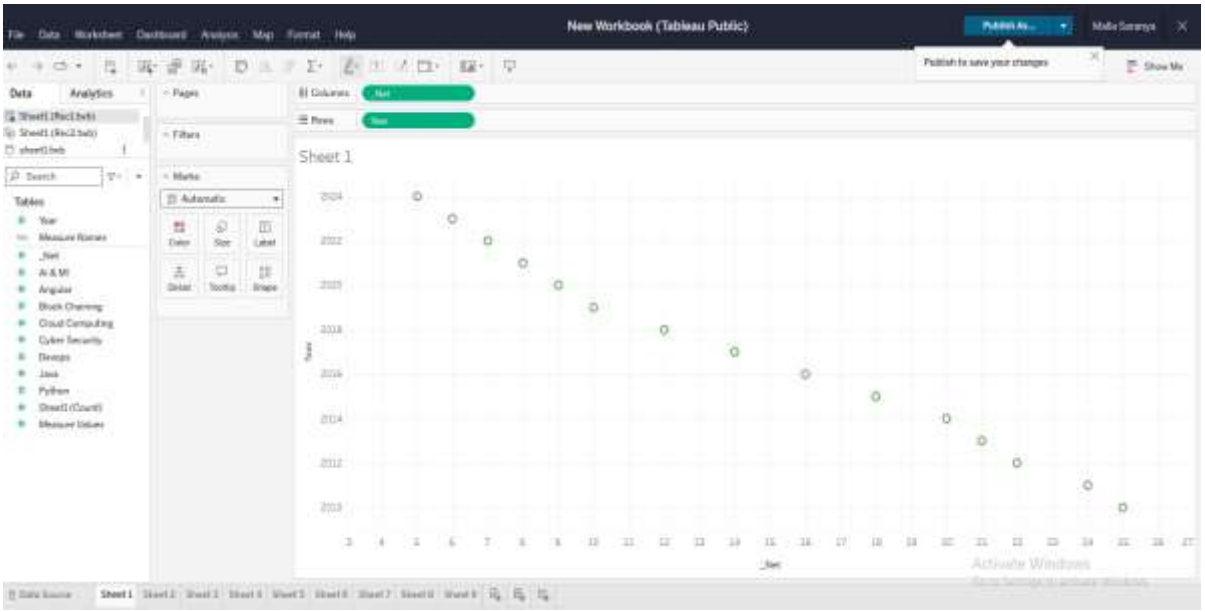

Fig 4.1.1: Year-wiseRecruitmentTrendfor.NETSkill

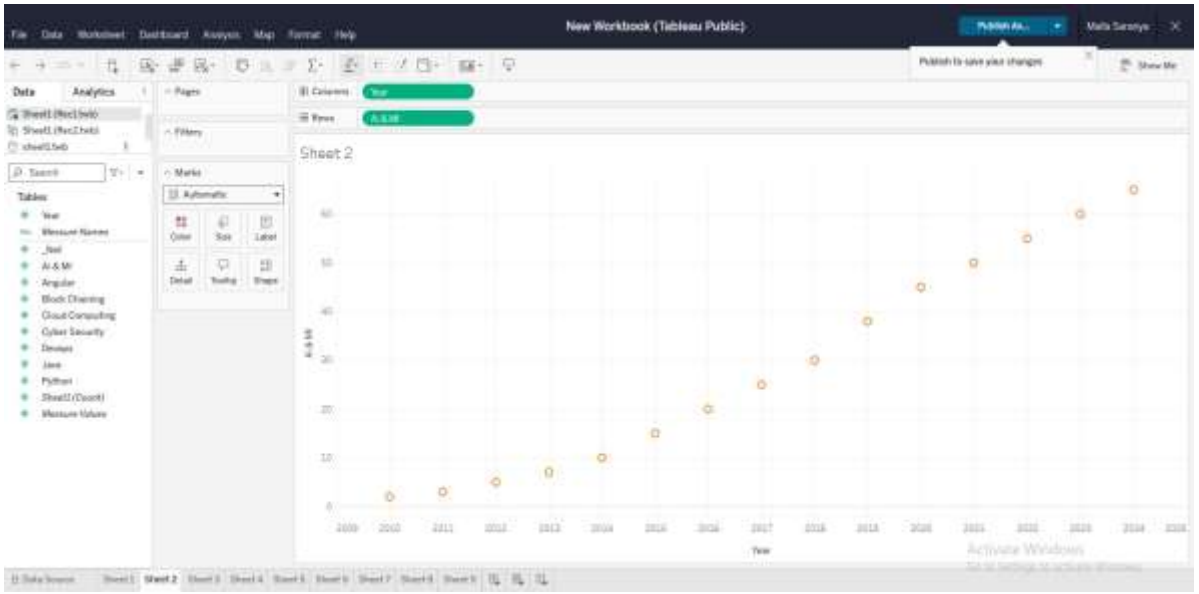

Fig 4.1.2: Year-wiseRecruitmentTrendfor AI&MLSkill

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:07/Issue:06/June-2025 Impact Factor- 8.187 www.irjmets.com

