12th National Summit of Health and Population Scientists in Nepal, Kathmandu

Reforming Health Financing: Navigating Nepal's Health Insurance Program

Measuring Health System Efficiency in Nepal: A DEA Analysis of Local Governments

12 April 2026

Ravi Kanta Mishra,
PhD Candidate, BCEPS, UiB, Norway
Senior Public Health Officer, Ministry of Health and Population, Nepal

B·CEPS

UNIVERSITY OF BERGEN

Outline

1. Background
2. Methods
3. Findings
4. Policy Recommendations
5. Conclusions

CONSTITUTION OF NEPAL

1 Basic Health Care Services

Existing Law

Public Health Service Act 2075
Public Health Service Regulation 2077

(क) खोप सेवा,
(ख) एकीकृत नवजात शिशु तथा बालरोग व्यवस्थापन, पोषण सेवा, गर्भवती, प्रसव तथा सुत्केरी सेवा, परिवार नियोजन, गर्भपतन तथा प्रजनन स्वास्थ्य जस्ता मातृ, नवजात शिशु तथा बाल स्वास्थ्य सेवा,
(ग) सरूवा रोग सम्बन्धी सेवा,
(घ) नसर्ने रोग तथा शारीरिक विकलाङ्गता सम्बन्धी सेवा,
(ङ) मानसिक रोग सम्बन्धी सेवा,
(च) जेष्ठ नागरिक स्वास्थ्य सम्बन्धी सेवा,
(छ) सामान्य आकस्मिक अवस्थाका सेवा,
(ज) स्वास्थ्य प्रवर्द्धन सेवा,
(झ) आयुर्वेद तथा अन्य मान्यता प्राप्त वैकल्पिक स्वास्थ्य सेवा,
(ञ) नेपाल सरकारले नेपाल राजपत्रमा सूचना जारी गरी तोकेका अन्य सेवा।

Local Governments

- Basic Hospitals
- PHCC
- HPs
- BHSC
- UHC
- CHU
- Ayurved Dispensaries

2 Health Insurance

Existing Law

Health Insurance Act 2074
Health Insurance Regulations 2075

(क) योग, पोषण शिक्षा, बानी व्यहोरा सुधार, मनो-सामाजिक परामर्श जस्ता प्रवर्द्धनात्मक सेवा,
(ख) खोप, परिवार नियोजन, सुरक्षित मातृत्व जस्ता प्रतिकारात्मक सेवा,
(ग) बहिरङ्ग, भर्ना उपचार, आकस्मिक, शल्यक्रिया, औषधि, स्वास्थ्य सहायता उपकरण जस्ता उपचारात्मक सेवा,
(घ) निदानात्मक वा पुनर्स्थापना सम्बन्धी सेवा,
(ङ) एम्बुलेन्स सेवा,
(च) तोकिए बमोजिमका अन्य सेवा।

(२) उपदफा (१) मा जुनसुकै कुरा लेखिएको भए तापनि कुनै व्यक्तिलाई निःशुल्क रूपमा आधारभूत स्वास्थ्य सेवा तथा प्रचलित कानून बमोजिम पाएको कुनै स्वास्थ्य सेवा लिन बाधा पुगेको मानिने छैन।

स्पष्टीकरण : यस उपदफाको प्रयोजनको लागि "आधारभूत स्वास्थ्य सेवा" भन्नाले नेपाल सरकारले तोके बमोजिमको स्वास्थ्य सेवा सम्झनु पर्छ।

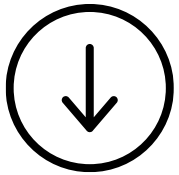
Hospitals

Background (1/2)

20–40% of health resources are wasted due to inefficiency

42% of progress toward UHC in LMICs could be achieved through improvements in efficiency

Limited Evidence Health system efficiency, especially in LMICs



In South Asia, Most health systems operate below the efficiency frontier

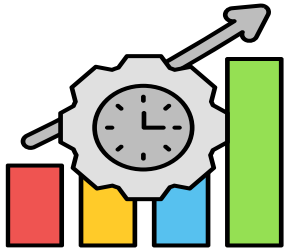
B·CEPS

UNIVERSITY OF BERGEN

Background (2/2)

