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Advancing Statistical Practices in Nepal: Towards Evidence-Based Policy

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Abstract

This paper studied the status of statistical systems and statistical practices in Nepal and identified the core challenges and the way forward. Based on global best practices and academic resources, it examines the importance of having sound and timely disaggregated data and its potential use to enable evidence-based policymaking in socio-economic development, public health, environmental sustainability, and disaster risk reduction. The paper discusses actions to enhance Nepal's National Statistical System (NSS) by strengthening data collection methods, improving data quality and dissemination, promoting statistical literacy, and enhancing the use of statistical evidence in policymaking and implementation. This study offers a comprehensive guide on strengthening statistical capacity and an evidence-based decision-making environment in Nepal by synthesizing learnings from global literature and localizing these within the Nepalese setting.

Keywords: *Statistical Practices, Evidence-Based Policy, National Statistical System, Data Quality, Data Dissemination, Statistical Literacy, Nepal.*

1. Introduction

There has never been a time when the need for reasonable and actionable data is more urgent than in an age fraught with complex social problems and the pursuit of sustainable development goals. Evidence-based policy-making, defined as using the best available research evidence to guide practice and policy, happens within the context of other factors and values on the part of stakeholders, and is at the root of sound governance (Sutcliffe & Court, 2005). Accurate and reliable statistical information is a cornerstone of good governance. It is essential in developing evidence-based policies and strategies that support the needs of a country.

Nepal, a country amid substantial socio-political-economic transformation, acknowledges the greater need for strengthening the statistical infrastructure and practice. Accurate, timely and disaggregated data is crucial to develop eff ective policies, to monitor progress towards national development goals and for guaranteeing accountability in good governance. Be it monitoring poverty reduction, improving public health, managing natural resources, or disaster risk reduction, credible statistics are needed for informed decision-making from the lowest level of government to the highest, and across all sectors.

However, like other developing countries, Nepal faces many challenges in establishing and maintaining an effective National Statistical System (NSS). These challenges include weaknesses in data collection methods, data quality and consistency, data dissemination, a shortage of experienced statistical staff, and literacy among data users, policymakers, and other stakeholders. Overcoming these challenges and promoting better statistical practices is paramount if Nepal leverages data to inform evidence-based policy and pursue its development goals.

This paper intends to provide an overview of Nepal's current statistical system, identify major weaknesses and gaps, and suggest strategies to take the NSS to an improved and strengthened system, capable of contributing directly to evidence-based policy. Making. 1.1. Juxtaposing against global academic knowledge on statistical development, data governance, and the science of evidence-based policy, this paper will situate these findings in Nepal's specific socio-economic and institutional environment. This article intends to contribute to the broader objective of improving statistical practices in Nepal and promoting a culture of policy decisions based on quality statistical information by exploring the challenges and opportunities for strengthening the same.

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2. Findings and Discussions

2.1 The Imperative of Evidence-Based Policy and the Role of Statistics

The policy of evidence-based policy (EBP) has enjoyed considerable vogue over the past two decades, a period that has seen a steady increase in the realisation that purely ideologically driven or politically motivated decision making can only go so far (Davies, 1999: 12). EBP relies on the methodical integration of the best available scientific evidence with policy and practice and the priorities of those affected. This evidence is wide-ranging, including scientific evidence, expert knowledge, stakeholder consultation, and statistics (Nutley et al, 2007).

Statistics is an important tool for EBP because it is the source of quantifiable and objective information regarding the condition of a society, the size of the problem, the impact of the intervention on the problem, and the achievement of the goal (Jerven, 2013). Good statistics help policymakers to:

- **Identifying problems:** Good data helps governments and other organizations understand where social, economic, and environmental problems exist and how they are distributed (like where people need clean water and where they do not). For instance, poverty figures can illustrate income disparity and assist in the development of money-saving plans.
- **Establish realistic goals and targets**. Baseline data and trend analysis provide the information needed to set policy objectives that are both achievable and measurable. For example, an estimate of disease prevalence from public health statistics may be used to set goals for vaccination campaigns or programs for disease control.
- **Develop efficient intervention:** Evidence on the statistical underpinnings of problems and the effectiveness of previous interventions can help select policy tools and intervention strategies. For instance, knowing what determines education decades into the future can help design good education policy.
- **Track implementation and evaluate impact:** When data is gathered regularly, policymakers can monitor the extent of policy implementation and evaluate its impact on the desired results. For example, labour force figures can be used to assess how well employment generation policies are working.
- **Promote accountability and transparency:** Stating population data decreases the excuses for arbitrary decision-making, as policymakers and other stakeholders are held accountable for their decisions and the consequences of their policies (Christensen et al., 2016).