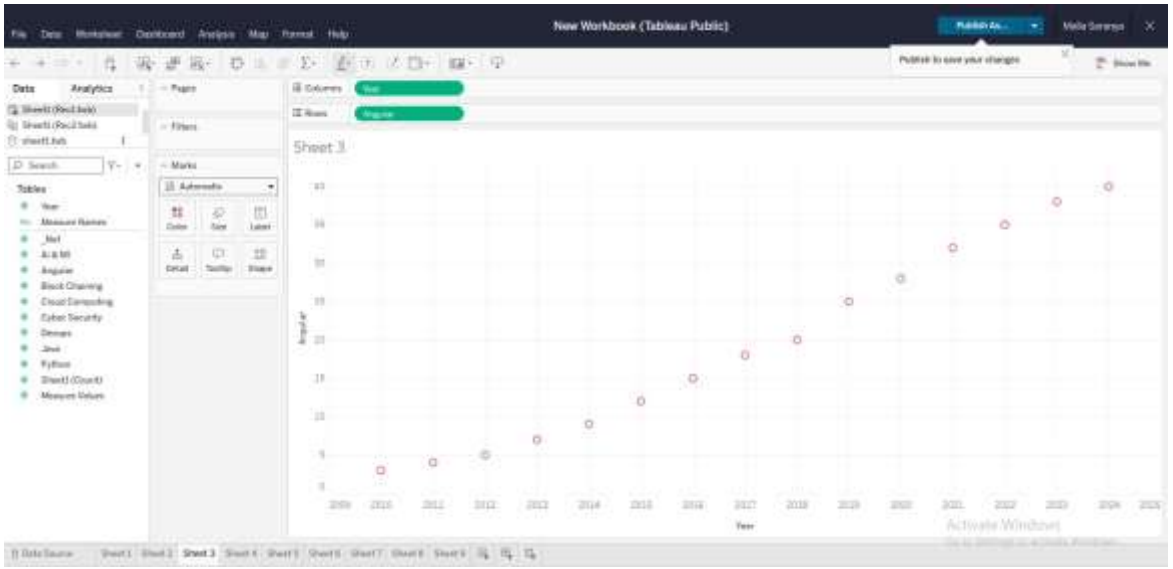

Fig 4.1.3: Year-wiseRecruitmentTrendforAngularSkill

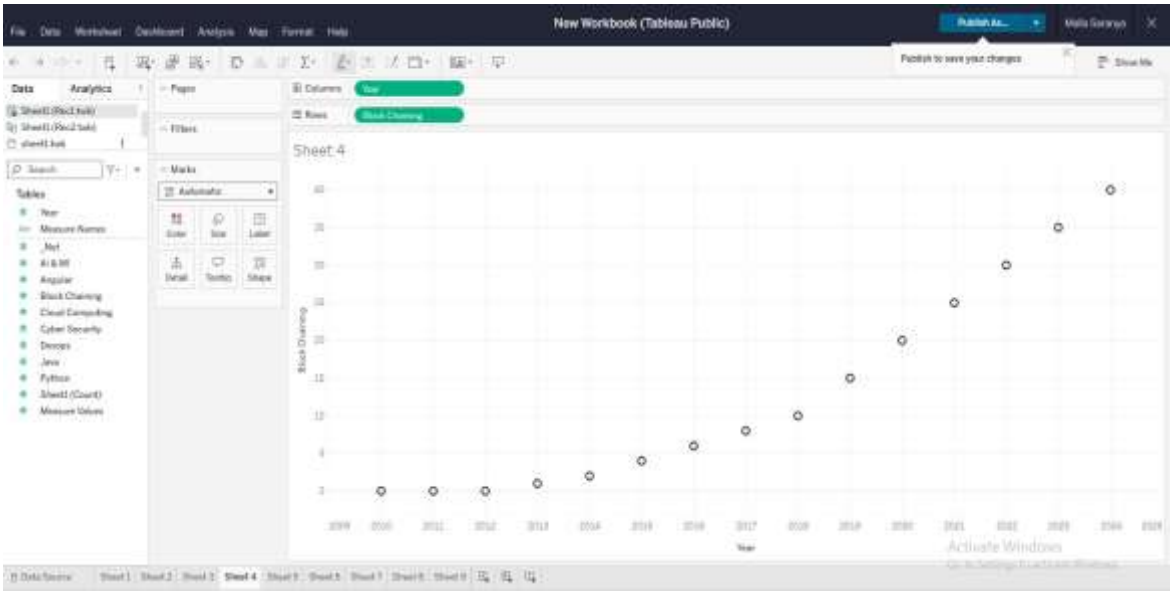

Fig 4.1.4: Year-wiseRecruitmentTrendforBlockchainSkill

