

# DATAFEST-2024

## PANEL DISCUSSION

## REPORT



**Pakistan Bureau Of Statistics**  
**Ministry of Planning Development and**  
**Special Initiatives**

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## Preface

DataFest 2024, held on October 21st and 22nd at the Pak-China Friendship Centre, marked a significant achievement in the Pakistan Bureau of Statistics' (PBS) ongoing mission to enhance data utilization for evidence-based decision-making. Under the visionary guidance of Prof. Ahsan Iqbal, Minister of Planning, Development & Special Initiatives, the event highlighted PBS's unwavering dedication to leveraging data as a driving force for Pakistan's development.



The festival brought together a wide array of participants, including representatives from international organizations, government and semi-government entities, private sector leaders, academia, research institutions, NGOs, civil society, and the IT and telecommunications industries. DataFest 2024 provided a vibrant platform for data scientists, statisticians, policymakers, and development experts to exchange ideas and explore data-driven solutions for improving Pakistan's social and economic planning.

The event emphasized the critical need for a robust and reliable data infrastructure to support evidence-based policymaking. Panel discussions spotlighted innovative approaches to harnessing data for solving real-world challenges and advancing sustainable development. This initiative reaffirmed PBS's commitment to fostering a culture of data-driven governance, inspiring cross-sector collaboration, and positioning data as a cornerstone of Pakistan's progress toward a sustainable future.

We extend our deepest gratitude to our esteemed partners and sponsors—UNFPA, UNICEF, The World Bank, FAO, UNHCR, ADB, and ILO—for their steadfast support, which was instrumental in turning this vision into reality. Their dedication reflects a shared commitment to leveraging data to drive sustainable development in Pakistan.

A special acknowledgment goes to Mr. Muhammad Sarwar Gondal (SI), Member Support Services and Resource Management, for his exemplary leadership and unwavering guidance, and to the DataFest Secretariat, led by Ms. Rabia Awan, DDG (DataFest/CPMU/PSLM), for their tireless efforts in ensuring the seamless execution of this landmark event.

As we celebrate the success of DataFest 2024, we look forward with optimism and determination, aiming to make this a recurring event that continues to "Unleash the Power of Data for Development." Together, we can harness the transformative potential of data to drive Pakistan's journey toward a brighter, more sustainable future.

**Dr. Naeem-uz-Zafar ((ستاره امتیاز))**

**Chief Statistician**

Pakistan Bureau of Statistics

Islamabad

## Acknowledgement

It is with great pride and appreciation that I acknowledge the success of the panel discussion held during the Data Festival 2024, organized by the Pakistan Bureau of Statistics. This event was a landmark occasion that brought together thought leaders, data practitioners, policymakers, and innovators to explore the transformative potential of data in shaping Pakistan's development trajectory.



The panel discussion served as a vibrant forum to address critical issues related to data generation, accessibility, and utilization. The rich exchange of ideas, innovative solutions, and diverse perspectives reflected the participants' commitment to harnessing data as a strategic asset for evidence-based decision-making. Key topics, such as improving data quality, fostering inter-agency collaboration, and leveraging technology for data-driven governance, were deliberated with remarkable depth and foresight.

I am particularly impressed by the focus on aligning national statistical efforts with global standards, including the Sustainable Development Goals (SDGs). The discussion underscored the importance of enhancing the capacity of our statistical systems to deliver timely, reliable, and disaggregated data to meet the evolving needs of policymakers and stakeholders.

I commend the organizing team for facilitating this impactful discussion and ensuring that the dialogue was both insightful and forward-looking. The ideas and recommendations emerging from this panel provide a valuable roadmap for strengthening our statistical infrastructure and fostering a culture of data-driven innovation in Pakistan.

I extend my gratitude to the esteemed panelists, moderators, and participants for their contributions to this event. A special note of gratitude goes to the focal person for their commendable efforts in coordinating the panel discussion, ensuring its seamless execution, and creating a platform for meaningful collaboration. Their dedication and professionalism were instrumental in making this event a resounding success. I encourage all departments and stakeholders to build upon the outcomes of this discussion and take collective action toward realizing the vision of a data-empowered Pakistan.

**Muhammad Sarwar Gondal (ستارہ امتیاز)**

**Member (SS/RM)**

Pakistan Bureau of Statistics

Islamabad





## 1 Introduction

The National Data Fest 2024, organized by the Pakistan Bureau of Statistics (PBS), marked a significant milestone in Pakistan's journey toward harnessing the transformative power of data for national development. Held from October 21st to 22nd at the Pak China Friendship Centre in Islamabad, the event brought together experts, policymakers, researchers, and enthusiasts from diverse fields. Among its many highlights, the panel discussions emerged as a focal point for exploring critical national challenges and showcasing how data can be a catalyst for informed decision-making and sustainable solutions.



These panel discussions were carefully organized to align with the overarching themes of the festival, addressing pressing issues such as social equity, governance, fiscal resilience, climate adaptation, and data integration. Each session featured renowned national and international experts who shared their knowledge and practical experiences, fostering meaningful dialogue among attendees. The discussions provided a unique platform for bridging gaps between data producers, users, and policymakers, while promoting collaborative approaches to leveraging data for societal progress.



## 2 Objectives of the Panel Discussions

The panel discussions at Data Fest 2024 successfully achieved their objectives by:

- 1. Promoting Data-Driven Decision-Making:** The sessions highlighted practical examples

of how data has been and can be utilized to inform policies and programs addressing societal challenges.

2. **Fostering Cross-Sector Collaboration:** Stakeholders from government, academia, civil society, and international organizations came together, fostering a spirit of collaboration and mutual learning.
3. **Addressing Data Gaps:** Experts identified key data gaps, particularly in areas such as climate change, governance, and social equity, and proposed actionable strategies to address them.
4. **Showcasing Best Practices:** Success stories and best practices in data collection, analysis, and visualization were shared, inspiring replication and scalability.

### 3 Key Themes of the Panel Discussions

The panel discussions revolved around the festival's central themes, ensuring a comprehensive exploration of topics crucial to Pakistan's socio-economic development:

1. **Data for Life and Equity:** Sessions examined how demographic and education data can address challenges in social equity, healthcare access, and poverty alleviation.
2. **Harnessing Data for Fiscal Resilience:** Discussions centered on revenue generation, expenditure optimization, and enhancing fiscal transparency and accountability.
3. **Data for Governance and Growth:** Panels highlighted innovative uses of data for effective governance, improved service delivery, and economic growth.
4. **Climate Change, Adaptation, and Disaster Risk Management:** Experts delved into data-driven approaches for climate resilience, disaster preparedness, and mitigation strategies.
5. **Data Integration and Visualization for Development:** The focus was on interdisciplinary data integration and visual analytics to support evidence-based decision-making.





## 4 Panel Discussion Schedule

The panel discussions at Data Fest 2024 were thoughtfully scheduled to ensure a comprehensive exploration of diverse themes and topics. Experts and participants engaged in insightful conversations across various sessions, each addressing critical issues through the lens of data-driven solutions. The following table outlines the schedule of these discussions, including their themes, topics, and timings.

Panel Discussion	Theme	Topic	Day	Time
1	Data for Life & Equity	Harnessing Demographic Data for Policy and Legislation to addressing Pakistan's high population Growth rate	1	14:00 to 16:00
2		Welfare Monitoring for Better Policy Decision-making	2	11:00 to 13:00
3	Climate Change, Adaptation, and Disaster Risk Management	Climate change issues, data gaps	2	11:00 to 13:00
4	Data Integration and Visualization for Development	Bridging Data Gaps for Inclusive Data Systems for Effective Policy Making	2	14:00 to 16:00
5	Data for Life & Equity	Data Integration for Growth and Development	2	14:00 to 16:00
6	Data for Life & Equity	Education: Quality and Access	1	14:00 to 16:00

## Data for Life and Equity

Harnessing Demographic Data for Policy and Legislation to Addressing Pakistan's High Population Growth Rate



## 5 Panel Discussion 1

### 1. Theme: Data for Life & Equity

#### Topic: Harnessing Demographic Data for Policy and Legislation to addressing Pakistan's High Population Growth rate

**Focal Person:** Mr Amjad Javed Sandhu  
(DG Admn PBS)









### 5.1 Concept Note

Pakistan, with a population of 241.5 million (2023 Census) and a rapid annual growth rate of 2.55%, faces significant challenges in managing the socio-economic impacts of this unprecedented increase. The growing population is intensifying demands on health, education, housing, and employment, while accelerating urbanization and environmental degradation. Effective policymaking and legislation must be rooted in robust demographic data to address these challenges and capitalize on opportunities such as the youth bulge, which comprises 64% of the population under 30. However, gaps in data collection, fragmented systems, and limited capacity hinder the use of data in evidence-based decision-making.

This panel will explore how high-quality demographic data can inform targeted policies to address the implications of population growth, with a focus on maternal and child health, urban planning, and resource allocation. Panelists will highlight key barriers, such as data gaps in underserved areas, the absence of a centralized data hub, and capacity constraints in data analysis and usage. The discussion will emphasize the need for integrated systems, gender-disaggregated and age-specific data, and technological innovations to enhance data quality and accessibility.

The session aims to generate actionable recommendations for strengthening demographic data systems, fostering interagency collaboration, and integrating data-driven insights into legislative frameworks. By addressing these challenges, the panel seeks to contribute to sustainable development and improve the quality of life for Pakistan's rapidly growing population.

## 5.2 Panelist Profile

S.No	Name	Description	
1	Dr. Luay Shabaneh, Country Representative, UNFPA	<b>Keynote speaker</b>	
2	Dr. Faisal Abbas, Director, Center for Population and Wellbeing Studies, HoD, School of Social Sciences & Humanities (S3H), NUST	<b>Moderator</b>	
3	Mr. Petrick Gerland, Chief Population Estimates and projection section, Population Division, Department of Economic and Social Affairs, United Nations	<b>Panelist</b>	
4	Ms. Shahanza Wazir Ali, President SZABIST, Larkana Campus.	<b>Panelist</b>	
5	Dr. Zeba Sathar, Country Director of the Population Council in Islamabad, Pakistan	<b>Panelist</b>	
6	Prof. Dr. Mohammad Nizamuddin (S.I), Director of the Centre for Public Policy and Governance (CPPG), FC College	<b>Panelist</b>	



## 5.3 Agenda

Structure	Format	Focal person
<b>Introduction</b> (10 minutes)	<ul style="list-style-type: none"> <li><b>Welcome and Opening Remarks:</b></li> <li><b>Panelist Introductions:</b></li> </ul>	<b>Dr. Faisal Abbas</b> , Director, Center for Population and Wellbeing Studies, HoD, School of Social Sciences & Humanities (S3H), NUST.
<b>Presentation - 1</b> (10 minutes)	Welfare Monitoring for Better Policy Decision-making	Dr. Luay Shabaneh, Country Representative, UNFPA
<b>Structured Discussion</b> (30-40 minutes)	Discussion with Panelists	<p><b>Dr. Faisal Abbas</b> <b>Panelist</b></p> <p><b>Mr. Petrick Gerland</b>, Chief Population estimates and projection section, Department of Economic and Social Affairs, United Nations</p> <p><b>Dr. Asif</b>, Chief Health, Ministry of Planning Development and Special Initiatives</p> <p><b>Dr. Zeba Sathar</b>, Country Director of the Population Council in Islamabad, Pakistan.</p> <p><b>Dr. Durre Nayab</b>, Joint Director and Director Research at the Pakistan Institute of Development Economics (PIDE).</p> <p><b>Prof. Dr. Muhammad Nizamud din (SI)</b> Pro-Rector, Superior University</p> <p><b>Mr. Asad Baig</b>, Media</p>
<b>Audience Q&amp;A</b> (15 minutes)	<ul style="list-style-type: none"> <li><b>Interactive Session of Q &amp;A</b></li> <li><b>Panelists' Answers:</b></li> </ul>	<b>Dr. Faisal Abbas</b> panelists
<b>Conclusion</b> (5 minutes)	<ul style="list-style-type: none"> <li><b>Summary of Key Takeaways</b></li> <li><b>Closing Remarks</b></li> <li><b>Thank You and Wrap-Up</b></li> </ul>	<b>Dr. Naeem uz Zafar</b> , Chief Statistician, PBS <b>Dr. Faisal Abbas</b>

## 5.4 Discussion

The session of panel discussion was started with the recitation of Holy Quran. Then **Dr. Naeem uz Zafar**, Chief Statistician, PBS delivered a welcome address. The Chief Statistician highlighted Pakistan's high population growth rate of 2.55% as a significant concern, urging a collective effort to think, discuss, and develop solutions. He emphasized that population growth impacts every aspect of life and framed the discussion within the broader context of data integration and its role in effective policy-making.

**Dr. Luay Shabaneh**, Key Note Speaker, highlighted the importance of data in our daily life as well as for policy planning. He said in his keynote address that why data is not an integral part of informed policy formulation. He focused on three main challenges; (i) Population size might not be a big challenge but inability to harness data to manage development plans. Policy priorities and development path tell us if this population growth and youth bulge is dividend or not. He pointed out that rapid population growth is consuming resources meant for development. (ii) Dr. Luay emphasized that instead of forming structures, Government and donor agencies must focus on performance of these structures with better governance and accountability. (iii) He said that it is better now to focus on evidence-based decision making instead of focusing on ideology. As demographic and development landscapes change, the need for continuous access to updated data becomes crucial. The speaker highlighted the lack of accountability and data, what have achieved and what to do for coming days, opportunities for female workers, population growth rate and role of institutions to reduce the population growth. He called for greater access to data for analysis to guide policy decisions effectively, setting the tone for the panelists' insights.

**Dr. Faisal Abbas**, carried forward Dr. Luay's points by summarizing the significance of data in understanding population dynamics. He reiterated that "data speaks, and we need to listen" and refocused the discussion from generalized debates to a data-driven approach. He emphasized that the challenge is not just population size but finding a sustainable development path, inviting the panelists to delve deeper into how data could drive effective policy-making. Dr. Abbas opened the discussion with comments by panelists.

**Begum Shanaz Wazir Ali** said that data speaks to inform our view point and development level. She highlighted the Pakistan's low ranking in the Human Development Index i.e. 164 out of 191 countries and stressed the need to prioritize human development policies. She also highlighted the issues of out of school children, poor health indicators, malnutrition, and misleading averages at country level. She urged decision makers to study reports like those by UNDP to better understand Pakistan's standing globally position. She said that demographic data should guide improvements in human development outcomes. She further emphasized that human development policies should focus on children, advocating for reforms to programs such as the lady health worker's initiative, which she felt was straying from its original purpose. She highlighted the need for data-driven approaches to refocus development efforts on vulnerable population. She emphasized that best economic decisions are required to create employment through industrial development for the improvement of human capital and resource. Begum Shanaz Wazir Ali also focused on intersectoral

collaboration among education, health, water and sanitation, and population welfare departments for better results. She highlighted that although data shows good stories but there is need to study through data that how to change governance patterns to implement the informed decisions.

**Dr. Nizamuddin** highlighted a growing human resource problem as many degree holders in Pakistan remaining unemployed. He focused on issues of historical population planning and some missing links specifically not focusing on outcomes, low investment, and less developed infrastructure in rural and remote areas. He said that population control strategy must be implemented through health facilities available at door step, primary health care, and equity of human capital. The role of education and human capital formation for longer term development and wellbeing is an important aspect. He emphasized the need to enhance skills development and training to better align education policies with market demands at local and global levels. He focused on usage of data for education and employment to drive reforms and policies to solve the growing issue of underutilization of human capital in the country. Dr Nizam also emphasized reviving once established but non-functional Population Development Commission with relevant stakeholders being its members including academia as well. One of the important points of the panel discussion was to emphasize on the decentralization of data and its availability to relevant departments which helps in creating coordination and ease in access. He also emphasized on the utilization of data sets produced by nongovernment actors, if these are properly examined by the PBS. He asked to use artificial intelligence (AI) to create a Data Hub at federal level.

**Dr. Zeba Sathar** mentioned that 2002 population policy of Pakistan was to achieve population stabilization till 2020 but the last two censuses sparked data debate as the growth rate has reversed. She mentioned about programs of lady health workers and BISP etc. but there is need of regular surveys to get the latest growth rate. She called for the resumption of Pakistan's Demographic Survey (PDS) regularly. She emphasized that PBS should be made completely independent to meet the country's specific data needs with demographic data through playing a central role in shaping policies that are responsive to Pakistan's evolving challenges. Dr. Zeba focused on issues of data, its continuity and importance in population planning, access to public data, and its usage for policy planning. There is a disconnect between public policy making at the federal and provincial government level while PBS data is available for such purpose which needs to be coherent and amalgamated. PSLM Survey is a very rich data source and it should be made available and utilized for data informed policy planning as it is district level representative. Although Dr. Zeba focused on the missing element of fertility data in the PSLM module which needs to be incorporated in its future rounds, if PDS cannot be conducted regularly but she also advised on interconnect PBS data and public policy, PBS surveys like PSLM including population growth rate, democratization of data, activation of Users' Council for feedback, digital census frame for quick access, open data access for using the power of data for policy planning. Dr. Zeba engrossed that not only access to data in a timely manner is important but also its use in policy making is pivotal. She also urged to share data with an easy approach, access to micro data, media coalition for data stories, and combine all the data at one place for easy access and utilization.

**Mr. Petrick Gerland** discussed the importance of data projections, availability, and access to data for making such projections. He emphasized that these projections help the government and implementing agencies to learn from the past, due course corrections in the present, and plan ahead for the future. It is demand of the day to make demographic data accessible and shareable to facilitate better policy making. He highlighted the importance of using data not only for analysis but to actively influence policy decisions, urging Pakistan to improve its data sharing mechanisms to enhance the impact of development policies. He mentioned about the challenges to access the data, to understand the past and recent baseline, characteristics and distributional data, accurate census and trends at national and subnational levels to understand the changes, registration of people for latest data like new born, children, and families through vital registration system. He mentioned about challenges like autonomy to generate data for local communities, using data for policy planning, asking projections for future, implementing interventions and policies, data based resource allocation, climate change and flooding predictions, economic implications, infrastructure, and resilience.

**Mr. Asad Baig** highlighted the lack of data journalism in Pakistan, which hampers effective communication of data-driven stories that could influence policy. He stressed the need for resources to improve data accessibility and interpretation, which in turn could drive better public understanding and decision making. Mr. Asad focused on how data journalism can contribute to better understanding of the policy priorities. Also, his remarks were much focused on importance of data, access to data, its political nature, and who have access to data and how to better use data for public policy making. He emphasized on extensive research internationally through UNFPA, UNDP etc. while local channels for local issues. Local media must talk about capacity issue for planning based on data which may become an entry point in local media debate. Amazing work is done by community workers for local stories which can be emphasized more for public interest based journalism using data.

In the end, Moderator **Dr Faisal Abbas** emphasized that population changes bring challenges for example of governance, accountability, allocation, management, and distribution of scarce resources. Hence data must be integral part of making informed policy decisions for which PBS may take the core responsibility for provision of required data sets according to the data requirements. Finally, moderator thanked the panelists and invited Mr. Sarwar Gondal (SI), Member, PBS, for souvenirs and shields distribution among the panelists.



## 5.5 Glimpse of Panel Discussion 1





## 5.6 Actionable Points

1. Centralized Data Hub by PBS through interagency collaboration.
2. Data management training to enhance capabilities.
3. Urge public and government sectors to invest in data.
4. Data stories for media through data insights using AI etc.
5. Regular surveys like PDS etc.
6. Fill the data gaps after detailed studies.