In Nepal, only a few studies have assessed health facility performance

No studies have examined health-sector efficiency at the local level

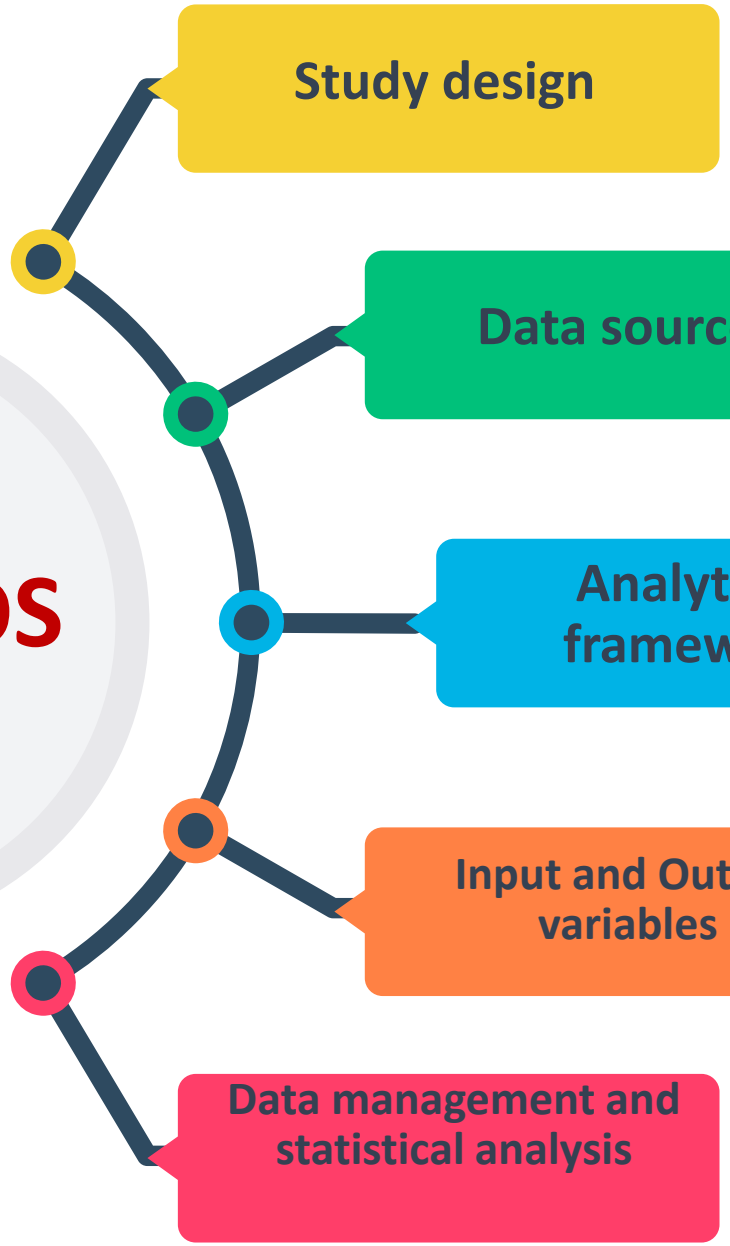


Aims to assess the relative efficiency of local governments delivering BHCS

B·CEPS

UNIVERSITY OF BERGEN

METHODS



- Quantitative cross-sectional study
- The local government was selected as the unit of analysis

- Secondary data of 2020, 2021, 2022
- SuTRA, HFR, HWMR, HMIS

Efficiency was assessed using the DEA

- CCR, BCC, SE, and
- Malmquist Productivity Index

Inputs

- Target Population
- Budget Expenditures
- Health Facilities
- HWs

Output

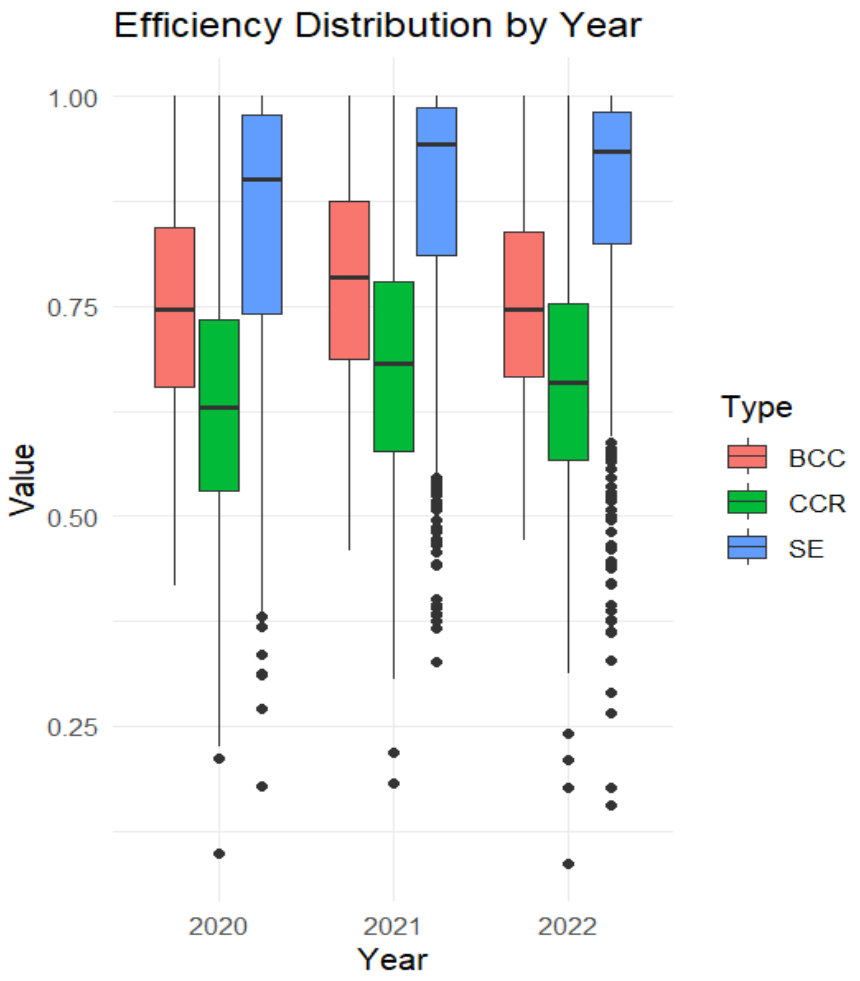
- MR2 Immunized Children
- ANC4 Visit
- # New TB Case

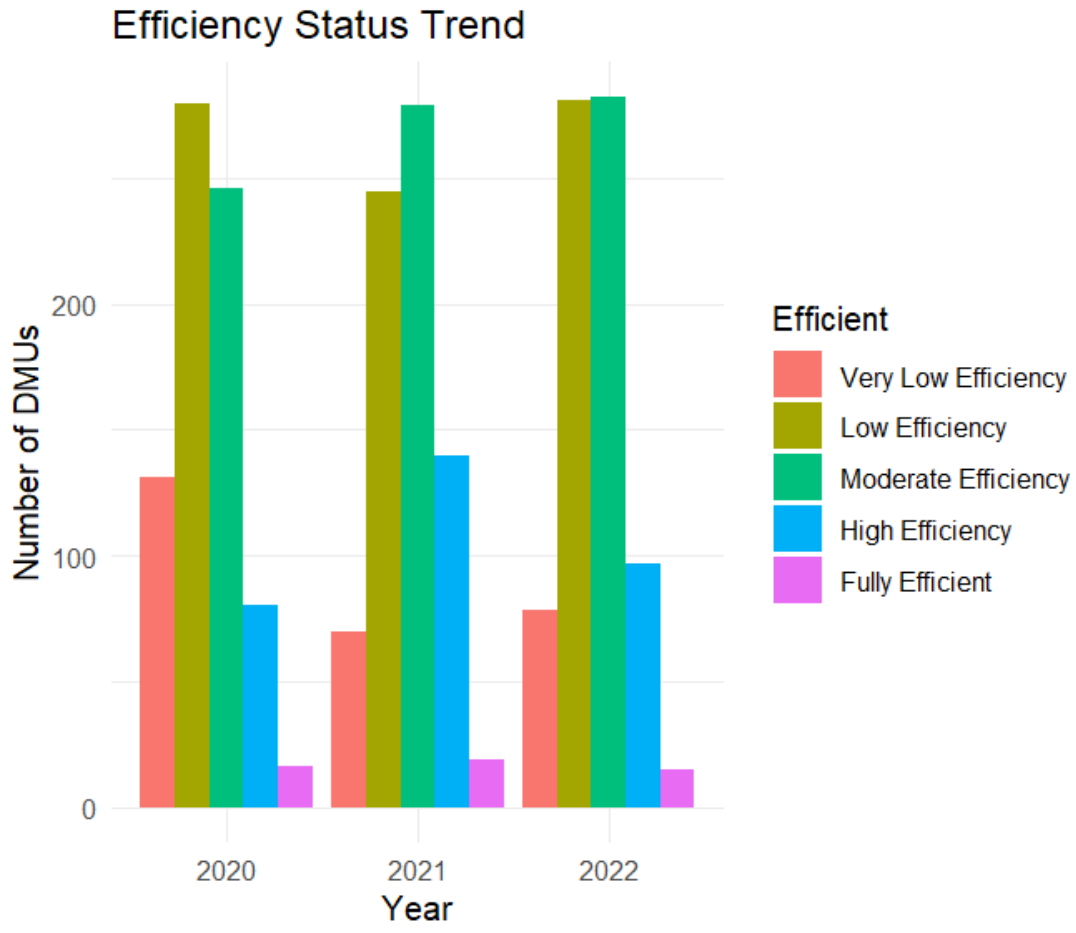
- deaR
- R (Benchmarking)

B·CEPS

UNIVERSITY OF BERGEN

Findings (1/5)

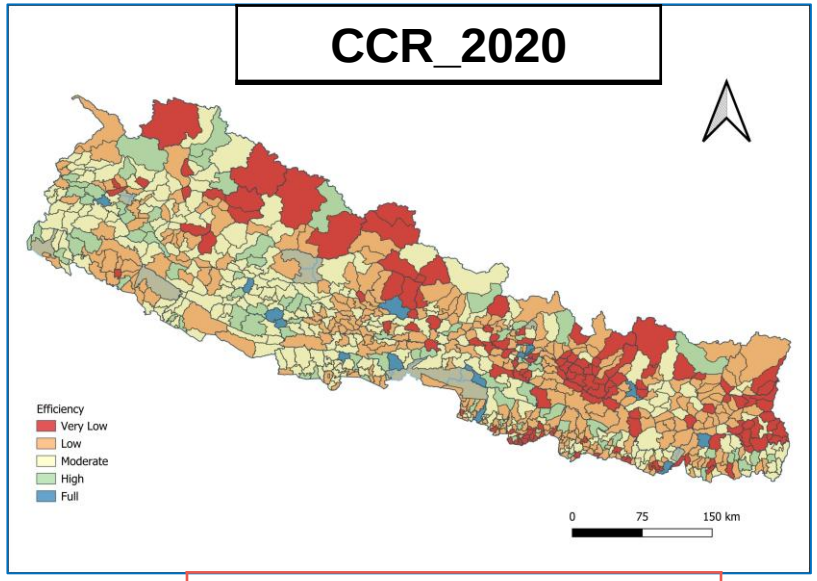




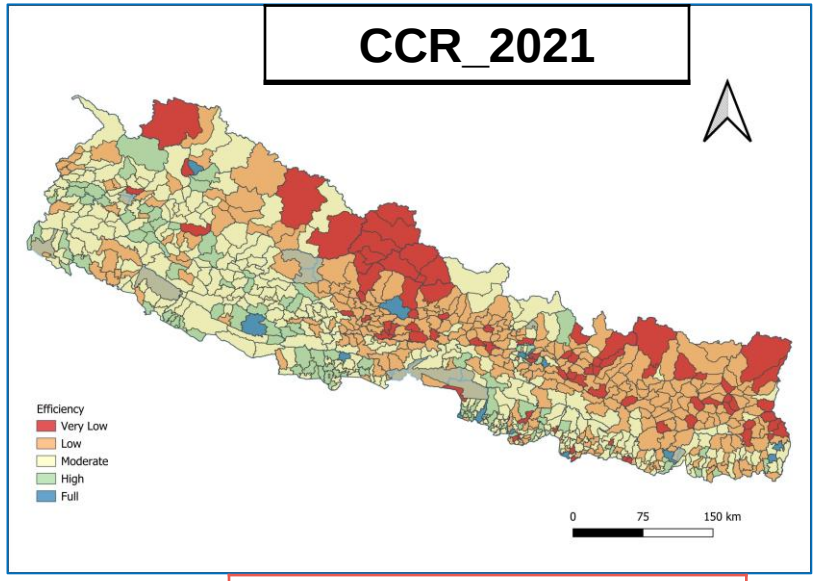
B·CEPS

UNIVERSITY OF BERGEN

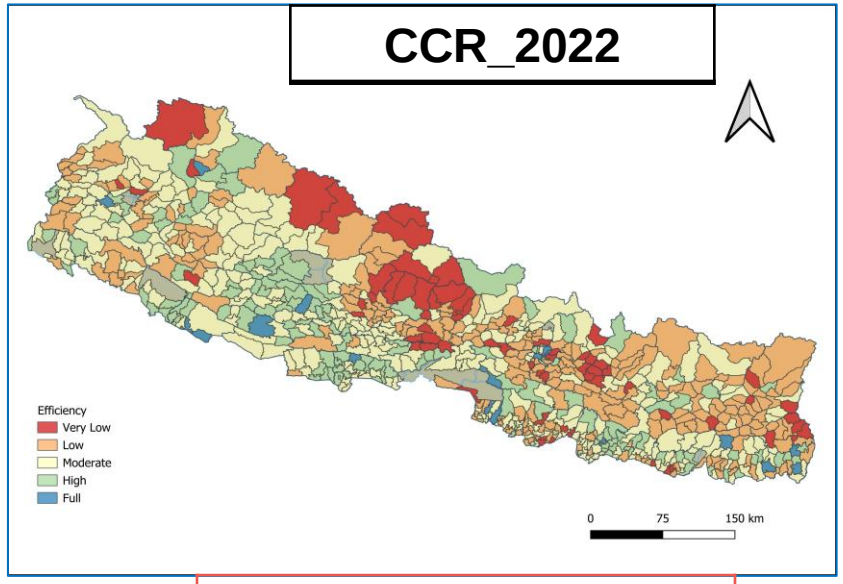
Findings (2/5)



Mean= 0.64
Fully Efficient LGs=16



Mean= 0.68
Fully Efficient LGs =19



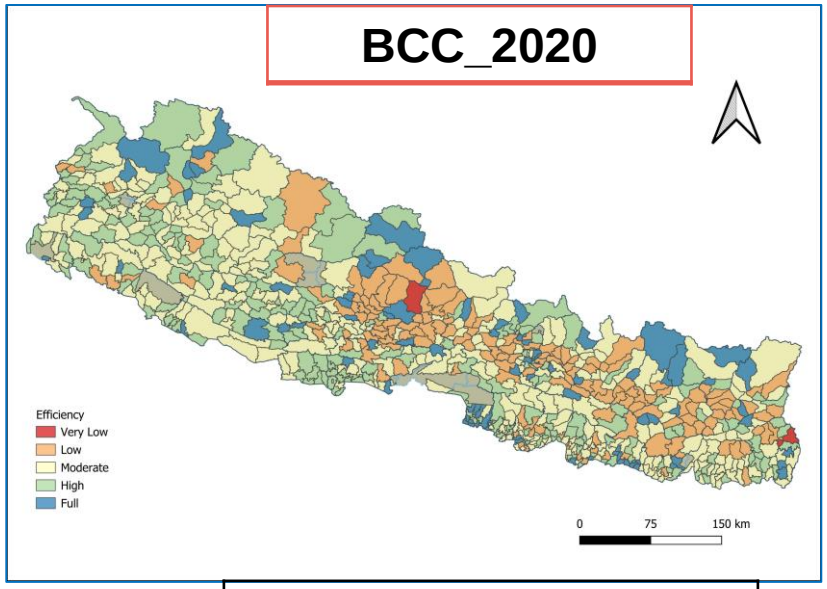
Mean= 0.66
Fully Efficient LGs= 15

Constant Returns to Scale (CCR)

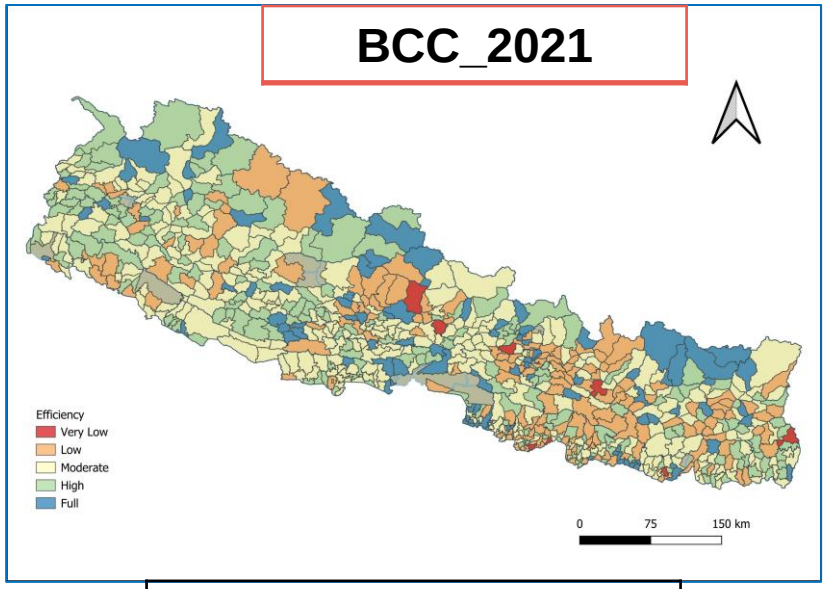
B·CEPS

UNIVERSITY OF BERGEN

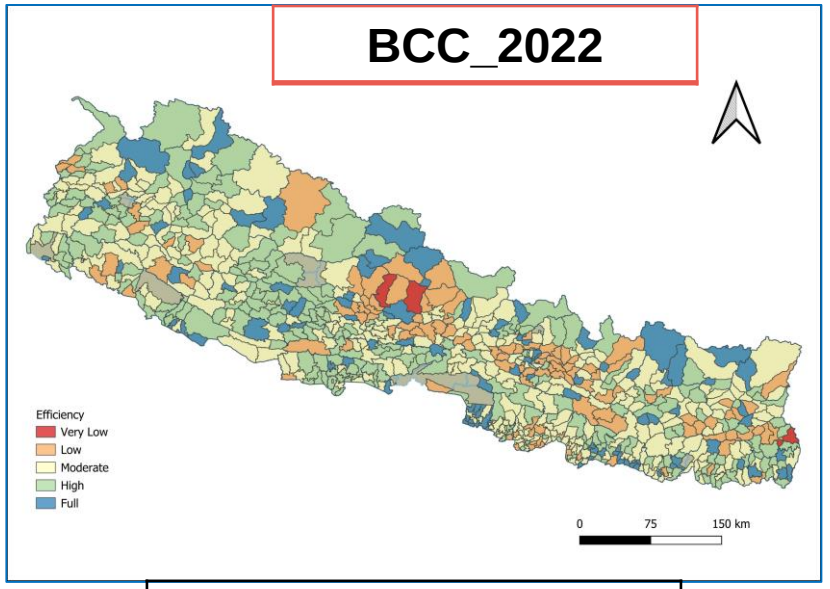
Findings (3/5)



Mean= 0.76
Fully Efficient LGs=97



Mean= 0.79
Fully Efficient LGs=102



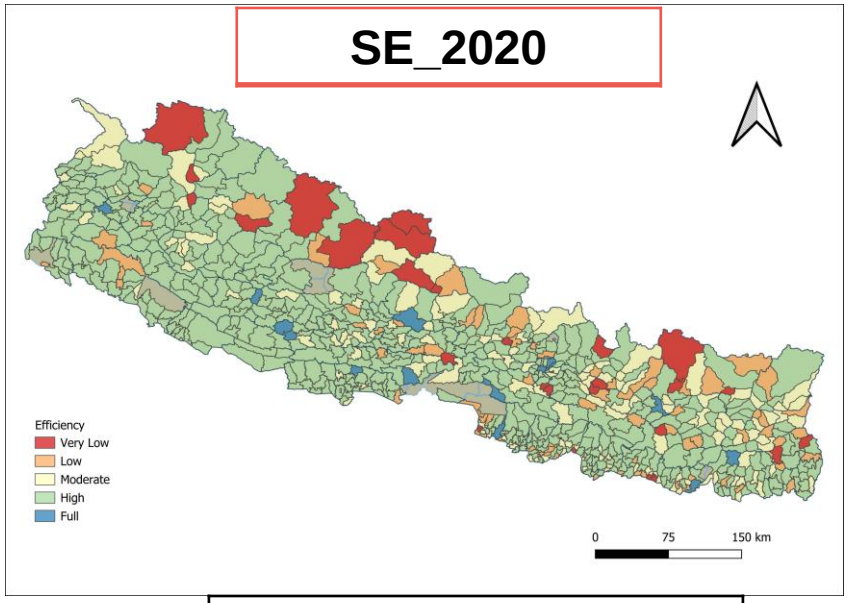
Mean= 0.76
Fully Efficient LGs=88

Variable Returns to Scale (BCC)

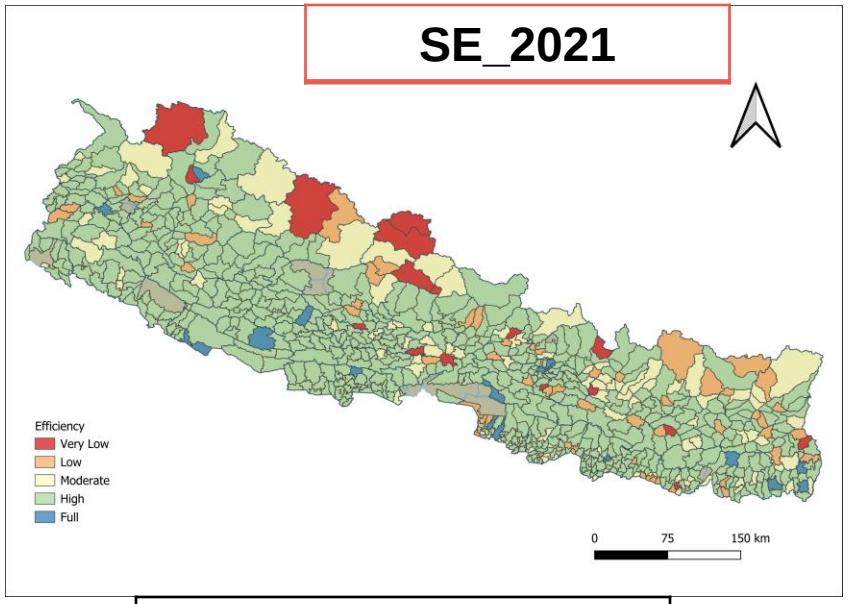
B·CEPS

UNIVERSITY OF BERGEN

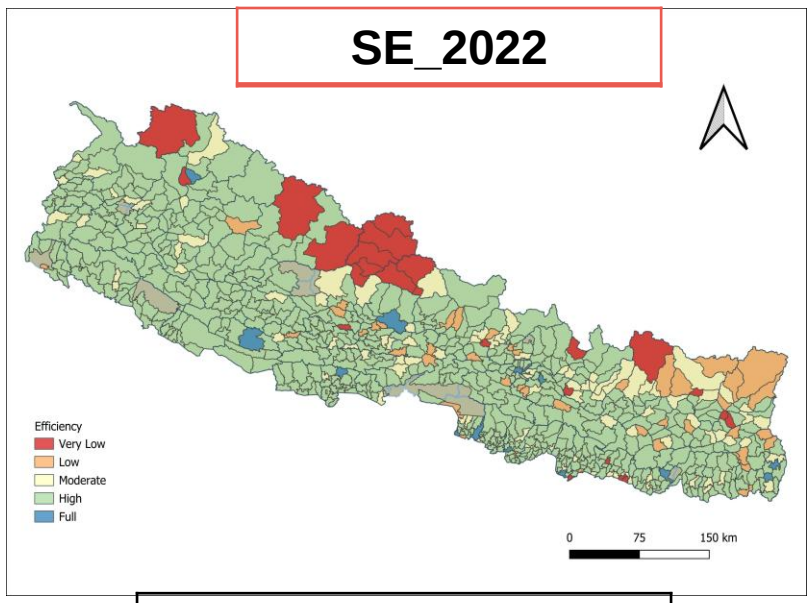
Findings (4/5)



Mean= 0.84



Mean= 0.88



Mean= 0.88

Scale Efficiency (SE)

B·CEPS

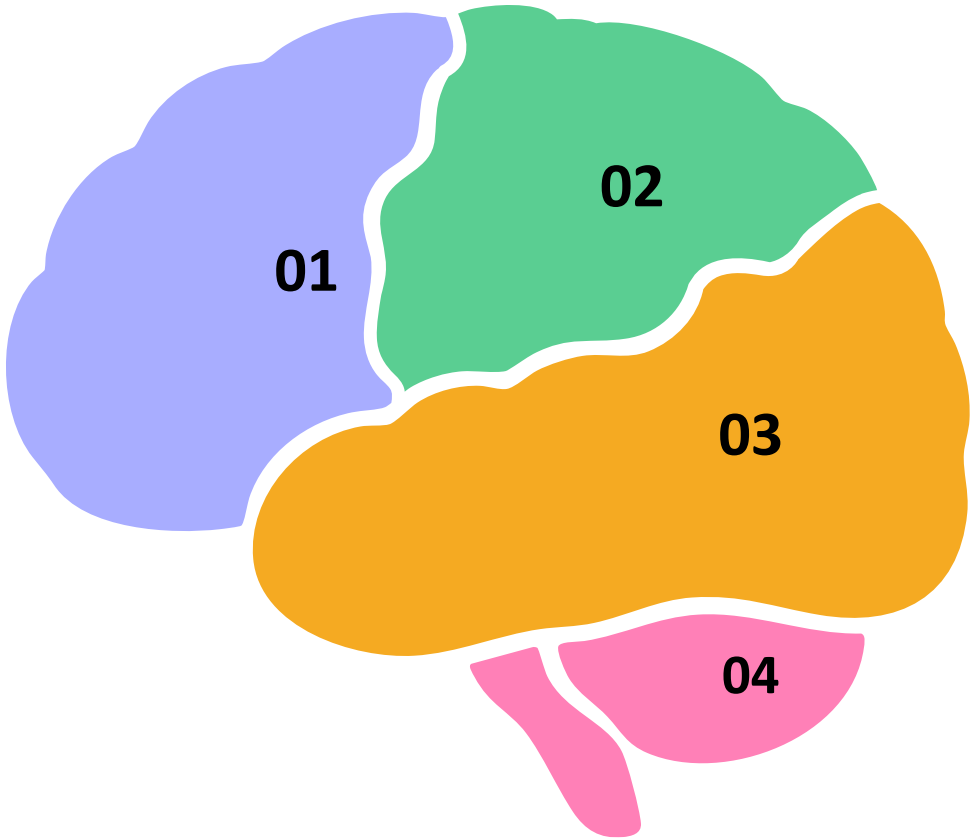
UNIVERSITY OF BERGEN

Findings (5/5)

Period	Efficiency Change (EFFCH)	Technical Change	TFP Change
2020–2021	1.041	1.025	1.067
2021–2022	0.979	0.991	0.973

Period	Improved (>1)	No change (=1)	Declined (<1)
2020–2021	478	39	236
2021–2022	258	67	428

Policy Implication



- Inefficiency in BHCS delivery is driven more by managerial and operational factors than by scale.
- Stronger capacity in planning, budgeting, supervision, and service management to improve performance.
- Need for sustained performance monitoring and supportive governance mechanisms.
- Routine efficiency assessment should be integrated into decentralized health planning to guide resource allocation and targeted technical support.

Conclusion

1

Moderate

Efficiency in delivering BHCS

CCR= 0.64-0.68

BCC= 0.76-0.79

2

Scale efficiency

Relatively high (0.84–0.88)

3

Inefficiency

Driven more by operational and managerial weaknesses

4

Policy attention

Need for policy attention beyond resource expansion alone

Study Team

Ravi Kanta Mishra[1,2], Subekshya Thapaliya[3],

Suman Sapkota[4], Achyut Raj Pandey[1], Pratik Khanal[1],

Kjell Arne Johansson[1], Krishna Kumar Aryal[1], Shiva Raj Adhikari[1,4,5]

[1]*Bergen Centre for Ethics and Priority Setting in Health (BCEPS), Department of Global Public Health and Primary Care, University of Bergen, Bergen, Norway*

[2] *Ministry of Health and Population, Government of Nepal, Kathmandu, Nepal*

[3]*Norvic College of Health Sciences and Technologies, Kathmandu, Nepal*

[4]*Nepal Health Economics Association, Kathmandu, Nepal*

[5]*Central Department of Economics, Tribhuvan University, Kathmandu, Nepal*

B·CEPS

UNIVERSITY OF BERGEN

Thank You

Ravi Kanta Mishra

PhD Candidate, BCEPS, UiB

ravi.mishra@uib.no

Senior Public Health Officer, PPMD

Ministry of Health and Population

ravimishramohp@gmail.com

B·CEPS

UNIVERSITY OF BERGEN