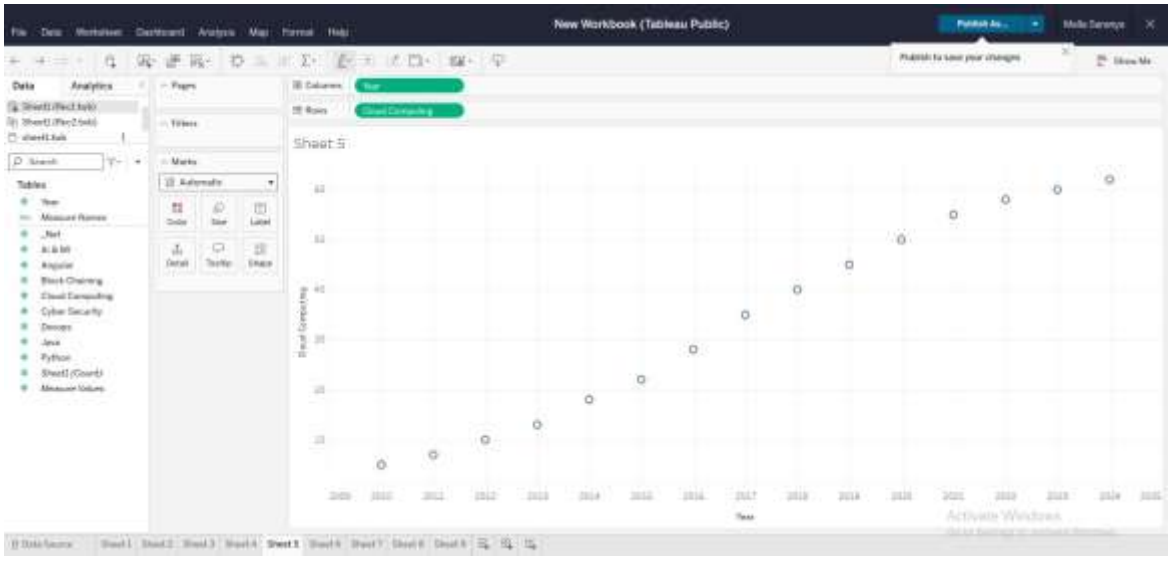

Fig 4.1.5: Year-wiseRecruitmentTrendforCloudComputingSkill

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:07/Issue:06/June-2025 Impact Factor- 8.187 www.irjmets.com