Poor statistics can result in bad policies, suboptimal allocation of resources, and neglect of urgent human problems (Devarajan, 2013, pp. 93-106). Lacking sufficient data, good quality data, or easy access to data, decision-makers can be guided by anecdotal evidence, political expediency, or external pressures and end up with suboptimal results. Developing the statistical culture is not only a technical challenge, but a basic condition for good governance and sustainable development.

3. The Current State of Statistical Practices in Nepal

Statistical Data Generation. As the Central Bureau of Statistics (CBS) is Nepal's principal national statistical organization, we can look at the history of Nepal in the generation of statistics. The statistics bureau collects, compiles, analyzes, and publishes official statistics in multiple areas. Nepal has fledged the system of conducting national-level surveys and censuses, such as population and housing census, agriculture census, various socio-economic surveys, etc., over the years. Such investments have generated valuable information on the demography of the country, as well as on its socio-economic profiles and agricultural practices.

However, despite these gains, the statistical system in Nepal still has several challenges that prevent it from fully serving evidence-based policymaking:

- **Gap in and Incomplete data:** Although there is relatively good data collection in some sectors, significant data gaps are apparent in other important areas such as environmental statistics, employment in the informal sector, and disaggregated data at the sub-national level (World Bank, 2019). Insufficient access to comprehensive, timely data in these areas hampers policymakers' ability to comprehend the full extent of challenges and identify effective, targeted solutions.
- **Quality of Data:** Although issues of accuracy and comparability remain for some statistical collections, such issues can result from methodological shortcomings, insufficient training among data collectors, complications in data processing and validation, and a lack of standardisation of definitions and classifications among data sources (UNSD, 2018). Bad data quality confounds policymakers' ability to believe and use statistics.
- **Poor dissemination and accessibility of data**: The CBS, along with other government institutions, produces statistical reports and statistical data, but accessibility to more users, such as researchers, civil society, and the general public, is difficult. 6 Data portals may be weak, data formats may not be online in friendly formats, and awareness of different sources of data may be poor (PARC, 2020). This limits the broader use of statistical data in research and policy discussion.
- **Poor Statistical Literacy and Analytical Capability:** The need for and use of statistics in policy making is frequently limited by the absence of policy makers who are sufficiently numerate and

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by the shortage of competent statisticians within government and research units. This can result in shortfalls in understanding the strengths and weaknesses of statistical evidence and a diminished ability to interpret and use statistical evidence in policy processes (OECD, 2017).

- **Challenges of Coordination within the NSS:** Nepal's NSS comprises ministries, departments, and agencies that collect and analyze data. Limited coordination between these entities may result in duplicated work, varying data standards, and no integrated data systems (ADB, 2016). Efforts must be made to improve coordination between the various activities of the NSS system.
- **Lack of Resources and Infrastructure:** Statistical work is crippled by not enough budget resources, obsolete data, and deficient skilled labor. These constraints limit the NSS's ability to utilise modern data collection and analysis methods, undertake frequent surveys, and generate accurate data.

Addressing these challenges requires a concerted effort to strengthen the institutional framework, enhance technical capacities, and foster a culture of data use within Nepal's policymaking system.

4. International Best Practices in Statistical Development and Evidence-Based Policy

Nepal can learn valuable lessons from countries with mature statistical systems and a strong culture of using evidence for policy making. Many international best practices provide directions for progress concerning statistics:

- **Good Legal and Institutional Environment:** A strong legal environment defines the roles and responsibilities of the national statistical institution, protecting individuals' privacy and ensuring the production of independent and impartial statistics (UNECE, 2019). Official statistics must be maintained as a public good, rooted in the practice of an independent, well-resourced national statistical office with a clear mandate.
- **Alignment with International Statistical Standards and Methodologies:** The alignment of a country's statistical system with commonly agreed-upon statistical standards, classifications, and methodologies at the international level is a way to facilitate comparability of data as well as a means to ensure the national statistical system is integrated into the global statistical system (UNSD, 2003). It includes using standard survey tools, schemes, data variables, and statistical techniques.
- **Focus on Data Quality and Validation:** Clear and stringent data quality assurance mechanisms, such as solid data validation processes, metadata documentation, and detached quality assessment, are necessary in order to generate statistics that are accurate and credible (Eurostat, 2015). An important underpinning of any high-quality data system is the training of the personnel who collect and analyze the data, and the use of state-of-the-art data management practices.
- **Proactive Data Provisioning and Open Data Initiatives:** User-friendly data portals, data accessible formats, and active interactions with data users are key enablers to increasing the impact of statistics (OECD, 2012). Open data initiatives are part of open government ambitions and aim to achieve transparency, enable others to use data, and stimulate innovation.
- **Invest in Statistical Literacy and Capacity Building:** Developing programs focused on statistical literacy of policy makers, journalists, researchers, and the public is essential to fostering informed use of statistics (IASE, 2021). Investing in the training and professional development of statistical staff in the NSS is critical to technical capacity building.
- **Promoting Cooperation and Coordination:** A coherent mechanism for cooperation and coordination between different areas of the NSS (as well as between data producers and users) is necessary to make the NSS more coherent, avoid duplications, and use data effectively to meet data needs (IMF, 2013). This may include the creation of interagency committees and frequent communication with data users.
- **Capitalizing on Technological Innovation:** Utilizing advanced technologies for data collection (e.g., mobile surveys, remote sensing), data analysis (e.g., cloud computing, machine learning), and data dissemination (e.g., interactive dashboards, APIs) can significantly improve the efficiency and effectiveness of statistical work (UN Global Pulse 2018).
- **Creating an Ecosystem to Promote Use of Evidence in Policymaking:** Building strong relationships between producers and users of statistics through the establishment of a regular interface, use of statistical evidence for making policy briefs, and instituting statistical analysis in the formulation of policies is vital in promoting the use of evidence for decision-making." (Young et al., 2014).

By applying these international best practices, the country can make a great leap forward in improving its statistical system and evidence base for policy.

5. Strategies for Advancing Statistical Practices in Nepal

Based on the analysis of the current state and the insights from international best practices, the following strategies are proposed for advancing statistical practices in Nepal towards better support for evidence-based policymaking:

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5.1 Strengthening the Legal and Institutional Framework:

- **Statistical Act Review and Amendment:** Carry out a full-fledged review of the current Statistical Act to make it consistent with the important international principles of official statistics>>, clearly define the CBS's mandate and autonomy, ensure the privacy and confidentiality of statistics, and foster the production of high-quality, independent statistics.
- **Strengthen the CBS's Role and Capacity:** To enhance its role as the central coordinating body of the NSS, the CBS should be adequately funded and staffed, technically equipped, and empowered to set and enforce standards across the system.
- **Create a National Statistical Council:** Form a high-level National Statistical Council (comprised of government, academic, civil society, and private sector representatives) to give strategic direction and oversight to the NSS and keep it targeted and responsive to the country's data needs.

5.2 Enhancing Data Collection Methodologies and Data Quality:

- **Invest in State-of-the-Art Data Collection:** Techniques Start to shift to modern data collection techniques, embedding the use of CAPI, CAWI, and mobile data collection to achieve higher accuracy, lower data entry errors, and better timing.
- **Enhance Training and Capacity Building of Data Collection Staff:** Provide intense and ongoing training to field enumerators and data clerks to facilitate and conduct high-quality data coverage.
- **Establish and apply standard methods, classifications (e.g., ISIC, ISOC), and definitions:** The NSS uses and promotes internationally accepted statistical standards, classifications, and definitions in all data collection work to ensure data compatibility and consistency.
- **Implement Strong Data Quality Assurance Practices:** Construct and adopt thorough data quality assurance practices, which consist of rigorous data validity checks, metadata specification, and autonomous quality assessments for error source detection and correction.
- **Encourage Administrative Data Use:** Develop and improve the quality and interoperability of administrative data systems from government ministries and agencies to complement existing survey measurements and minimize the primary data collection burden.

5.3 Improving Data Dissemination and Accessibility:

- **Create a User-Friendly National Data Portal:** Develop a user-friendly and comprehensive national data portal as a one-stop online center where primary national statistics data are published. It should be easy to use, accessible in one place, free of charge, and available in multiple formats for data, metadata, and analytical reports.
- **Implement Open Data Policies**: Adopt open data policies and release statistical data in anonymised and non-confidential form so that the public, researchers, and all stakeholders may freely access (and utilise) the data, thereby increasing public data use and transparency.
- **Strengthen Data Use for Visualizing and Communicating Information:** Focus on developing tools and data visualization capacity to convey statistical information to policymakers and the public in analytic, engaging, and accessible ways.
- **Be Proactive in Engaging Data Users:** Develop channels for regular conversation and consultation with data users from government, academia, civil society, and the private sector to learn their data requirements and design data products and services.
- **Encouragement and Training in Data Literacy:** Incentivize and carry out workshops, seminars, and public awareness efforts to build statistical literacy among different users and make them more capable of understanding and using statistical data.

5.4 Fostering Statistical Literacy and Analytical Capacity:

- **Embed Statistical Concepts in Education Curricula:** Advocate for basic statistical concepts and data interpretation to be integrated into primary, secondary, and tertiary-level education curricula so students are introduced to statistical thinking from a young age.
- **Create Training for Policy makers and Analysts:** Create and run appropriate training programs for policymakers and government analysts so that they understand the value of statistical evidence and how to make use of statistics.
- **Reinforce Training Institutions:** Strengthen training institutions and universities in Nepal to produce professional statisticians and data analysts.
- **Increase Collaboration Between Statisticians and Policy Researchers:** Encourage statistical professionals to work closely with researchers so that statistical analysis is effectively applied to answering policy-relevant questions.

5.5 Enhancing Coordination within the National Statistical System:

- **Establish Inter-Agency Coordination Mechanisms:** Create formal inter-agency committees and working groups at different levels to improve coordination and collaboration among data-producing agencies, ensure the use of common standards, and avoid duplication of efforts.
- **Formulate NSDS:** Develop a comprehensive NSDS through a consultative process, which defines

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priorities, targets, and responsibilities for the entire NSS in the medium-term.

- **Foster Data Sharing and Interoperability:** Provide for standards and the infrastructure to enable data sharing and integration across government departments while respecting the privacy of shared data, which is essential for improving efficiency in the statistical system.

5.6 Leveraging Technological Advancements:

- **Invest in Modern Statistical Software and Hardware**: Modernize the technological infrastructure of the CBS and other statistical agencies through new investment in state-of-the-art statistical software, hardware, and data management systems.
- **Leverage Big Data and Data Analytics:** Explore the opportunities of using significant data sources and state-of-the-art, e.g., machine-learning-based data analytics to discover new sources of information and discoveries, as well as efficiency improvements for statistical processes (addressing issues of ethics and privacy) (Floridi et al., 2018).
- **Utilize Geospatial Technologies:** Geospatial technology and Geographic Information Systems (GIS) improve spatial analysis and statistical information presentation, contributing to valuable regional planning and development.

6. Conclusion

Continuous improvement in statistical practices is a premise for nurturing a culture of evidence-based policymaking and sustainable development in Nepal. Though progress has been made in building up a national statistical system and collecting important statistics, there are significant constraints in data gaps, quality, dissemination, statistical literacy, and coordination.

Leveraging best practices from other countries through targeted approaches, Nepal can reinforce its NSS and improve its ability to generate and use high-quality statistical evidence. The recommendations for strategies, based on pillars to strengthen the legal and institutional system, data collection infrastructure and quality, data dissemination system and accessibility, statistical literacy and analytical power, coordination and complementarity, and technology innovation, lay out the overall roadmap feasible in this development.

This takes persistence, investment, and mutual engagement with all stakeholders, government entities, academia, civil society, and the international community. Suppose Nepal prioritizes the modernization of its statistical practices. In that case, it will be able to arm its policymakers with sound data necessary for informed decision-making, efficient resource allocation, monitoring progress, and, ultimately, the well-being of all Nepalese. Cultivating a culture of evidence-based policymaking, supported by sound statistical principles, will be essential in helping Nepal to traverse the challenges of the 21st century and realise its desires for a prosperous, equitable future.

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