## 5.7 Conclusion

In conclusion, the panelists underscored the critical role of demographic data in shaping Pakistan's policy and legislation, particularly in addressing challenges such as rapid population growth, unemployment, and human development. They highlighted the necessity of a robust and continuously updated data infrastructure as a foundation for effective decision-making. Transparency and accessibility in data collection, sharing, and utilization were emphasized as pivotal to driving policies in key sectors such as education, health, and employment. The panel advocated for the continuation of regular demographic surveys and a strong focus on human development, stressing that data should be at the core of future policy-making in Pakistan. Additionally, the establishment of a centralized data hub accessible to all stakeholders was recommended to enhance transparency and ensure the effectiveness of policy interventions.



## 5.8 Shield Distribution



# Data for Life and Equity

Welfare Monitoring for Better  
Policy Decision Making





## 6 Panel Discussion 2

Theme: Data for Life & Equity

### Topic: Welfare Monitoring for Better Policy Decision Making

**Focal Person: Ms Rabia Awan**

(DDG Datafest, PSLM, PBS)



### 6.1 Concept Note







Data for Life and Equity" centers on advancing welfare monitoring to enhance policy and decision-making processes. This theme emphasizes leveraging high-frequency monitoring techniques and alternative data sources to inform public investment and development strategies. By integrating innovative methodologies such as spatial data, remote sensing, telecom data, administrative records, and high-resolution poverty mapping, it aims to bridge gaps between traditional surveys and censuses, offering actionable insights into poverty, equity, and development indicators.

The discussion will showcase frontier possibilities in welfare monitoring, highlighting the potential of satellite imagery and mobile data analytics to provide innovative solutions for equitable development. Expert presentations and panel discussions will address how diverse data sources can inform prioritization of needs by governments, donors, and development partners, ensuring targeted and impactful interventions.

Panelists, including economists, statisticians, and data scientists, will explore the transformative potential of integrating alternative data methods into policy frameworks. The session also provides a platform for interactive dialogue, promoting collaboration and knowledge exchange among key stakeholders. Closing reflections will underscore the importance of data-driven approaches in fostering equity and driving sustainable development.

The session aims to generate actionable recommendations for strengthening demographic data systems, fostering interagency collaboration, and integrating data-driven insights into legislative frameworks. By addressing these challenges, the panel seeks to contribute to sustainable development and improve the quality of life for Pakistan's rapidly growing population.

## 6.2 Panelist Profile

S.No	Name	Description	
1	Mr. Bilal Malaeb, World Bank	<b>Moderator</b>	
2	Prof Rashid Memon, Qatar University	<b>Panelist</b>	
3	Ms. Shabhano Hameed, Financail inclusion Expert anf former CEO of Prosper Technologies)	<b>Panelist</b>	
4	Ms. Christina Wieser Senior Economist World Bank	<b>Panelist</b>	
5	Mr. Umer Malik, Policy Analyst, Development Policy Unit	<b>Panelist</b>	
6	Mr. Veronique Lefebvre, Director of Data Analysis Flowminder	<b>Panelist</b>	
7	Dr. Naeem uz Zafar, Chief Statistician, PBS, Islamabad	<b>Panelist</b>	

## 6.3 Agenda

Structure	Format	Focal person
<b>Introduction</b> (10 minutes)	<ul style="list-style-type: none"> <li>▪ <b>Welcome and Opening</b></li> <li>▪ <b>Remarks:</b></li> <li>▪ <b>Panelist Introductions:</b></li> </ul>	<b>Mr. Bilal Malaeb</b> , World Bank
<b>Presentation - 1</b> (10 minutes)	Welfare Monitoring for Better Policy Decision-making	<b>Dr Rashid Memon</b> <b>Dr Veronique Lefebvre</b>
<b>Structured Discussion</b> (30-40 minutes)	Discussion with Panelists	<b>Mr. Bilal Malaeb</b> , World Bank Panelist <b>Dr. Rashid Memon</b> , Assistant Professor Qatar University <b>Ms. Shabhano Hameed</b> , CEO of Prosper Technologies <b>Mr. Irfan Rafiq</b> , Director, National Socio-Economic Registry <b>Mr. Umar Malik</b> Policy Analyst, Development Policy Unit <b>Veronique Lefebvre</b> , Director of Data Analysis Flowminder <b>Dr. Naeem uz Zafar</b> , Chief Statistician, Pakistan Bureau of Statistics Ms. Sonia Satti,
<b>Audience Q&amp;A</b> (15 minutes)	<ul style="list-style-type: none"> <li>▪ <b>Interactive Session of Q &amp;A</b></li> <li>▪ <b>Panelists' Answers:</b></li> </ul>	<b>Mr. Bilal Malaeb</b> , World Bank Panellists
<b>Conclusion</b> (5 minutes)	<ul style="list-style-type: none"> <li>▪ <b>Summary of Key Takeaways</b></li> <li>▪ <b>Closing Remarks</b></li> <li>▪ <b>Thank You and Wrap-Up</b></li> </ul>	<b>Dr. Naeem uz Zafar</b> , Chief Statistician, Pakistan Bureau of Statistics

## 6.4 Discussion

- **Defining Welfare and Its Measurement**

The session began by addressing the concept of welfare and how it is measured. Dr. Bilal Malaeb emphasized that welfare economics goes beyond just poverty, it encompasses broader socio-economic indicators such as education, health, employment, and access to services. Dr. Bilal highlighted that welfare measurement should reflect both positive (e.g., education, health, jobs) and negative (e.g., poverty, inequality) indicators. The concept of "welfare monitoring" thus entails understanding the multidimensional aspects of well-being.

Dr. Naeem Uz Zafar from the Pakistan Bureau of Statistics (PBS) added that welfare monitoring should be grounded in solid, evidence-based policy making. He highlighted the role of national statistical bodies like PBS in providing accurate, timely data to inform policy interventions, especially in resource allocation for health, education, and poverty alleviation. Dr. Naeem Uz Zafar stressed that welfare monitoring is not just a data exercise but a tool for guiding development efforts effectively.

- **Traditional Data vs. Alternative Data Sources**

The panelists discussed the limitations of traditional data sources, such as household surveys, which though valuable, are often infrequent and lack granularity. Dr. Christina Weiser from the World Bank elaborated on how traditional surveys are essential but insufficient to capture real-time changes in welfare. She advocated for the integration of alternative data sources, such as satellite imagery, mobile data, and administrative records, to complement traditional surveys.

Dr. Naeem Uz Zafar added that the 2023 digital census conducted by PBS laid the foundation for more dynamic welfare monitoring. He noted that PBS now has geo-tagged data for over 40 million structures across Pakistan, which can be used in combination with other (non-traditional) data sets to understand socio-economic conditions at the local level. He emphasized that such innovative data integration is essential for better planning and decision-making by provincial governments.

- **Innovative Approaches to Welfare Monitoring**

Dr. Rashid Memon discussed his research on using electricity consumption as a proxy for measuring economic activity and welfare. In his study, he compared electricity consumption data with nightlight satellite data to identify low-income areas. He found that electricity consumption data provided more accurate insights into household welfare than nightlight data, which often misrepresents economic activity in residential areas. His approach demonstrated the potential of using unconventional data sources to monitor living standards



in real-time.

Ms. Veronique presented another innovative approach by showing how mobile phone data can track population movements and inform welfare decisions. She explained how call data records (CDRs) can provide insights into economic activities, migration patterns, and even responses to disasters. Such data, if combined with traditional methods, can enable governments and organizations to target interventions more effectively during crises.

- **Data Integration Challenges and Privacy Concerns**

The integration of alternative data sources presents several challenges, particularly concerning data privacy and the need for collaboration between public and private sectors. Dr. Naeem Uz Zafar emphasized the importance of data standardization and the role of PBS in ensuring that the data collected and used across sectors maintain consistency and privacy. He noted that while PBS traditionally serves as the custodian of official statistics, it is increasingly collaborating with private sectors, such as telecom companies, to integrate big data for welfare monitoring.

Ms. Shahbano Hamid highlighted the private sector's role, noting that companies are often willing to share data if clear protocols and incentives are established. She urged policymakers to establish frameworks that encourage data sharing while safeguarding public interest and privacy.

- **The Role of the Private Sector**

Ms. Shahbano Hamid discussed how the private sector is sitting on vast amounts of valuable data that can be used for welfare monitoring, such as financial transactions, telecommunications data, and digital lending records. She advocated for greater public-private partnerships to unlock this potential. Ms. Shahbano noted that the telecom industry, in particular, can provide insights into economic behavior and social mobility by analyzing communication patterns and mobile money usage.

She also cautioned that data must be used ethically. Private companies, she argued, should not monopolize data or use it solely for profit. Instead, there should be a framework where data is used for public good, particularly in designing financial products for marginalized communities.

- **Collaboration Across Sectors**

The discussion emphasized the importance of collaboration across sectors—government, academia, international organizations, and the private sector. Mr. Omar Akhaq Malik from UNDP highlighted the role of development organizations in supporting governments to

develop technical capacities and implement data-driven decision-making processes. He shared examples of how UNDP has worked with governments in public expenditure management by integrating multiple datasets to monitor the impact of social programs on vulnerable communities.

Dr. Naeem Uz Zafar reinforced this by noting that PBS is actively seeking partnerships with the private sector and academia to build an integrated data ecosystem. He cited examples of collaborations with provincial governments in using geospatial data to optimize resource allocation in education and health. He argued that such collaborations are essential for creating a holistic welfare monitoring system that is responsive to local needs.

- **Turning Data Insights into Policy Action**

The ultimate goal of welfare monitoring is to drive evidence-based policy-making. The panelists discussed how data can be translated into actionable policies that reduce poverty, improve social equity, and enhance service delivery. Dr. Christina Weiser emphasized the need for a conducive policy environment that encourages data sharing and ensures that insights from data are used effectively by policymakers. She noted that many countries, including Pakistan, still face significant gaps in utilizing data for policy decision-making.

Dr. Naeem Uz Zafar concluded the discussion by stressing that PBS, as the primary custodian of national data, must continue to lead the charge in fostering a culture of data-driven decision-making across Pakistan's public sector. He stated that PBS is committed to creating an open data environment where different sectors can collaborate, ensuring that data serves as a public good for the benefit of all citizens.



## 6.5 Glimpse of Panel Discussion 2





## 6.6 Actionable Points

1. **Strengthen Data Standardization and Privacy Protocols:** Develop comprehensive guidelines to ensure data consistency, quality, and privacy across various data sources, both traditional and alternative.
2. **Expand Use of Alternative (non-traditional) Data Sources:** Integrate satellite imagery, mobile data, and other non-traditional data sources into PBS's welfare monitoring systems to enable real-time and more granular insights into socioeconomic indicators.
3. **Enhance Capacity for Real-Time Data Analysis:** Build PBS's capacity to collect and analyze real-time data, especially to respond more effectively to crises such as natural disasters or economic downturns.
4. **Establish Partnerships with Private Sector:** Facilitate collaborations with private companies, including telecom providers and utility companies, to access valuable data for welfare monitoring. Develop mutually beneficial frameworks that encourage data sharing while safeguarding public interests.
5. **Focus on Crisis Response and Preparedness:** Build dedicated systems within PBS to use real-time data for rapid response during emergencies, enabling quick and informed decisions on resource allocation and aid distribution.
6. **Develop Regulatory Frameworks for Data Sharing:** Work with policymakers to establish frameworks that mandate data sharing from private sectors, especially in critical areas like health, mobility, and welfare, ensuring ethical data use and privacy protections.
7. **Promote Open Data for Public Use:** Increase transparency by making selected datasets openly available for research and analysis by academia, civil society, and development organizations, fostering a culture of data-driven public engagement.
8. **Conduct Pilot Studies with Alternative Data:** Launch pilot projects to assess the utility of alternative data sources in monitoring welfare outcomes and addressing inequalities, using these findings to inform larger-scale implementations.
9. **Implement Data-Driven Decision Support Tools:** Develop tools and dashboards for policymakers, using real-time and historical data to guide resource allocation, poverty alleviation, and welfare strategies.
10. **Engage in Continuous Capacity Building:** Invest in training PBS staff to handle new data sources and analytical methods, ensuring that PBS remains at the forefront of modern data analytics and welfare monitoring practices.

By taking these actions, PBS can enhance its role as a central institution for data-driven policy-making and support more responsive, equitable, and effective welfare policies in Pakistan.

## 6.7 Conclusion

The panel discussion underscored the importance of using both traditional and alternative data sources to strengthen welfare monitoring and support data-driven policy-making. Institutions like the Pakistan Bureau of Statistics (PBS) play a vital role in ensuring data quality, standardization, and privacy. Panelists highlighted innovative tools, such as satellite imagery, mobile data, and electricity consumption data, which can provide real-time insights for timely policy interventions. The discussion emphasized the need for robust public-private



collaborations, supported by strong regulatory frameworks, to maximize the utility of big data while protecting individual privacy. In times of crisis, real-time data becomes indispensable, and panelists agreed that PBS, alongside other partners, should prioritize data-driven approaches that ensure fair resource distribution and effective poverty reduction.

## 6.8 Shield Distribution



# Data for Climate Change, Adaptation, and Disaster Risk Management

Climate Change Issues and Data Gaps



## 7 Panel Discussion 3

Theme: Climate Change, Adaptation and Disaster Risk Management

**Topic: Climate Change issues, data gaps**

**Focal Person:** Mr Attiq ur Rehman  
(DDG National Accounts, PBS)



### 7.1 Concept Note






The 55th edition of the Asian Development Bank's (ADB) flagship statistical report, Key Indicators for Asia and the Pacific 2024: Data for Climate Action, highlights the critical data required to inform climate-related policies across the region. This report evaluates the availability and adequacy of data related to climate change drivers, impacts, vulnerabilities, and mitigation and adaptation strategies. One of its key findings underscores the urgent need for geographically granular data to guide effective climate action, particularly in vulnerable countries like Pakistan.

Asia and the Pacific are increasingly facing severe threats from climate change, including frequent record-breaking heatwaves, catastrophic floods, prolonged droughts, and extreme weather events. These challenges underscore the urgency of achieving SDG 13 (Climate Action) and addressing persistent data gaps that hinder informed policy-making. Despite progress, there remains a lack of comprehensive data to fully understand the impacts on vulnerable populations, especially in areas most affected by climate change. The report highlights the importance of localized, geographically detailed data, which is essential for identifying emission hotspots, assessing community vulnerabilities, and designing region-specific mitigation and adaptation strategies.

Strengthening statistical capacity to enhance the granularity, timeliness, and quality of climate data is vital. Collaborative efforts, capacity-building initiatives, and the development of robust data systems are key to ensuring countries can effectively combat climate change. In this context, integrating Natural Capital Accounting (NCA) into climate data systems emerges as a crucial strategy. NCA provides a structured approach to assess natural resources such as air, water, and biodiversity that underpin economic prosperity. By incorporating NCA, policymakers can evaluate the economic implications of environmental degradation, ensuring sustainable management of natural resources and alignment with Green Growth Strategies.

Additionally, the System of Environmental-Economic Accounting (SEEA), an internationally recognized framework, offers a pathway to integrate environmental data with traditional economic accounts. The upcoming 2025 System of National Accounts (SNA) revision aims to embed sustainability into national economic metrics, providing countries like Pakistan with a holistic approach to national accounting and long-term economic planning. By aligning NCA with climate data, governments can design effective policies, implement environmental taxes, and create sustainable regulations that balance climate action with economic growth.

## 7.2 Panelist Profile

S.No	Name	Description	
1	Ms. Yating RU, Economist Data Division of the economic Research and Development Impact Departemnt at ADB	<b>Keynote speaker</b>	
2	Dr. Aneel Salman Chair of Economic Security at the Islamabad Policy Research	<b>Moderator</b>	
3	Mr. Yusifov Yusif Deputy Chairman, The State Statistical Committee of the Republic of Azerbaijan	<b>Panelist</b>	
4	Dr. Sardar Mohazzam, Managing Director(National Energy Efficiency and Conservation Authority M/O Science & Technology	<b>Panelist</b>	
5	Ms. Durre Mehmood, Consultant (Oxford Policy Management Pakistan)	<b>Panelist</b>	
6	Mr. Shahid Zia Cheema, Chief (G&E), M/O Planning Development & Special Initiatives	<b>Panelist</b>	
7	Dr. Muhammad Farooq, Director (SUPARCO)	<b>Panelist</b>	
8	Soha Nisar Research Associate/ Writer (DAWN NEWS)	<b>Panelist (Online)</b>	



## 7.3 Agenda

Structure	Format	Focal person
<b>Introduction</b> (10 minutes)	<ul style="list-style-type: none"> <li>▪ <b>Welcome and Opening Remarks:</b> Brief introduction by the moderator, including the purpose of the discussion and relevance to the theme.</li> <li>▪ <b>Panellist Introductions:</b> Briefly introduce each panellist, highlighting their expertise and relevance to the topic.</li> </ul>	<b>Dr. Aneel Salman,</b> Moderator
<b>Keynote Speaker</b> (15 minutes)	<ul style="list-style-type: none"> <li>▪ <b>Presentation by keynote speaker</b></li> </ul>	<b>Dr. Yating Ru</b>
<b>Mr. Yousifov Yousif</b> (10 minutes)	<ul style="list-style-type: none"> <li>▪ <b>Presentation by Mr. Yousif Yousifov</b></li> </ul>	Panellist
<b>Structured Discussion</b> (30-40 minutes)	<ul style="list-style-type: none"> <li>▪ <b>Encourage interaction:</b> Ask probing follow-up questions to stimulate deeper discussion, such as asking panelists to explore potential solutions to data gaps or collaborative efforts between NSOs and climate agencies.</li> <li>▪ <b>Link climate data to broader issues:</b> Help the conversation tie climate data discussions back to broader topics like economic resilience, social equity, and sustainability to maintain relevance for a diverse audience.</li> <li>▪ <b>Focus on implementation:</b> Guide the panelists to discuss not just the importance of data but how to practically implement improved climate data systems, what tools are needed, and how NSOs can engage stakeholders at all levels.</li> </ul>	Moderator/ panel chair
<b>Audience Q&amp;A</b> (15 minutes)	<ul style="list-style-type: none"> <li>▪ <b>Interactive Session:</b> Open the floor to questions from the audience. The moderator will select and pose questions to the panelists.</li> <li>▪ <b>Panelists' Answers:</b> Panelists provide responses, engaging with audience concerns and interests.</li> </ul>	Moderator
<b>Conclusion</b> (10 minutes)	<ul style="list-style-type: none"> <li>▪ <b>Summary of Key Takeaways:</b> The moderator summarizes the key points discussed and highlights any actionable insights.</li> <li>▪ <b>Closing Remarks:</b> Final thoughts from each panelist, including reflections on the future of data for life and equity.</li> <li>▪ <b>Thank You and Wrap-Up:</b> The moderator thanks the panelists and audience, providing information on any follow-up actions or resources.</li> </ul>	

## 7.4 Discussion

The discussion began with Dr. Aneel Salman, the moderator, highlighting the importance of data utilization in policy-making. He initiated the discussion by stating, "People often say, in the context of Pakistan, that policies usually don't work due to a lack of data. However, the fact is that we are not utilizing available data in our policy-making, and furthermore, we are not leveraging research publications produced on the topic - a common issue in many countries."

**Dr. Salman** emphasized that Pakistan's most vulnerable district, Chitral, and the least vulnerable, Lahore, require distinct adaptive strategies. He proposed that, in this data-driven age, addressing data gaps through collaborative institutions is crucial. He highlighted the significance of integrating Natural Capital Accounts with climate planning, noting that the 2025 System of National Accounts (SNA) vision combines environmental reality with economic development.

Dr. Salman concluded, "From ambition to action - every climate policy begins with ambition, but without action, it remains mere inspiration."

He then invited **Dr. Yating Ru (Asian Development Bank)** who presented the key findings of the ADB report on climate change and disaster risk management. She emphasized the need for timely and quality data to inform climate-related policies and highlighted the importance of integrating Natural Capital Accounting (NCA) with climate data for sustainable development.

**Ms. Durre Mahmood (OPM)** stressed the importance of a climate act and governance framework to ensure coordination among institutions. She emphasized the need for data quality and regulatory authority to standardize data collection. Ms. Mahmood highlighted the importance of integrating data from various sources for effective climate policy decisions.

**Mr. Shahid Zia Cheema (Ministry of Planning, Development & Special Initiatives)** shared initiatives of the ministry, integrating real-time climate data into national development strategies. These initiatives include climate-focused public investment management assessment, climate-proofed development manuals, and allocation of resources for climate data collection and analysis.

**Dr. Yusifov Yusif Khasay (State Statistical Committee of Azerbaijan)** who gave online presentation discussed Azerbaijan's experience with data collection processes using GIS systems. He shared insights on the state commission on climate change action plan and green development indicators, as well as national priorities.

**Mr. Sahibzad Khan (Pakistan Meteorological Department)** explained the department's utilization of high-resolution climate models for early warning systems and machine learning for improving forecasting accuracy. He highlighted the importance of micro-climate studies

to address local climate challenges.

**Dr. Muhammad Farooq (SUPARCO)** discussed the integration of satellite data with other datasets for environmental monitoring. He shared insights on analyzing data sets to assess risk vulnerability and supporting real-time decision-making for climate adaptation policies.

**Dr. Sardar Mohazzam (National Energy Efficiency and Conservation Authority)** highlighted energy efficiency opportunities using big data analytics and AI-driven solutions. He emphasized that Pakistan's energy sector faces significant challenges, including high energy intensity and low efficiency. He emphasized the importance of optimizing energy consumption patterns through data-driven insights. By leveraging big data analytics, Pakistan can identify areas of inefficiency and develop targeted interventions. He stressed the need for policy reforms to promote energy efficiency and the development of energy-efficient building codes, which aim to reduce energy consumption in new buildings. He emphasized that energy efficiency is critical to Pakistan's sustainable development and that data-driven solutions can play a vital role in achieving this goal.

Ms. Soha Nisar (DAWN and The News) addressed data limitations on urban sprawl, flood patterns, and pollution levels. She stressed the need for satellite technology for real-time data.

## 7.5 Glimpse of Panel Discussion 3





## 7.6 Actionable Points

1. Develop national climate data strategy.
2. Establish climate data governance committee.
3. Allocate resources for climate data collection and analysis.
4. Conduct regular climate data workshops and training.

### Implementation Roadmap:

1. Short-term (6-12 months): Establish climate data governance framework.
2. Mid-term (1-2 years): Enhance data sharing and collaboration.
3. Long-term (2-5 years): Utilize satellite technology for environmental monitoring.

Regular progress reviews and assessments will ensure effective implementation of the actionable points and recommendations.

## 7.7 Conclusion

The discussion highlighted the critical role of data-driven climate action in Pakistan. Panelists emphasized the importance of data governance, integration, and collaboration among institutions. The event concluded with a Q&A session, where panelists responded to audience questions, reiterating the importance of data-driven climate action.



## 7.8 Shield Distribution



# Data Integration and Visualization for Development

Bridging Data Gaps for Inclusive  
Data Systems for Effective Policy Making



## 8 Panel Discussion 4

Theme: Data Integration and Visualization for Development

**Topic: Data Gaps for Inclusive Data Systems for Effective Policy Making**

**Focal Person: Ms Sobia Munawar**  
(Director DP, PBS)



### 8.1 Concept Note

Pakistan's economic development often faces challenges due to the lack of data-driven decision-making. Globally, data is a cornerstone for crafting, implementing, and monitoring effective policies. Data integration, the consolidation of information from diverse sources offers policymakers a comprehensive understanding of complex issues by combining fragmented datasets from government agencies, NGOs, research institutions, and public and private sectors. This holistic approach ensures that policies address economic trends and social welfare issues effectively.

Despite the wealth of data generated across sectors like healthcare, education, finance, and public safety, much of it remains siloed, fragmented, and underutilized. Addressing these gaps through data integration requires robust mechanisms for standardization, verification, and quality assurance. Reliable datasets enable in-depth analyses, identification of root causes, and predictions of policy impacts. For example, integrated health data from hospitals, surveys, and environmental monitoring systems can inform timely interventions for disease outbreaks.

Complementing integration, data visualization plays a crucial role in simplifying complex information, fostering transparency, and enhancing decision-making. Visual tools such as dashboards, charts, and heat maps enable policymakers to quickly interpret trends, patterns, and outliers. Interactive visualizations allow simulation of policy scenarios, such as tracking the impact of unemployment programs or monitoring environmental conservation efforts. Real-time visualization tools facilitate ongoing evaluation of policies, enabling adjustments to ensure alignment with goals, resource efficiency, and accountability.

Key discussion points include promoting data literacy among policymakers, addressing privacy concerns, breaking down organizational silos, and exploring best practices for data integration and visualization. Panelists will share insights on cutting-edge tools and global experiences, emphasizing cross-sectoral collaboration to create centralized, accessible, and secure data repositories. Discussions will also address challenges such as skill gaps, data misinterpretation, and advancing the use of AI, predictive modeling, and machine learning in policymaking.

This session aims to foster dialogue among government, academia, and civil society, showcasing innovative strategies for integrating and visualizing data to promote evidence-based, inclusive, and transparent policymaking in Pakistan.



## 8.2 Panelist Profile

S.No	Name	Description	
1	Dr. Akif, MD KPITB	Key note speaker	
2	Mr. Shadab Fariduddin	Moderator	
3	Dr ,Basit Ahmed Khan, GIS Expert	Panelist	
4	Dr. Rabia Irfan (Gold Medalist), Assistant Professor, NUST	Panelist	
5	Dr. Imtnan Ul Haq Qazi (Pride of Performance)	Panelist	
6	Sahibzada Naveed Jan Chief Operating Officer, NADRA	Panelist	
7	Waqar N. Qureshi, Director General ,Punjab IT Board	Panelist	
8	Dr. Bilal Anwar CEO, NDRMF	Panelist	
9	Mr. Imran Azhar, Founder & CEO, Creative Pakistan	Panelist	



## 8.3 Agenda

Structure	Format	Focal person
<b>Introduction</b> (10 minutes)	<ul style="list-style-type: none"> <li>▪ <b>Welcome and Opening Remarks:</b> Brief introduction by the moderator, including the purpose of the discussion and relevance to the theme.</li> <li>▪ <b>Panellist Introductions:</b> Briefly introduce each panellist, highlighting their expertise and relevance to the topic.</li> </ul>	<b>Dr. Aneel Salman,</b> Moderator
<b>Keynote Speaker</b> (15 minutes)	<ul style="list-style-type: none"> <li>▪ <b>Presentation by keynote speaker</b></li> </ul>	<b>Dr. Yating Ru</b>
<b>Mr. Yousifov Yousif</b> (10 minutes)	<ul style="list-style-type: none"> <li>▪ <b>Presentation by Mr. Yousif Yousifov</b></li> </ul>	Panellist
<b>Structured Discussion</b> (30-40 minutes)	<ul style="list-style-type: none"> <li>▪ <b>Encourage interaction:</b> Ask probing follow-up questions to stimulate deeper discussion, such as asking panelists to explore potential solutions to data gaps or collaborative efforts between NSOs and climate agencies.</li> <li>▪ <b>Link climate data to broader issues:</b> Help the conversation tie climate data discussions back to broader topics like economic resilience, social equity, and sustainability to maintain relevance for a diverse audience.</li> <li>▪ <b>Focus on implementation:</b> Guide the panelists to discuss not just the importance of data but how to practically implement improved climate data systems, what tools are needed, and how NSOs can engage stakeholders at all levels.</li> </ul>	Moderator/ panel chair
<b>Audience Q&amp;A</b> (15 minutes)	<ul style="list-style-type: none"> <li>▪ <b>Interactive Session:</b> Open the floor to questions from the audience. The moderator will select and pose questions to the panelists.</li> <li>▪ <b>Panelists' Answers:</b> Panelists provide responses, engaging with audience concerns and interests.</li> </ul>	Moderator
<b>Conclusion</b> (10 minutes)	<ul style="list-style-type: none"> <li>▪ <b>Summary of Key Takeaways:</b> The moderator summarizes the key points discussed and highlights any actionable insights.</li> <li>▪ <b>Closing Remarks:</b> Final thoughts from each panelist, including reflections on the future of data for life and equity.</li> <li>▪ <b>Thank You and Wrap-Up:</b> The moderator thanks the panelists and audience, providing information on any follow-up actions or resources.</li> </ul>	

## 8.4 Discussion

- **Dr. Basit Ahmed Khan, Extra Large Binary Ltd. GIS Expert**

Topic: "Best Practices in Data Visualization for Policy Effectiveness"

Summary:

Dr. Khan discussed the power of data visualization in conveying complex information to policy makers and the public. Examples included interactive dashboards and geographic information systems (GIS) that facilitate immediate insights, thereby accelerating informed decision-making processes.

- **Mr. Sahibzada Naveed Jan, Chief Operating Officer, NADRA**

Topic: "Harnessing Integrated Data for Evidence-Based Policy"

Summary:

Emphasized the importance of using integrated data sources to form a comprehensive view of the social, economic, and environmental factors affecting policy outcomes. Mr. Sahibzada shared insights on overcoming data silos and ensuring interoperability among different data systems in private and public sectors.

- **Engr. Dr. Rabia Irfan, Associate Professor (AI and ML), National University of Science and Technology**

Topic: "Usage of Artificial Intelligence, Big data and Data Analytics in Data visualization and Data driven policy making and role of Academia for the task"

Summary:

Engr. Dr. Rabia shared her experience of data extraction from OCR forms of legal decisions and inferring/forecasting same like decisions. Explained the issues faced and lessons learnt in the said project. She explained currently used technologies in public sector including Data Integration & Interoperability Framework (X-Road), Pakistan Enterprise Architecture, Pakistan Data & Technology Stack (Gov Stack), Open APIs Framework (India Stack, UK GDS ), Upgradation of Technology Infrastructure (GPOs), Meta-data Standardization & Interpretation Risks , Data Exchange Protocols – Master Datasets, Open Data Portal ,Ethical use of Technology for Data (Data Integrity),Artificial Intelligence, Big data and Data Analytics.

- **Waqar Qureshi, CEO, Punjab Information Technology Board (PITB)**

Topic: "Building Capacity for Data-Driven Policy Making in Developing Countries"

Summary:

He focused on the need for capacity-building programs to improve data literacy among policy makers in developing countries. He underscored the role of public-private partnerships in developing data infrastructure, tools, and skills essential for impactful policies.

- **Engr. Dr. Rabia Irfan, Associate Professor (AI and ML), National University of Science and Technology**

Topic: "Usage of Artificial Intelligence, Big data and Data Analytics in Data visualization and Data driven policy making and role of Academia for the task"

Summary:

Engr. Dr. Rabia shared her experience of data extraction from OCR forms of legal decisions and inferring/forecasting same like decisions. Explained the issues faced and lessons learnt in the said project. she explained currently used technologies in public sector including: Data Integration & Interoperability Framework (X-Road), Pakistan Enterprise Architecture, Pakistan Data & Technology Stack (Gov Stack), Open APIs Framework (India Stack, UK GDS ), Upgradation of Technology Infrastructure (GPOs), Mata-data Standardization & Interpretation Risks , Data Exchange Protocols – Master Datasets, Open Data Portal ,Ethical use of Technology for Data (Data Integrity),Artificial Intelligence, Big data and Data Analytics

- **Waqar Qureshi, CEO, Punjab Information Technology Board (PITB)**

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Summary:

He focused on the need for capacity-building programs to improve data literacy among policy makers in developing countries. He underscored the role of public-private partnerships in developing data infrastructure, tools, and skills essential for impactful policies.

- **Mr.Imran Azhar, CEO Creative Pakistan**

Topic: "Making Data insights more impactful by adding Data stories to them for general public and policy makers"

Summary:

Mr. Imran discussed and showed a visual demonstration of data to make it more impactful. All the panelist shared their views about enhancing data driven policy making and enhancing data literacy in society

- **Dr.Imtnan -ul -Haq (Pride of Performance) Director Satellite Data Services, SUPARCO**

Topic: "Challenges and Solutions in Data Integration for Developmental Goals"

Summary:

Panelist provided insights into the challenges of data integration, such as data privacy concerns, lack of standardized formats, and technological limitations. They proposed collaborative frameworks and regulatory support as solutions to streamline data sharing and integration.

- **Mr. Bilal Anwar, CEO National Disaster and Risk Management Fund (NDRMF)**

Topic: "Data Integrations for forming a bigger picture for policy and planning"

Mr. Bilal shared his experience in data usage for policy and planning regrading National disasters and allocation of funds for risk management. All the panelists were of the view that it is very necessary to add maximum indicators of data to make the policy planning better and effective.

## Key Themes Discussed

**Data Integration:** Discussions centered around how integrated data allows for a holistic approach to development challenges, such as urban planning and climate resilience. Panelists shared success stories where integration led to better-targeted interventions.

**Visualization Techniques:** Various visualization techniques were demonstrated, with emphasis on interactive and accessible formats. These techniques facilitate clearer communication of policy impacts, fostering public support and transparency.

**Data Driven Policy Making in Pakistan:** The panel highlighted that integrated data provides actionable insights for policy design, implementation, and evaluation, making it indispensable for timely and effective decision-making.

**National Data Policy and Data Repository:** The panel highlighted the need of National Data policy and National Data Repository. PBS being NSO and data hub of Pakistan can play lead role in structuring the above two. PBS can build a single repository with the help of sharing and using the data from other organizations.

## 8.5 Glimpse of Panel Discussion 4







## 8.6 Actionable Points

### Governance

- PBS should follow Whole-of-the Government Approach for proper utilization of their data for policy and planning purpose
- PBS may prepare or be a part in preparation of Data Governance Policy / Framework
- PBS may Strengthen Data Privacy, Data Security and Compliance
- A well-structured standardization for Data Quality & Access is needed to be developed
- PBS may Enable Zero Trust Architecture
- All the govt. organizations including PBS may play their part to Embed culture of Data- driven policy making
- Foster culture of Chief Data Officers
- It will be a good initiative if performance can be measured by automated data-driven systems within government sector and as PBS has recently completed “Digital Census” can play its role.
- PBS being NSO has huge datasets so may try to develop DataGovpedia – Knowledge Exchange Hub of Data-driven case studies.

- Open Data Policy within legal limitations

## Technology

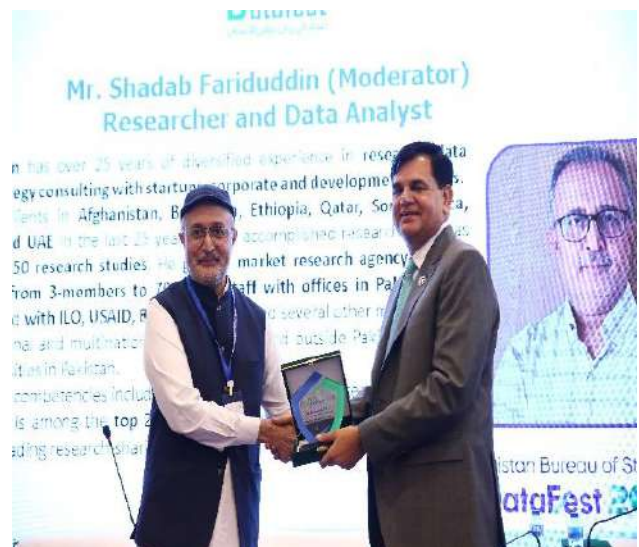
- Implementation of Data Integration & Interoperability Framework (X-Road)
- Government Sector may develop Pakistan Enterprise Architecture
- PBS play a lead role in Pakistan Data & Technology Stack (Gov Stack)
- PBS may implement Open APIs Framework (India Stack, UK GDS)
- Upgradation of Technology Infrastructure (GPOs)
- Meta-data Standardization & Interpretation Risks
- Data Exchange Protocols – Master Datasets
- PBS may develop Open Data Portal for the statistical usage
- Ethical use of Technology for Data (Data Integrity)
- Artificial Intelligence, Big data and Data Analytics

The event underscored that data integration and visualization are critical in shaping effective, resilient, and responsive policies. The insights and solutions shared will inform future initiatives, fostering a data-centric approach in the public sector and beyond.

## 8.7 Conclusion

The panel discussion underscored the pivotal role of data integration and visualization in fostering evidence-based policymaking and sustainable development in Pakistan. It highlights the necessity of breaking data silos, enhancing data literacy, and leveraging advanced technologies like AI, big data, and predictive analytics to address complex societal challenges. Emphasis was placed on establishing a centralized data repository and developing a national data policy, with PBS positioned as a leader in these initiatives. The actionable points identified spanning governance, technology, and cross-sector collaboration offer a roadmap for embedding data-driven decision-making within the public sector, ensuring policies are transparent, inclusive, and impactful.

## 8.8 Shield Distribution





# Data for Life and Equity

Data Integration For Growth and Development





## 9 Panel Discussion 5

Theme: Data for Life & Equity

### Topic: Data Integration for Growth and Development

**Focal Person: Syed Abdul Qadir Shah**

(DG PER, PBS)



#### 9.1 Concept Note







Data integration is essential for fostering growth and development in Pakistan's economy, which is valued at over \$350 billion and comprises agriculture, industry, and services contributing 25%, 21%, and 54% to GDP, respectively. Despite this potential, fragmented and underutilized data hampers productivity and policy effectiveness across sectors. The agriculture sector, a cornerstone of rural economies and downstream industries like textiles and food processing, suffers from skewed landholdings 90% of farms are under 12 acres limited access to markets and financial systems, and vulnerabilities to climate change. Integrating data on agricultural output, land records, and geospatial indicators can help improve productivity, enable fiscal assessments, and unlock value-added industrial opportunities. Similarly, the industrial sector faces challenges due to a concentration of large-scale enterprises in urban hubs and a lack of linkages with micro, small, and medium enterprises (MSMEs), which limits growth and innovation. Integrated data on enterprise performance can empower organizations like SMEDA and the State Bank of Pakistan to design targeted policies and enhance private sector engagement.

The services sector, particularly retail, is the largest contributor to GDP and is expanding beyond major urban centers, driven by digital payment systems, inventory management tools, and e-commerce platforms. However, these advancements are largely consumption-focused, with little attention to enhancing productivity among small and medium producers. Data integration from sources like geotagged retail structures, electricity consumption, and FMCG sales can provide insights to support retail growth, improve tax documentation, and create scalable opportunities for startups and supply chains. Fiscal opportunities across sectors are vast; for instance, integrating SUPARCO data with land records can enable precise agricultural taxation, while retail data can be analyzed to estimate revenue and tax potential, contributing to an equitable and effective fiscal system.

Ultimately, data integration is not merely a technical exercise but a strategic imperative to address systemic challenges, optimize resource allocation, and foster evidence-based policymaking. By consolidating fragmented data, policymakers can identify gaps, implement targeted interventions, and drive innovation, enabling sustainable growth across agriculture, industry, and services. Collaborative efforts involving the government, private sector, and academia are crucial to establish robust data-sharing frameworks, standardization protocols, and secure repositories. The "Data Integration for Growth and Development" panel discussion

aims to explore these challenges and opportunities, offering actionable strategies to harness the transformative potential of integrated data for a resilient and inclusive economy

## 9.2 Panelist Profile

S.No	Name	Description	
1	Dr. Mehmood Khalid, Senior Research Economist at the Macro Policy Lab, PIDE	<b>Moderator</b>	
2	Mr. Najamus Saqib Shabbir, Additional Director, SME, Housing & Sustainable Finance	<b>Panelist</b>	
3	Prof. Dr. Fateh Muhammad Marri, VC SAU,	<b>Panelist</b>	
4	Dr Irfan Chatha, SDPI	<b>Panelist</b>	
5	Nadia Jahangir Seth General Manager Policy and planning division SMEDA	<b>Panelist</b>	
6	Mr. Guillermo Mont, Social Protection Specialist, ILO	<b>Panelist</b>	
7	Mr. Mehtab Haider, Journalist, The News		
8	Ms. Amna Masood, Invest 2 Innovate		

## 9.3 Agenda

Structure	Format	Focal person
<b>Introduction</b> (10 minutes)	<b>Welcome and Opening Remarks:</b> <b>Panelist Introductions:</b>	Moderator/ Panel Chair
<i>Overview</i> (15-Miutes)	<b>Keynote Speech</b>	<b>Dr, Abid Qaiyum Suleri</b> Executive Director, SDPI
<b>Structured Discussion</b> (50-60 minutes)	<p><b>Presentation by ILO</b> (Mr. Guillermo Montt ) Labour Growth Market</p> <p><b>Growth and development in Pakistan:</b> Main barriers that hampers growth and development and their solutions through data integration</p> <p><b>Agriculture and Livestock</b> Small farmers, Access to market/inputs, low access to formal financial sector, informational gaps, data integration with SUPARCO, CRS, Land records</p> <p><b>Industrial/SME Sector</b> Linkage between Large and Small scale enterprises, potential of retailers, Data integration for scale up</p> <p><b>Digital Platforms</b> Increasing use of digital payment systems, fiscal spaces</p>	<p>Moderator <b>Dr. Mahmood Khalid,</b> PIDE</p> <p>Panelist <b>Dr. Fateh Muhammad Marri,</b> VC, SAU <b>Mr. Zafar ul Hassan,</b> JCE <b>Mr. Najam us Saqib Shabbir,</b> SBP <b>Ms Nada Jahangir Seth,</b> General Manager, SMEDA</p>
<b>Audience Q&amp;A</b> (20 minutes)	<p><b>Interactive Session:</b> Open the floor to questions from the audience. The moderator will select and pose questions to the panelists.</p> <p><b>Panelists' Answers:</b> Panelists provide responses, engaging with audience concerns and interests.</p>	Moderator
<b>Conclusion</b> (10 minutes)	<ul style="list-style-type: none"> <li>▪ <b>Summary of Key Takeaways:</b> The moderator summarizes the key points discussed and highlights any actionable insights.</li> <li>▪ <b>Closing Remarks:</b> Final thoughts from each panelist, including reflections on the future of data for life, equity and growth.</li> <li>▪ <b>Thank You and Wrap-Up:</b> The moderator thanks the panelists and audience.</li> </ul>	Moderator

## 9.4 Discussion

**Dr. Mahmood Khalid** praised the Data Fest event, describing it as a significant platform that demonstrated strong interest in data among academia, researchers, and data providers. Based on workshop discussions and conferences, Dr. Khalid noted the extensive current use of data and anticipated an increased and optimized utilization of data in the future. Furthermore, he highlighted that the event attracted not only data users, such as researchers, educators, and students, but also data providers, emphasizing the importance of such engagements for effective data-driven insights. He facilitated a segment by inviting Mr. Guillermo Montt from ILO to share insights with the audience, thereby promoting a collaborative exchange among the event participants.

**Mr. Guillermo Montt**, representative of ILO stated that how developing countries like Pakistan can enhance growth and development. He threw light on significance of Labour Market Information System and its uses for policy makers, work force, training institutions etc. He also drawn attention towards management of the data despite its unavailability in various aspects. He emphasized data's critical role in coordination, monitoring, policy making, and decision making. He sees data as an essential tool in these areas. From the perspective of the International Labor Organization (ILO), Mr. Montt discussed how data integration could help identify high-risk area for forced labor and child labor. He pointed out that data integration enables better understanding of risks, demands, supply, and market commodities within the labor market. He further highlighted that data integration requires consolidating information from multiple sources but noted that coordination issues often complicates this process. Mr. Montt emphasized that while technology and data availability exist, the unwillingness to share data is a significant barrier. He argued that readiness to share data is more critical than mere availability for effective data integration.

**Ms. Nadia Jahangir Seth**, SMEDA spoke about the importance of SMEs and elaborated how this sector will come into play to ensure and achieve the desired results if facilitated by the government. She said that SMEs provide 45% of GDP. It is one of the areas which is providing large amount of taxes and labour force. As far as reply to the question regarding key challenges and development of this sector is concerned, she responded that SMEDA is working for private sector development and playing as a bridge between private and government sector. In reply to another query regarding data constraints in terms of not to design a policy in exact format, she said that we don't get information/ data from different agencies of Pakistan. She discussed the key challenges being faced by SME sector with the audience. She was of the view that to enhance SME growth and development in Pakistan, a critical focus must be placed on improving data integration across various government organizations. She further said that for fostering value addition and enhancing market access for SMEs, the persistent data gaps, particularly in sectors such as agriculture, services and manufacturing, are essential to remove or minimize. She emphasized that data is prerequisite for understanding the dynamics of the SME sector, stating, "Data is necessary for growth because it helps us identify where economic activities are happening and enables informed decision-making". She highlighted the existence of approximately 5.2 million economic



establishments within the SME sector out of which 99% are economic establishments that contribute 40%-45% to GDP of the country. This huge number reflects the potential for economic growth if data-driven strategies are implemented effectively. With access to data, SMEDA can geo-tag economic activities which will help to define where the economic sector exists viz-a-viz to pinpoint where growth is occurring interalia to better understand the SME landscape. Through direct interactions with SMEs, she discussed key challenges faced by the sector, particularly in accessing finance. She mentioned that only 179 thousand borrowers are registered with commercial banks, pointing to a significant gap between the available data and the actual opportunities within the sector. She highlighting the disparity between the size of the sector and the limited number of borrowers, which reflects untapped potential. She pointed out that understanding these dynamics is crucial for unlocking opportunities for growth and financial access in the SME sector.

**Mr. Najam us Saqib Shabbir**, SBP, discussed role of State Bank of Pakistan regarding regulatory framework in terms of SME financing. Further to that, he emphasized on the need of the conduct of Economic Census by Pakistan Bureau of Statistics for determination of exact size of the SMEs/enterprises in Pakistan. As the first ever Economic Census in Pakistan was conducted in Pakistan in 2002-05 which is unable to present the true picture and size of the SME Sector. From the financial sector perspective, Mr. Saqib underscored the crucial role data plays in refining financial services, especially in tailoring products to business needs. He noted that data integration could enhance precision in service delivery and customer insights, leading to more efficient and targeted financial offerings. Highlighting small and medium-sized enterprises (SMEs) as a key focus, Mr. Saqib addressed how data can help understand and meet the evolving financial requirements of SMEs, which are vital contributors to economic growth. He suggested a data-driven approach to build better financial support systems that cater specifically to the needs of SMEs.

**Prof. Dr. Fateh Muhammad Marri**, VC, SAU spoke about the importance of agriculture sector growth. He said if agriculture sector keeps on growing at 6% then how unemployment, poverty could drop. He said that production could be improved if only seed quality issue is addressed amongst many other factors. He highlighted the potential to reduce unemployment and poverty by 50% over the next decade through effective data integration. Dr. Marri noted that malnutrition is influenced by various factors, not solely income, underscoring the importance of comprehensive data in addressing public health issues. He articulated a vision for Pakistan to achieve double-digit growth rates, emphasizing that such growth is attainable through improvements in land productivity, pre and post harvesting damages, access to road etc. Dr. Marri stressed that enhancing agricultural output and managing production costs are crucial objectives for economic advancement. He asserted that data is a critical factor in driving GDP growth, stating, "GDP will grow if you improve your production."

**Dr. Irfan Chatha**, SDPI focused on significance of the quality of data and its presentation. He also stressed that simple and accessible formats of data is essential for the public.

**Miss Amna Masood**, Invest2Innovate emphasized that "the future of digitization of data is

crucial," stating, "Data informs strategy, and strategy informs execution." This highlights the pivotal role that data plays in shaping business decisions and operational frameworks. As an entrepreneur, she outlined her approach to establishing a value chain, stating, "If I want to establish a value chain, I need to access a variety of data." She noted that she would utilize historical data and tools like Google Maps to analyze and extrapolate valuable insights. This underscores the necessity of having access to comprehensive and consistent data to support business planning. She stressed the importance of collective data on a consistent basis, referring to this as essential for effective business intelligence. Furthermore, she explained that having aggregated data from various sources enables entrepreneurs to make informed decisions that can lead to sustainable growth. She acknowledged that "everyone has a risk appetite with respect to capital," and that data is integral to understanding and managing that risk. Access to accurate data allows entrepreneurs to evaluate potential investments and make strategic choices aligned with their financial goals.

**Mr. Mehtab Haider**, Journalist said that the quality of data would support productive growth. Fragmentation of data is problem whereas lack of transparency makes the job of media persons difficult. The data should be transparent and public.

## 9.5 Glimpse of Panel Discussion 5





## 9.6 Actionable Points

1. **Develop a Centralized Data Platform** for seamless integration across sectors.
2. **Facilitate Data Sharing** with stakeholders through standardized protocols.
3. **Conduct Comprehensive Economic and Sectoral Censuses** to gather accurate data on SMEs, agriculture, and labor markets.
4. **Enhance Data Accessibility** by providing user-friendly and transparent formats for public access.
5. **Focus on Sector-Specific Data Needs** for SMEs, retail, and agriculture through targeted surveys and geotagging.
6. **Promote Capacity Building** by training staff and stakeholders in data collection, integration, and analysis.
7. **Ensure Data Quality and Consistency** through standardization and regular audits.
8. **Leverage Technology for Data Innovation** using AI, GIS, and big data analytics tools.
9. **Foster Public-Private Collaboration** to improve data integration and support entrepreneurship.

## 9.7 Conclusion

In conclusion, the discussion underscored the transformative potential of data integration for Pakistan's economic growth and development. Experts from various sectors highlighted the crucial role of data in enhancing productivity, informing policy decisions, and addressing systemic challenges. Key themes included the need for improved data accessibility, transparency, and coordination, particularly within the agriculture, SME, and financial



sectors. Speakers emphasized the importance of leveraging data to optimize resource allocation, reduce inefficiencies, and unlock new opportunities for innovation and growth. With data serving as a foundational tool for policy-making, decision-making, and business strategy, the event highlighted the need for a concerted effort in overcoming data gaps and fostering collaboration between government, private sector, and academic institutions. Data-driven approaches, as emphasized throughout the event, are essential to unlock Pakistan's full potential, mitigate risks, and ensure sustainable and inclusive economic progress.

## 9.8 Shield Distribution





# Data for Life and Equity

Closing Human Capital Gaps  
(Education)



## 10 Panel Discussion 6

Theme: Data for Life & Equity

### Topic: Closing Human Capital Gaps (Education)

**Focal Person: Mr Shaukat Khan**

(DDG Labor Force, PBS)









#### 10.1 Concept Note

Pakistan, with a population of 241.5 million as per the 2023 census, is grappling with significant education challenges, particularly in terms of access and quality. The latest data reveals that over 25 million children aged 5-16 are out of school, and a staggering 80% of late primary-age children lack proficiency in reading. This situation is particularly concerning as it is 21 percentage points worse than the average for South Asia and 19 percentage points worse than the average for lower-middle-income countries. Despite efforts by the Pakistan Institute for Education and national surveys like PSLM and PDHS, education gaps persist, especially among marginalized communities, and have been further exacerbated by the COVID-19 pandemic and the 2022 floods. These challenges hinder the development of human capital, which is crucial for both economic growth and social development.

The panel discussion will focus on how education data systems can be leveraged to improve access to schooling and learning outcomes across Pakistan. One key issue is whether current data systems are effective in understanding the educational needs of disadvantaged groups, such as girls in rural areas, and identifying areas where progress is slow. The discussion will also address the investments required to improve education data systems at the systems, processes, and people levels. Identifying successful initiatives and partnerships in education data that have the potential to scale and sustain improvements will also be a critical point of focus. Moreover, the panel will explore how Pakistan can take advantage of its expanding digital sector to maximize data integration, thereby enhancing the effectiveness of education systems and policies. The ultimate goal is to identify strategies to address education access and quality issues, particularly under the framework of Sustainable Development Goal 4, and build a more resilient, skilled, and inclusive population.

## 10.2 Panelist Profile

S.No	Name	Description	
1	João Pedro Azevedo Chief Statistician UNICEF	Key note speaker	
2	Ms. Jassica Albert Assistant Professor Lahore University of Management	Moderator	
3	Dr. Shahid Soraya Director General Pakistan Institute of Education	Panelist	
4	Baela Raza Jamil Chief Executive Officer Idara-e- Taleem-o-Aagahi (ITA)	Panelist	
5	Dr Shereen Mustafa Narejo, Chairperson of the Chief Minister's Inspection team	Panelist	
6	Prof Dr. Bushra Mirza Member Higher Education Commission		

## 10.3 Agenda

Structure	Format	Focal person
<b>Introduction</b> (10 minutes)	<b>Welcome and Opening Remarks:</b> <b>Panelist Introductions:.</b>	Ms. Jassica Albert LUMS
<b>Overview &amp; Presentation</b> (15-Miutes)	Human Capital Gaps in Education	João Pedro Azevedo, Chief Statistician UNICEF
<b>Structured Discussion</b> (30-40 minutes)	<b>Segment 1:</b> Identifying Major Human Capital Gaps <b>Segment 2:</b> Solutions to Close Education Gaps <b>Segment 3:</b> Role of Public-Private Partnerships and Innovation <b>Segment 4</b>	Ms. Jassica Albert LUMS Panelist  Dr. Shahid Soraya, DG PIE Dr. Shireen Mustafa Narejo, Govt of Sindh Ms.Baela Raza Jamil (CEO) Prof Dr. Bushra Mirza, Member HEC Fahd Hussein,
<b>Audience Q&amp;A</b> (15 minutes)	<b>Interactive Session</b> <b>Panelists' Answers</b>	Ms. Jassica Albert LUMS
<b>Conclusion</b> (10 minutes)	<ul style="list-style-type: none"> <li>▪ <b>Summary of Key Takeaways</b></li> <li>▪ <b>Closing Remarks</b></li> <li>▪ <b>Thank You and Wrap-Up</b></li> </ul>	Dr. Naeem uz Zafar, Chief Statistician, PBS Ms. Jassica Albert LUMS

## 10.4 Discussion

To explore the challenges and limitations under the provision and quality of education, panel discussion on the topic "Data for Life and Equity: Closing Human Capital Gaps (Education)" was headed by the keynote speaker Mr. Joao Pedro Azevedo, Chief Statistician, UNICEF and moderated by Dr. Jessica Albert. The session highlighted the potential of data to drive equity in education and featured a distinguished panel.

**Dr. Shahid Soroya (DG PIE)** reflected on surprising insights from the 2023 National Achievement Tests, showing how parental satisfaction sometimes diverges from school performance.



**Ms. Baela Raza Jamil, (Private Secretary ITA)** emphasized the unequal access to quality education and its impact on Pakistan's development.

**Dr. Bushra Mirza ( Pride of Performance, T.I. HEC)** discussed how foundational learning inequalities affect the diversity and preparedness of students in higher education.

**Dr. Shereen Mustafa Narejo (Secretary Planning and Development, Government of Sindh)** shared the complexities of using education data for effective policymaking within a subnational context.

The discussion also explored emerging technologies like AI and big data and their potential, alongside the challenges of integrating cross-sectoral data (e.g., health and education) to create agile systems capable of addressing climate shocks and social unrest.

Honorable keynote Speaker Mr. Joao Pedro Azevedo underscored three main points:

- **Population Dynamics and Educational Challenges.** By 2050, 90% of the workforce will come from low- and middle-income countries, requiring Sub-Saharan Africa to expand education systems at an unprecedented scale to meet demand.
- **Learning Poverty and Life-Course Approach.** Learning poverty, where many 10-year-olds cannot read a basic story, is a critical issue. A life-course approach shows that disparities persist across countries, highlighting the need for targeted support throughout childhood, adolescence and youth, from foundational learning to learning-to-earnings.
- **Need for Transformational Change** Urgent changes are needed to improve education quality, scale interventions, and secure funding. A focused approach to measuring and understanding key education indicators is essential to meet SDG targets.

This mission was exceptionally productive, demonstrating the importance of partnerships like those between PBS and UNICEF Pakistan, led by Dr. Naeem-uz-Zafar and Ashraf Mrabet. These collaborations are essential to producing high-quality data that supports evidence-based decision-making and can support child well-being and educational equity. The panel discussion was successfully conducted, bringing together educators, data analysts, and policymakers to explore the transformative role of data in the educational landscape. The event fostered insightful dialogue and collaborative thinking around best practices, challenges, and future trends.

## 10.5 Glimpse of Panel Discussion 6





## 10.6 Actionable Points

### 1. Data Integration and Standardization

- **Develop a national data integration framework** in collaboration with provincial education departments, health, and social welfare sectors to ensure coherent, standardized data collection across regions and sectors.
- **Synchronize indicators** (such as enrollment, learning outcomes, dropout rates, health, and nutrition data) with international benchmarks (e.g., SDG 4, GPE frameworks).

### 2. Real-Time Data Collection and Accessibility

- **Upgrade PBS systems to support real-time data access** and dashboards for tracking key education indicators like out-of-school children, literacy rates, and attendance trends.
- **Implement open data policies** to ensure datasets are publicly accessible to **government departments, NGOs, researchers, and citizens** for planning, advocacy, and accountability.
- Establish a **national education data repository**, integrating public and private sector data, accessible through APIs to streamline policy decisions and program interventions.

### 3. Cross-Sectoral Coordination for Multi-Sectoral Impact

- Create joint working groups between PBS, education ministries, and the social protection sector (e.g., BISP) to collect and analyze multi-dimensional data—linking education with poverty, health, and nutrition outcomes.

- Introduce cross-sectoral reporting tools that provide consolidated insights (e.g., the impact of malnutrition on school attendance) to guide policy and budget decisions.

#### 4. Capacity Building in Data Analysis and Utilization

- Train PBS staff and provincial education officers in advanced data analytics and visualization tools (AI, GIS, and data dashboards) to enhance the use of data for evidence-based planning.
- Collaborate with universities and think tanks to build partnerships for deeper analytical insights from PBS data.

#### 5. Data Timeliness and Quality Control

- Reduce reporting lags by aligning data collection cycles across PBS and education departments to produce annual, timely reports with actionable insights.
- Introduce quality control protocols to improve the accuracy of school-level data and
- prevent discrepancies between provincial and federal datasets.

### 10.7 Conclusion

The panel discussion on "Data for Life and Equity: Closing Human Capital Gaps (Education)" highlighted the critical role of data in addressing education challenges and ensuring equity in Pakistan's education system. The insights shared by the distinguished speakers underscored the importance of data integration, real-time collection, and cross-sectoral coordination to inform effective policies and interventions. The actionable points proposed, including the development of a national data framework, capacity building in data analysis, and the establishment of a national education data repository, provide a clear roadmap for improving education outcomes. The collaboration between organizations like PBS and UNICEF Pakistan is essential to creating data-driven solutions that can help bridge gaps in access and quality, ultimately driving sustainable educational progress and meeting global goals.



