



**15TH NATIONAL
CONVENTION
ON STATISTICS**

03-05 OCTOBER 2022

*Organized by the Philippine Statistical System
Spearheaded by the Philippine Statistics Authority*



Measuring Child Development Index (CDI) Before and During the COVID-19 Pandemic

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Child and Youth Development Indicators

Crowne Plaza Manila Galleria

04 October 2022, 3:30 – 5:00 PM

Measuring CDI Before and During the COVID-19 Pandemic










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Outline of the Presentation

-  I. Introduction
-  II. Methodology
-  III. Results
-  IV. Limitations of the Study
-  V. Conclusions
-  VI. