

17th Sustainable Shared Growth Seminar
University of the Philippines- Diliman

Spatial Distribution of Knowledge in the Philippines

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— Knowledge into Action —



Outline

Introduction

Data and Methodology

Philippines Knowledge Economy

Regional Knowledge Economy

Knowledge

- fundamental resource for economic efficiency and growth;
- knowledge accumulation is essential for economic systems to be able to face world competition;
- new and appealing products become vital for stimulating scarce demand;
- new organizational and managerial solutions are crucial for increasing firm's efficiency
- Source of comparative advantage of most developed economies

Space and Knowledge Economy

- externalities stemming from urban environments
- knowledge spillovers subject to strong and visible distance decay
- collective learning occur and embedded in geographical space.
- Silicon Valley, Third Italy

Knowledge and Innovation Measurement

Oslo and Bogota Manual

OECD

human capital

R&D inputs(R&D investment and personnel)

R&D Outputs(Patents)

Aims of the research

- Analyze the the geographical distribution of knowledge in the Philippines.
- Contribute to the understanding of the spatial dimension of knowledge in developing countries

Data

Input

R&D Personnel (Public, Private, and Non-profit)
Higher Education Institutions (HEI) Enrollment
R&D Expenditure (Public, Private, Non-profit, and Industry)
Number of micro, small, and medium enterprises (MSME)
Number of HEI (Public and Private)

Output

LET Passing Rate
Other Fields Passing Rate
COE Programs
COD Programs
Gross Regional Domestic Product (GRDP)

Methodology

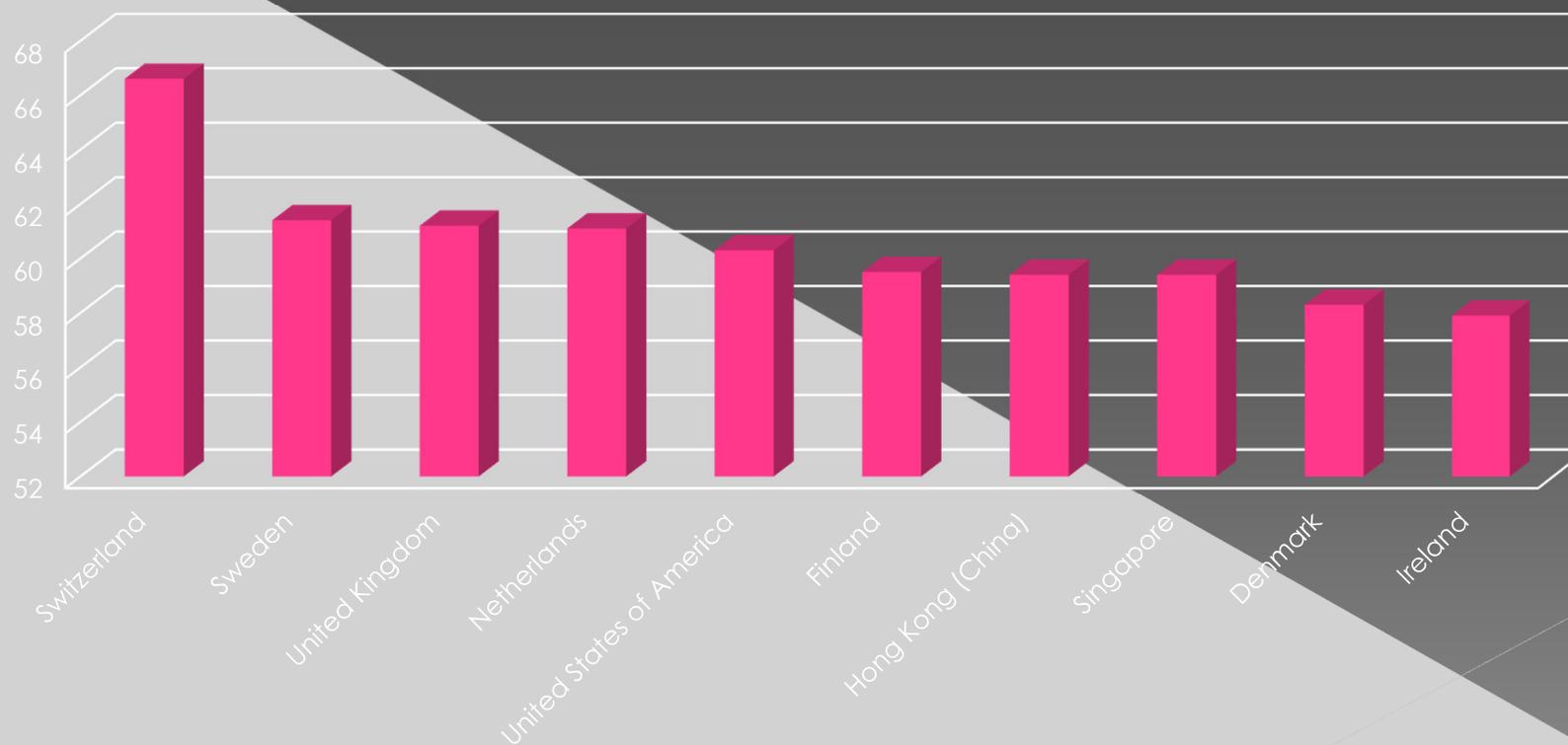
Unit of Analysis: Regions

Principal Component Analysis (PCA)

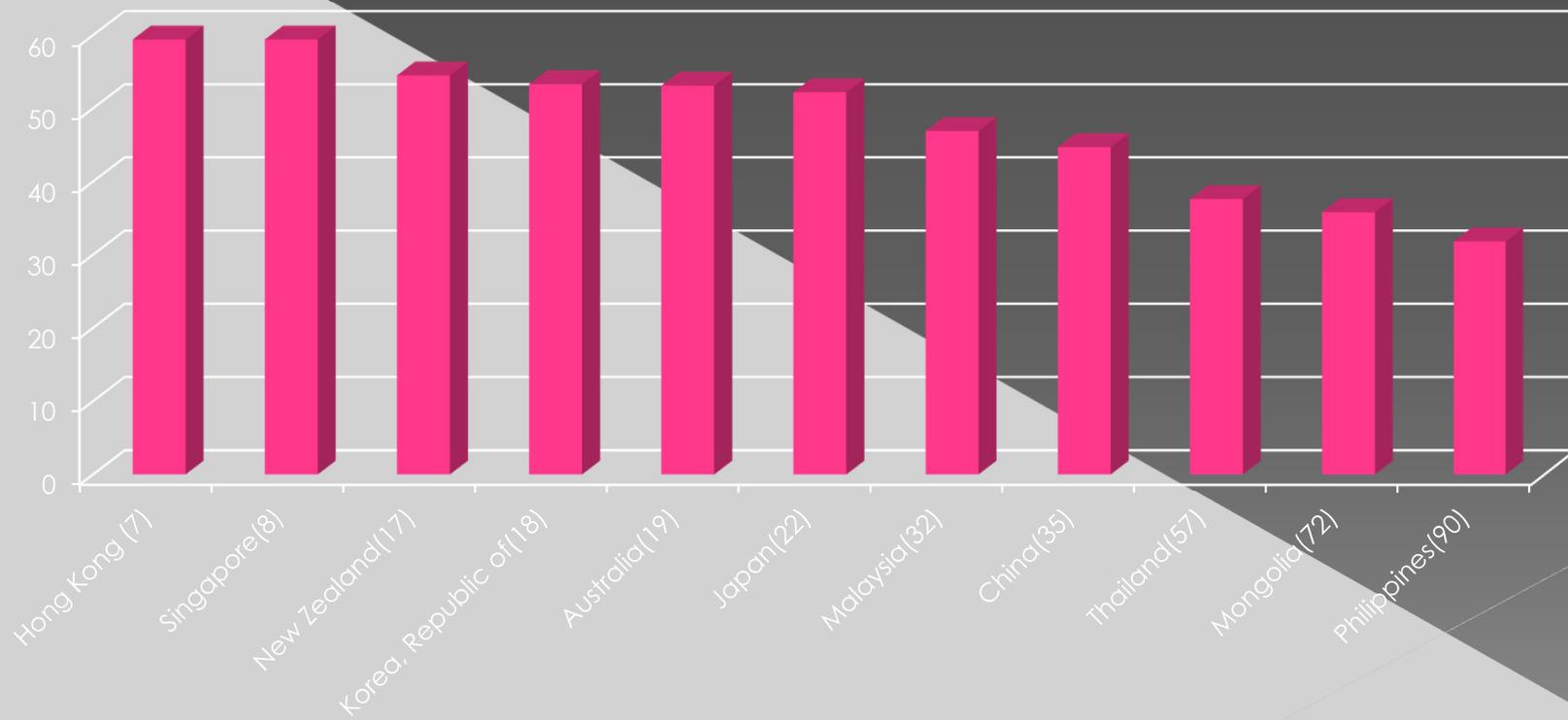
Global Innovation Index(GII) 2013

- Cornell University, INSEAD and the World Intellectual Property Organization (WIPO).
- (1) Institutions,
- (2) Human capital and research,
- (3) Infrastructure,
- (4) Market sophistication,
- (5) Business sophistication.
- (6) Knowledge and technology outputs and
- (7) Creative outputs.

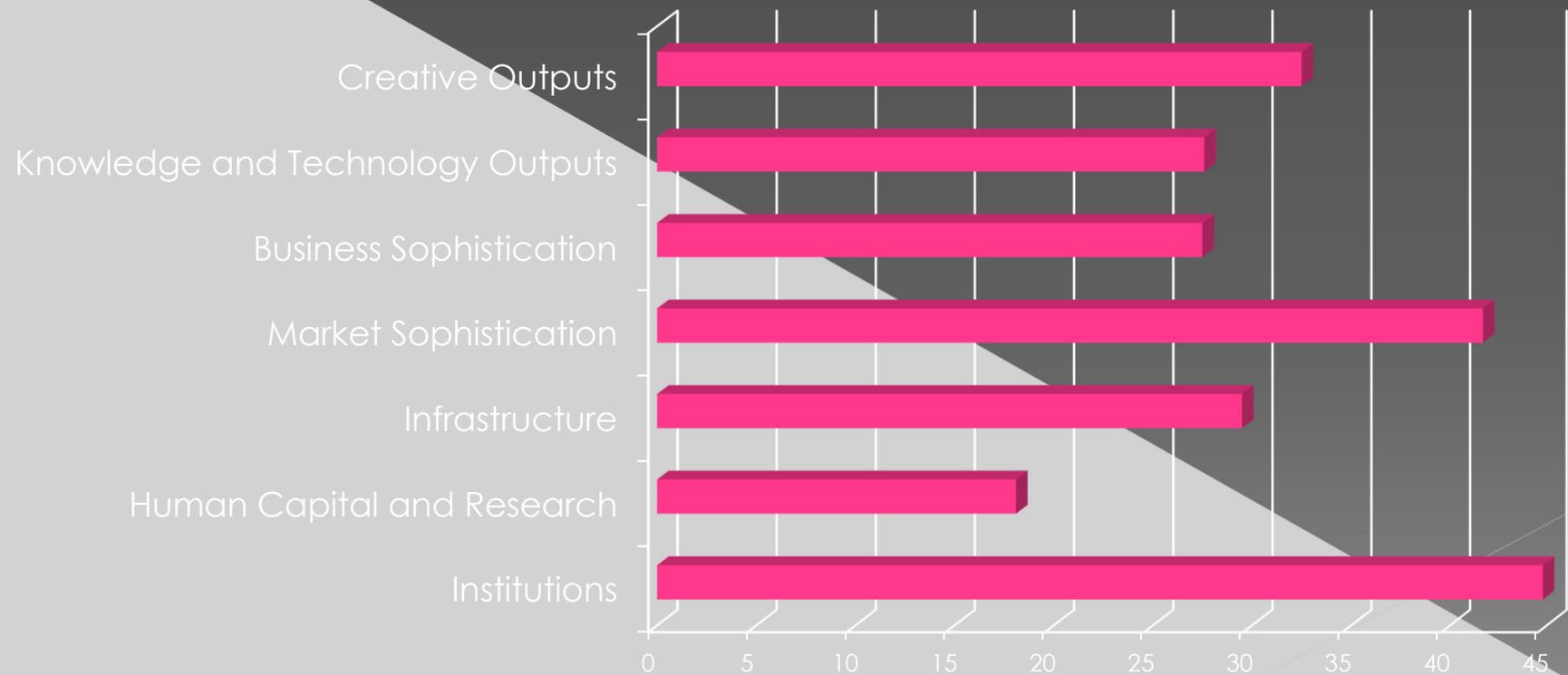
Global Innovation Index 2013 (Top 10)



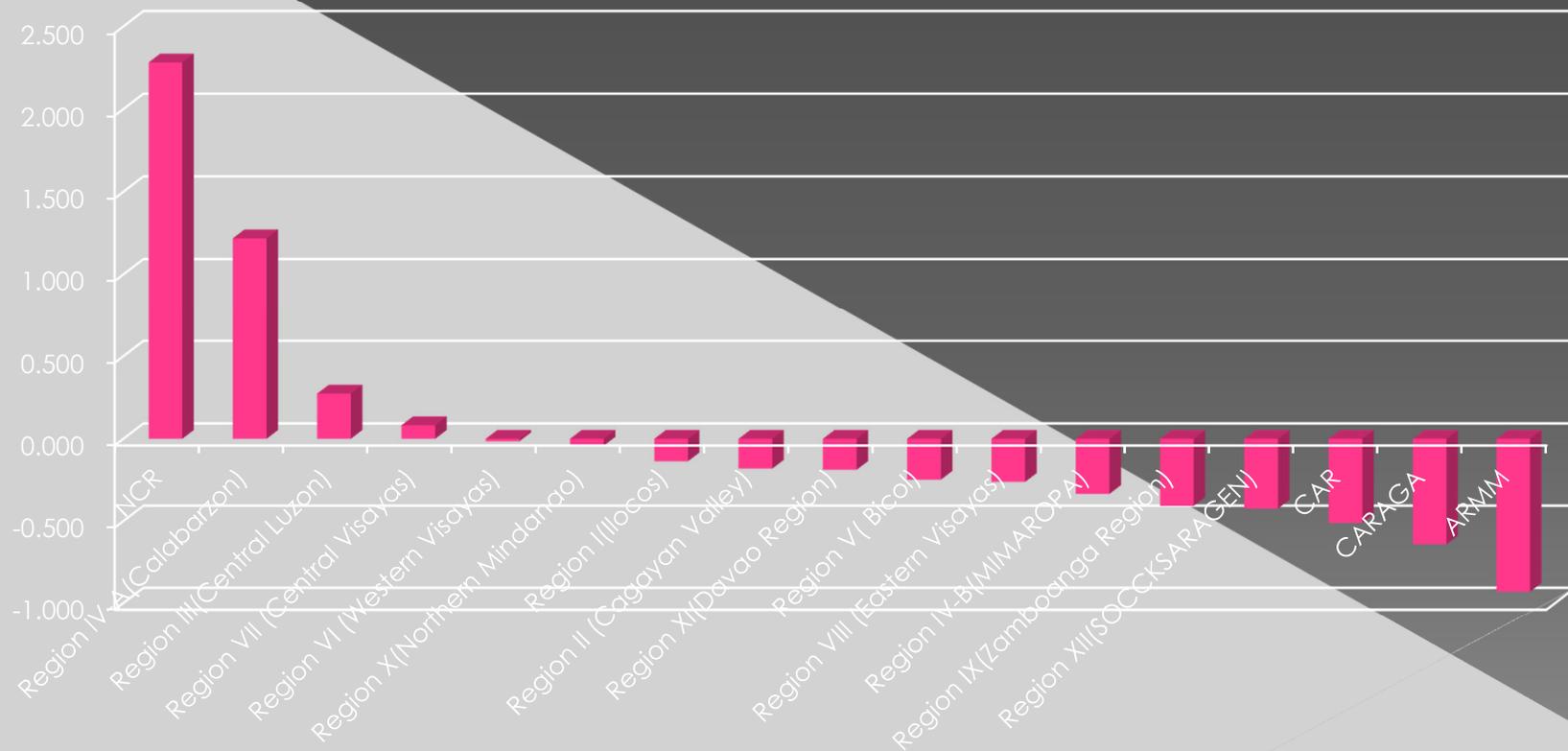
Global Innovation Index 2013 (Asia & Pacific)



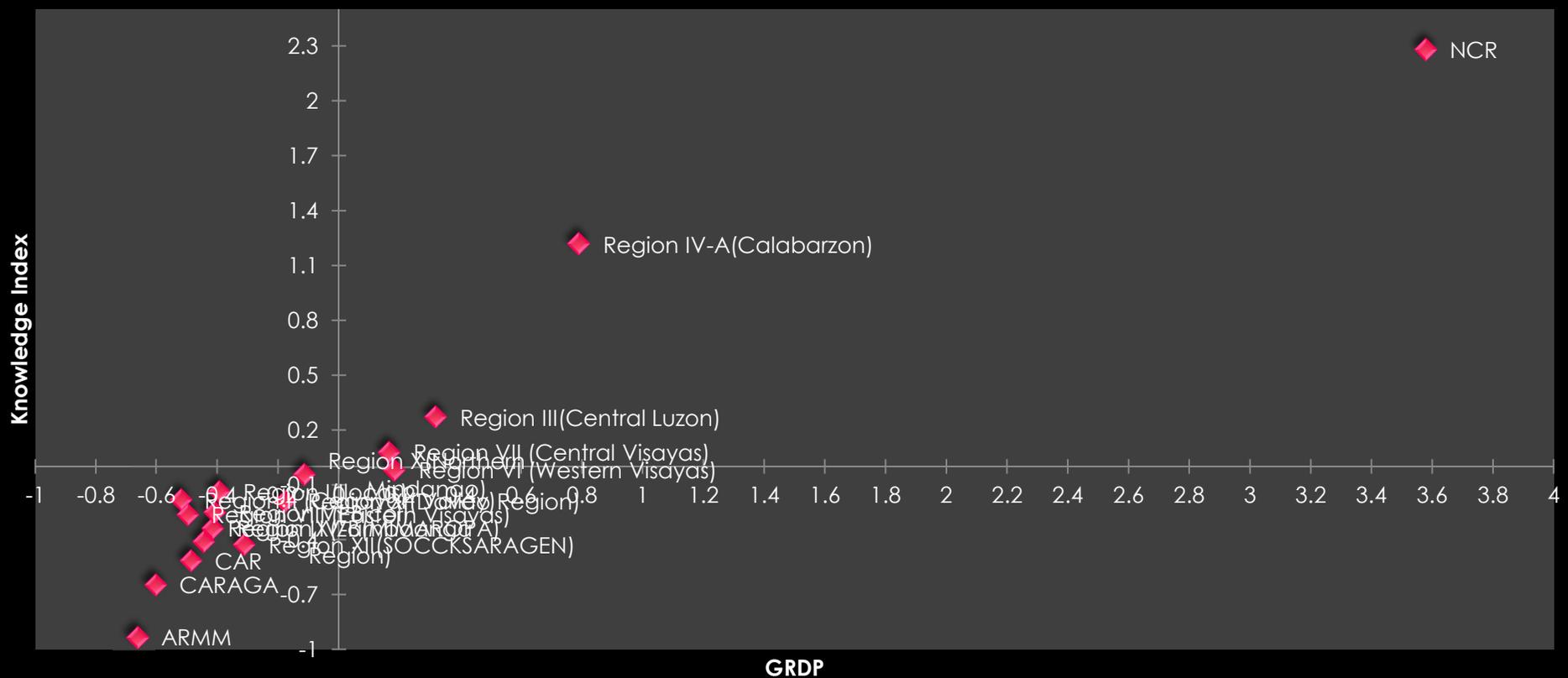
Global Innovation Index 2013 (Philippines)



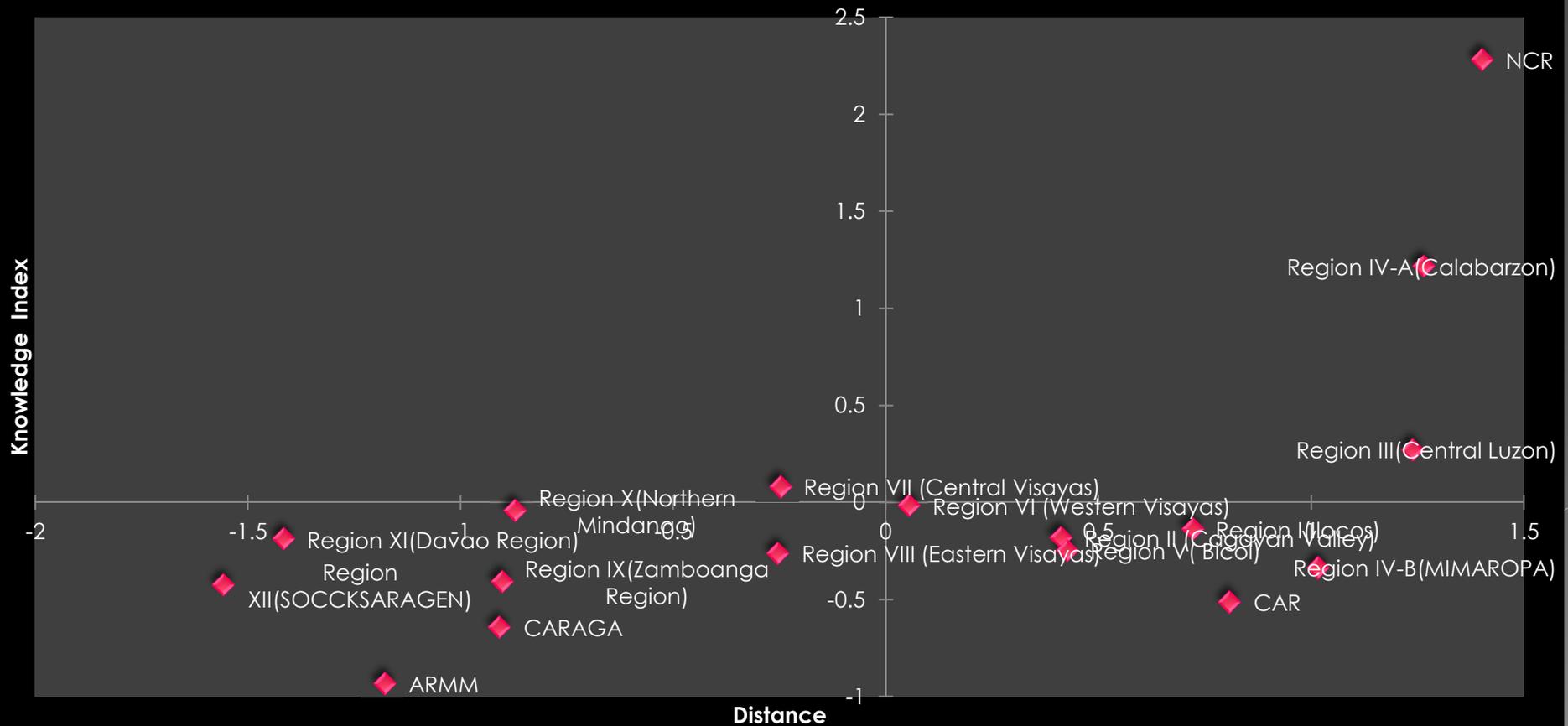
Regional Knowledge Index



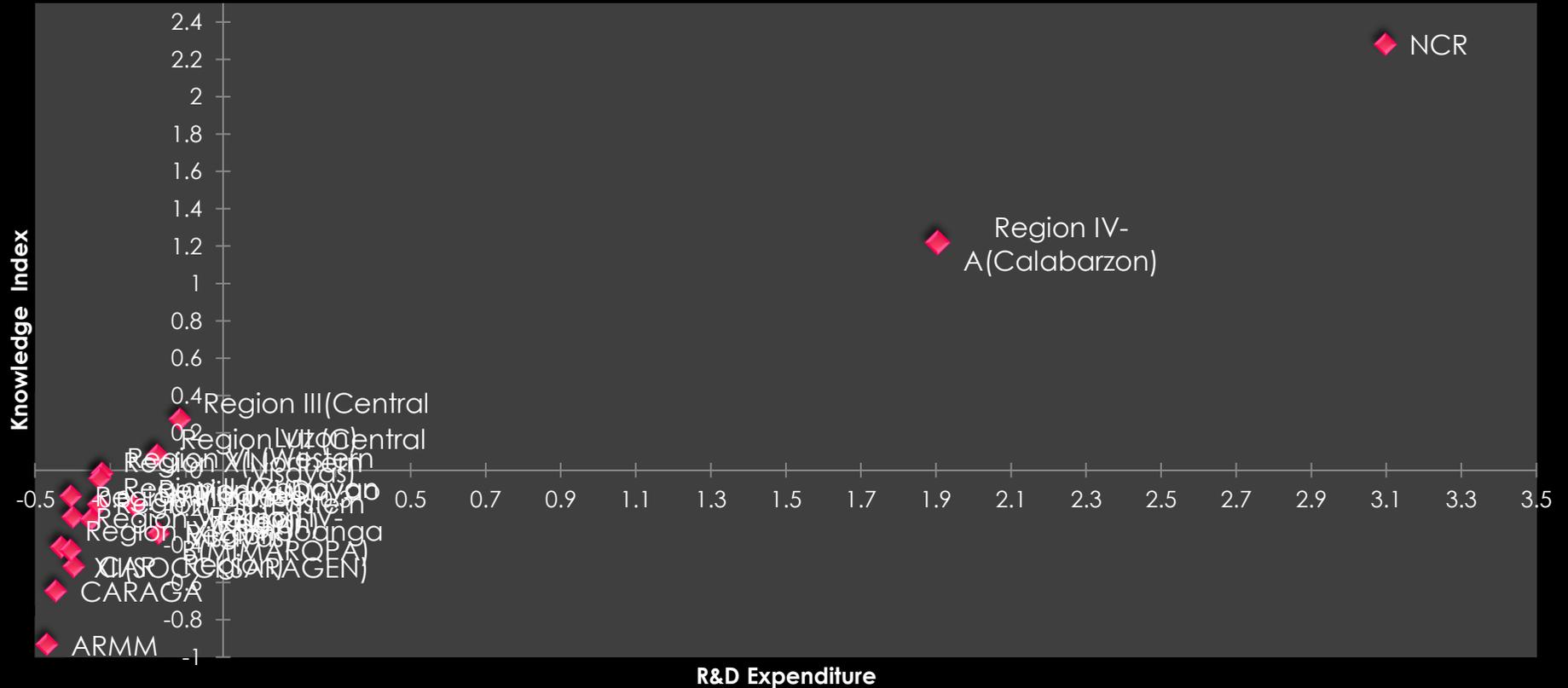
Knowledge Index and GRDP



Knowledge Index and Distance to the Capital



Knowledge Index and R&D Expenditure



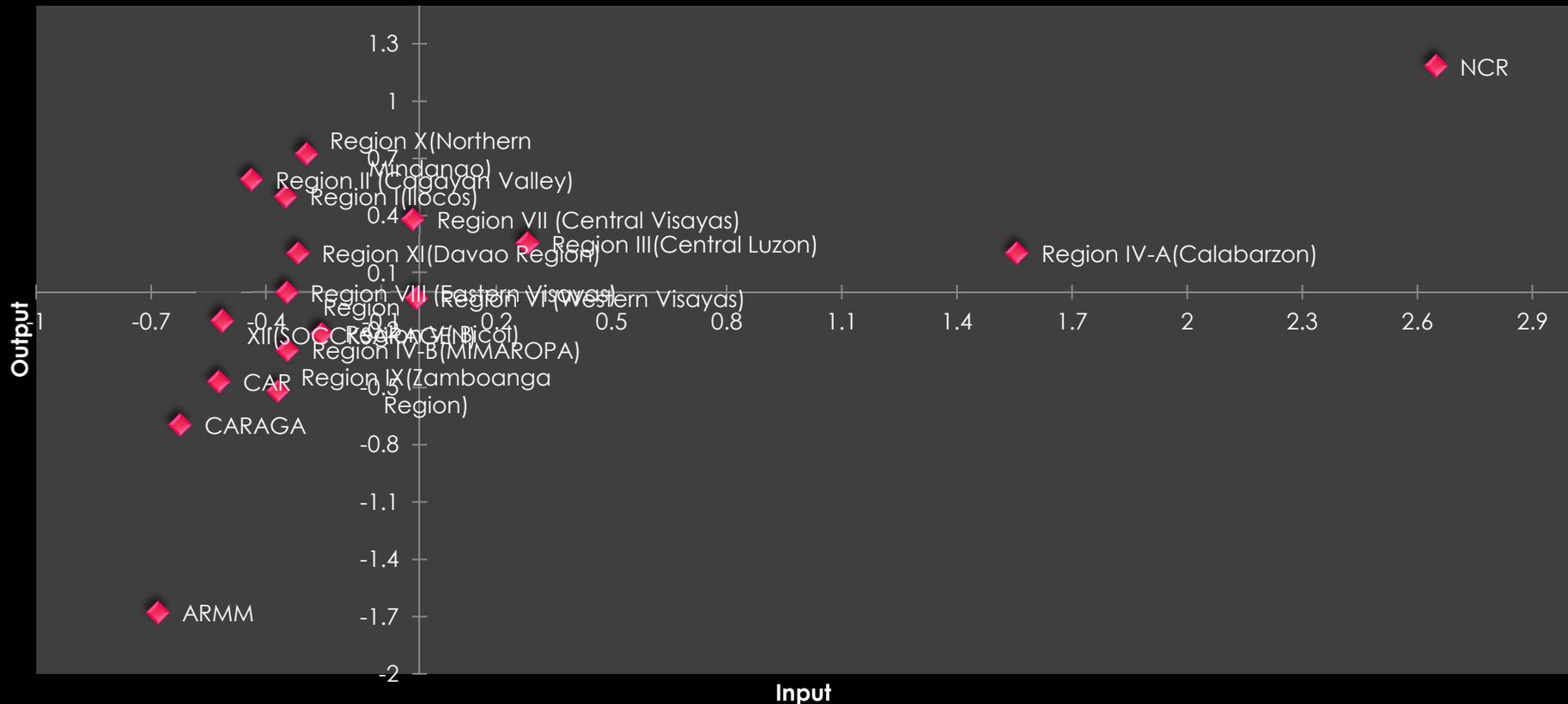
Taxonomy of Regions 1: Knowledge Index and R&D Expenditure

High Knowledge Index, Low R&D Expenditure
Region III(Central Luzon)
Region VII(Central Visayas)

High Knowledge Index, High R&D Expenditure
NCR
Region IV-A

Low Knowledge Index, Low R&D Expenditure
ARMM, CAR, CARAGA, Region I,
Region II, Region IV-B, Region VI,
Region VIII, Region IX, Region X,
Region XI, Region XII

Input and Output Indicators



Taxonomy of Regions 2: Input and Output Indicators

High Input, Low Output
Region I, Region II, Region VII,
Region VIII, Region X, Region XII

High Input, High Output
NCR
Region III
Region IV-A

Low Input, Low Output
Region IV-B, Region V, Region VI,
Region IX, Region XII, CARAGA,
CAR, ARMM

Low Input, High Output

Concluding Remarks

- Huge gap among regions
- More affluent regions have higher knowledge index
- Proximity to the capital translates to higher knowledge index
- Majority of the regions, especially in Mindanao fare poorly in the taxonomy

References

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