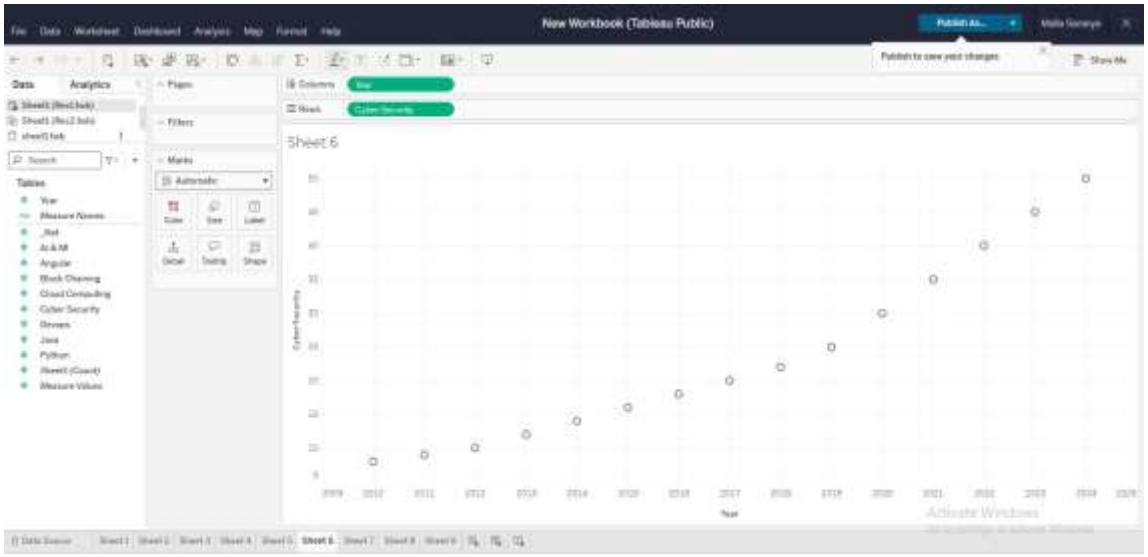

Fig 4.1.6: Year-wiseRecruitmentTrendforCyberSecuritySkill

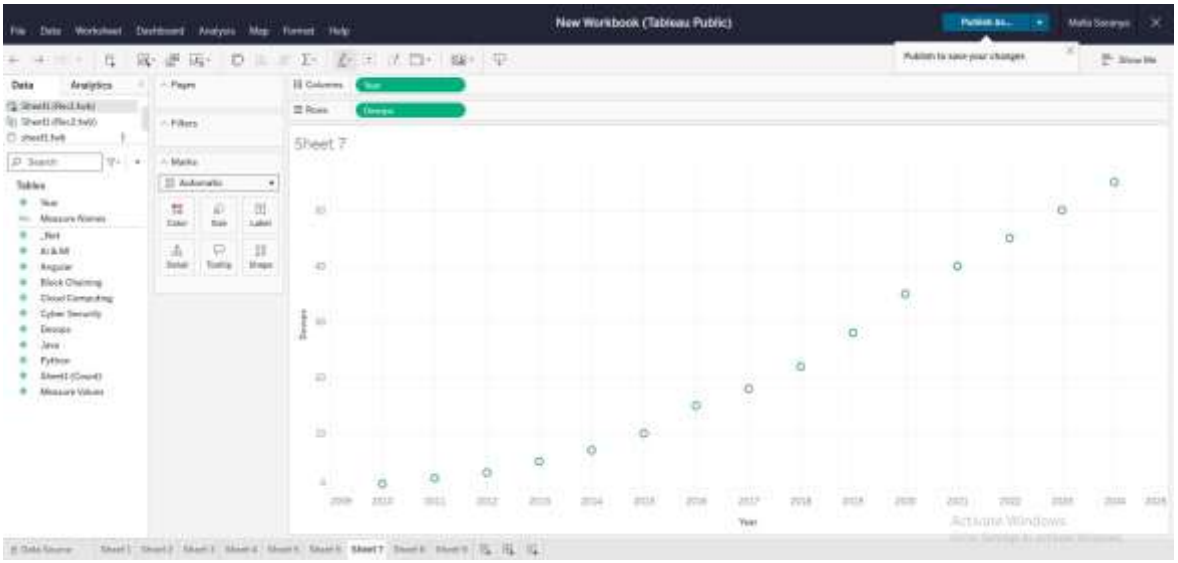

Fig 4.1.7: Year-wiseRecruitmentTrendforDevOpsSkill

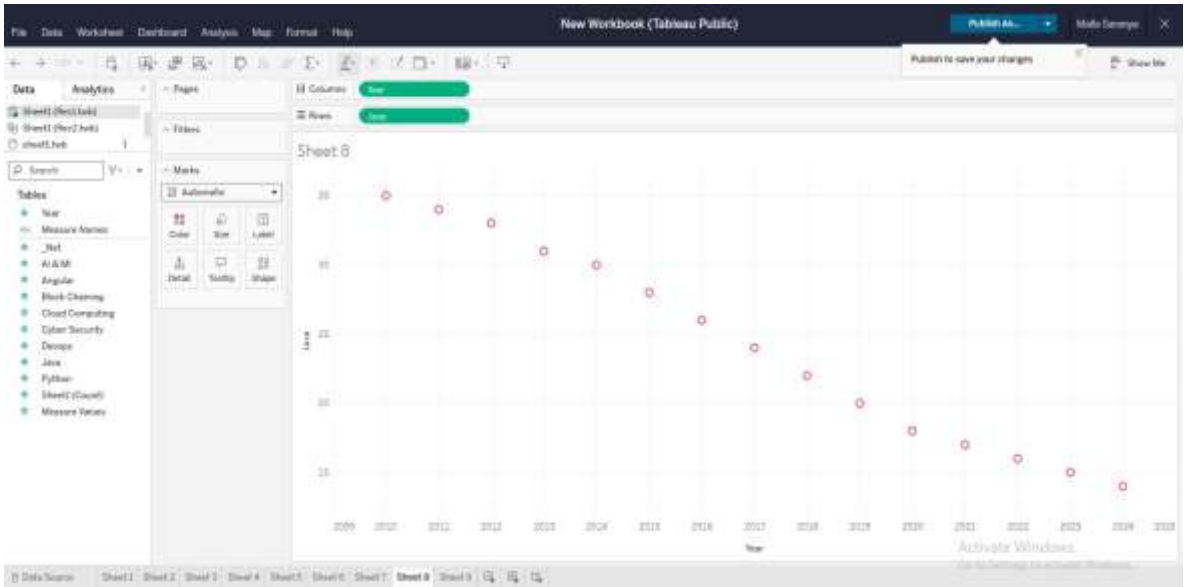

Fig 4.1.8: Year-wiseRecruitmentTrendforJavaSkill

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:07/Issue:06/June-2025 Impact Factor- 8.187 www.irjmets.com

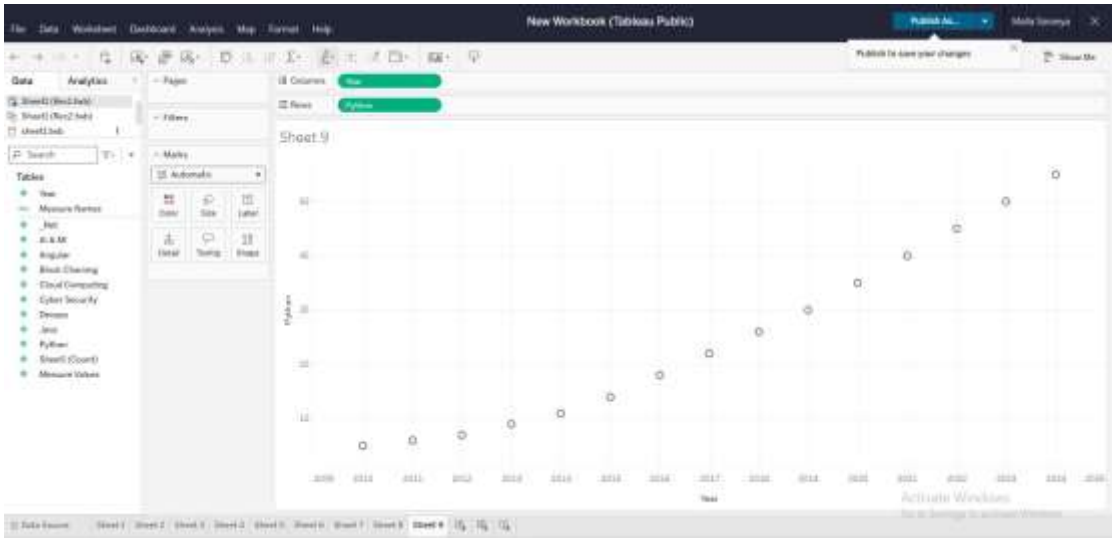

Fig 4.1.9: Year-wiseRecruitmentTrendforPythonSkill

4.2 Location-wiseRecruitmentPercentageUsingGeographicalMapping

Geographical maps were used to display recruitment distribution across different Indian cities. These visualizationshelp identify regional hiring hotspots and support location-based workforce planning.

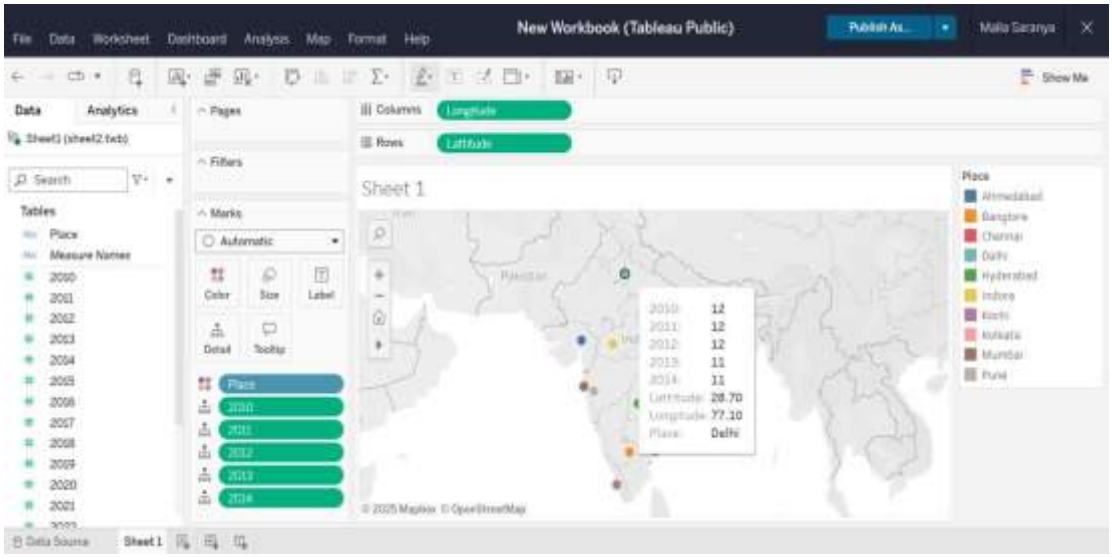

Fig 4.2.1: RecruitmentPercentageforDelhi

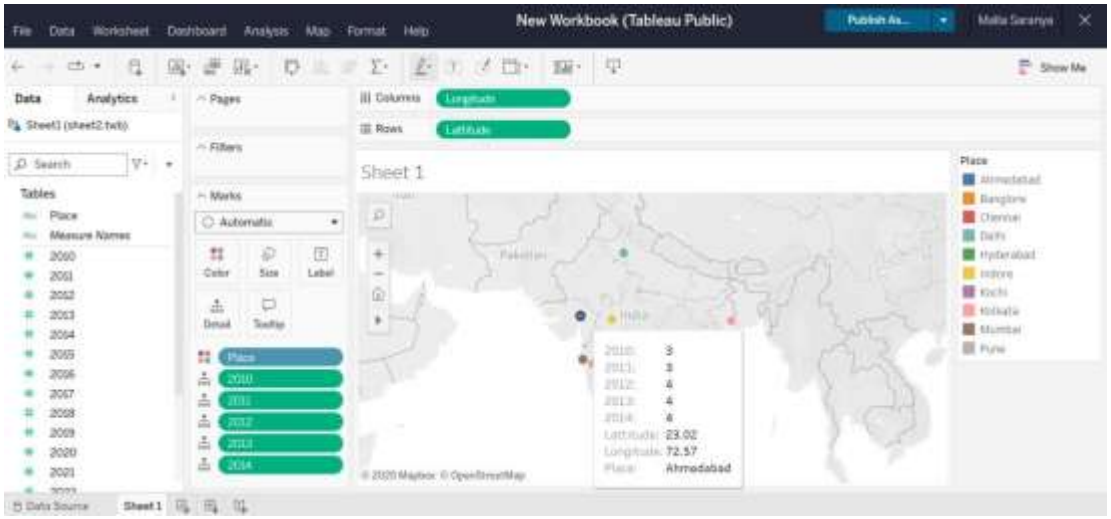

Fig 4.2.2: RecruitmentPercentageforAhmedabad

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:07/Issue:06/June-2025 Impact Factor- 8.187 www.irjmets.com

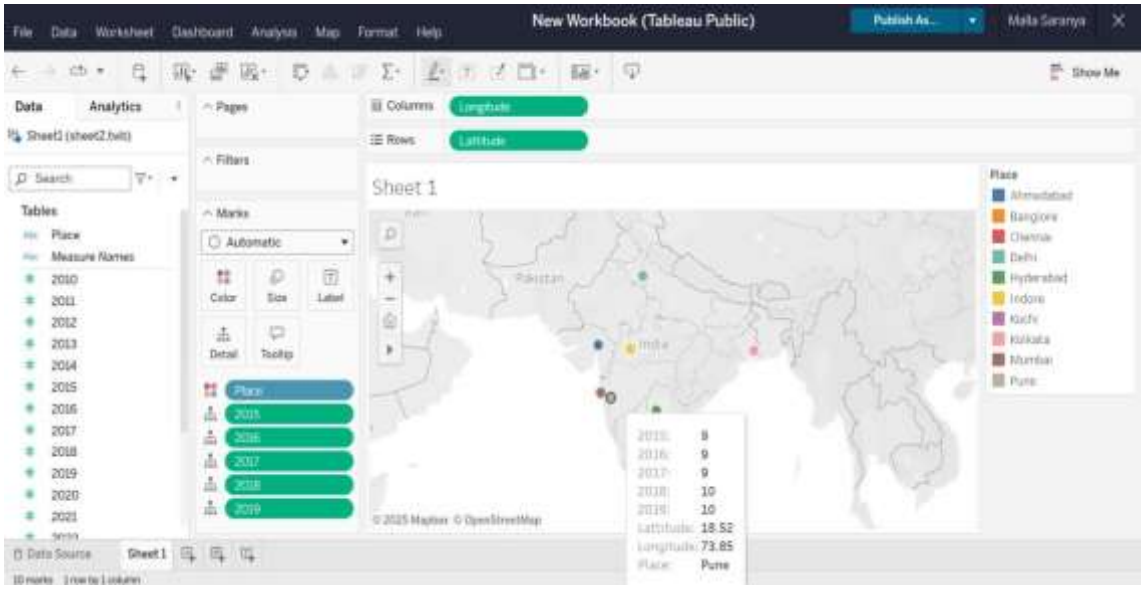

Fig 4.2.3: RecruitmentPercentageforPune

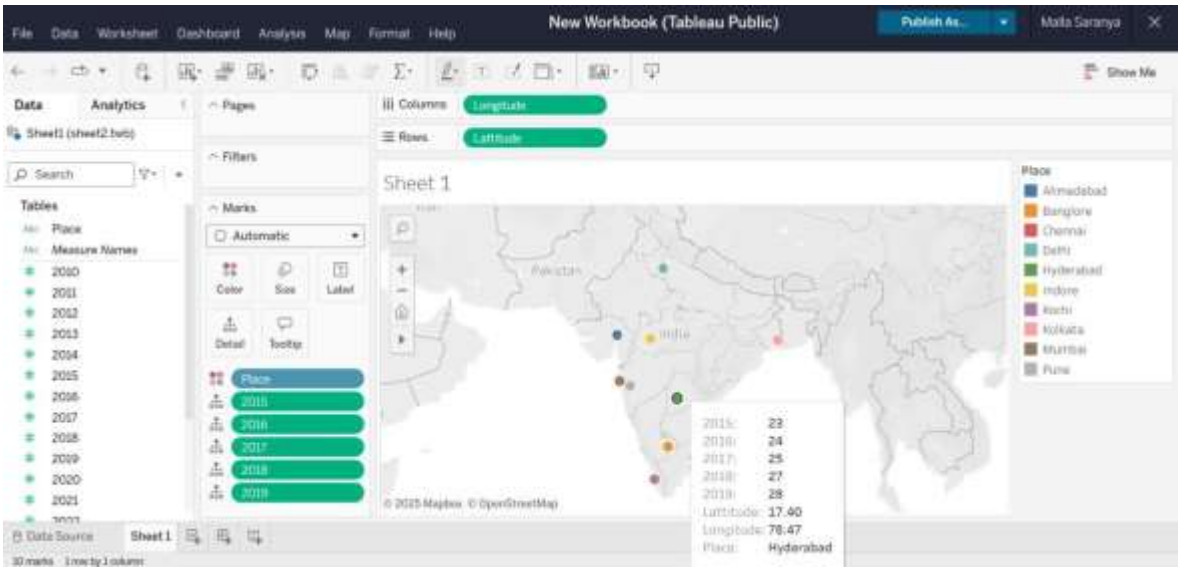

Fig 4.2.4: RecruitmentPercentageforHyderabad

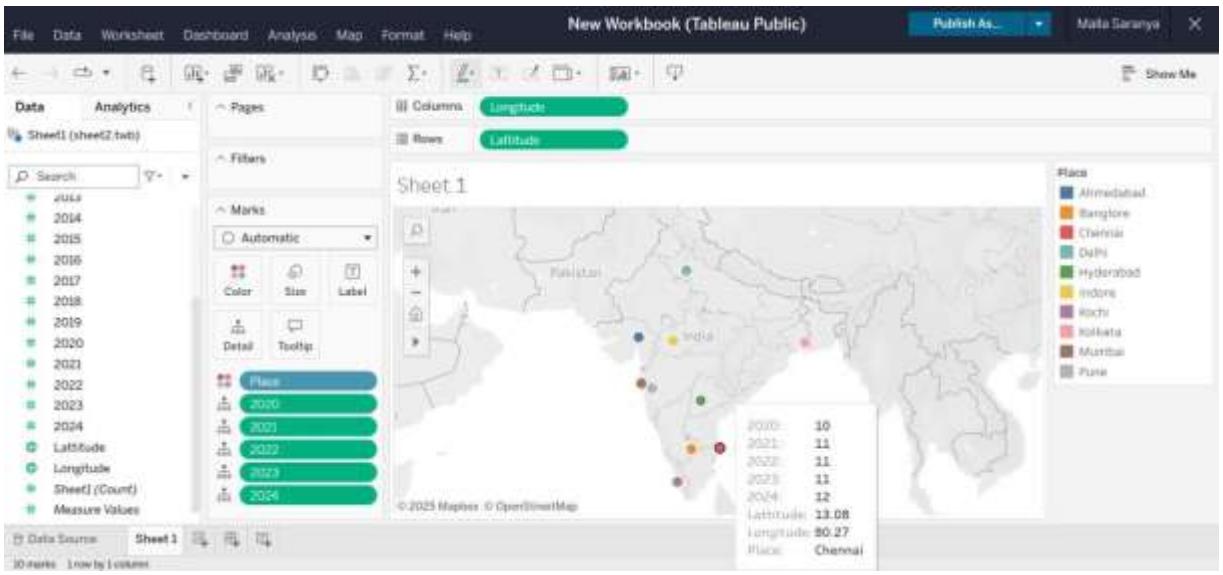

Fig 4.2.5: RecruitmentPercentageforChennai

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:07/Issue:06/June-2025 Impact Factor- 8.187 www.irjmets.com

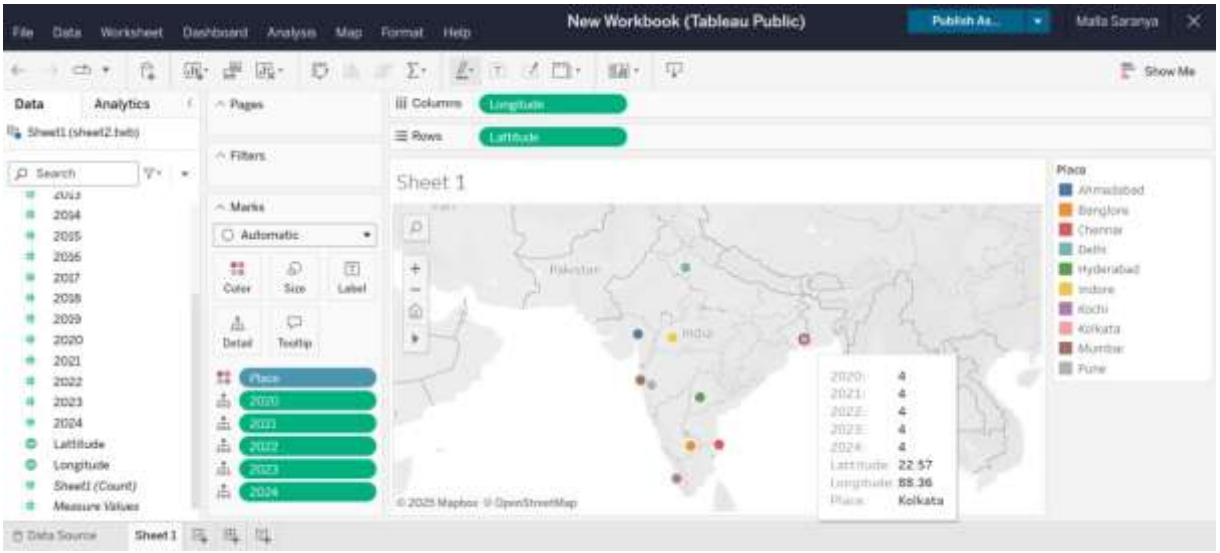

Fig 4.2.6: RecruitmentPercentageforKolkata

V. CONCLUSION

Thisprojectsuccessfullydemonstratesthe useofTableauasa powerfultoolforanalyzingrecruitment trendsin theIT sectorover the past14years. Byvisualizing data throughscatterplots andgeographicalmaps, wegained clear insights into skill-wise demand and city-wise hiring patterns.

The visual dashboards created in Tableau make complex data easily understandable and interactive for users such as HR professionals, students, and researchers. This enables informed decision-making regarding workforce planning and career focus.

The project also sets a foundation for future enhancements — including the integration of more cities, additionalskillsets, andevenglobalrecruitmentdata. Suchexpansionswouldenable deeper, real-timeanalysis and support a broader scope in IT workforce analytics.

ACKNOWLEDGEMENTS

We would like to express our heartfelt gratitude to our guide Mr. S.Sai Kumar, Assistant Professor,Department of IT, PVPSIT, for his constant support, valuable guidance, and encouragement throughout this project.

We are also deeply thankful to Dr. B. V. Subba Rao, Head of the Department, Information Technology, PVPSIT, for her continuous support, motivation, and for providing us the opportunity to carry out this project.

VI. REFERENCES

[1] https://www.tutorialspoint.com/excel/

[2] https://public.tableau.com/app/discover

[3] https://www.timeanddate.com/geography/longitulo-latitude.html

[4] https://www.latlong.net/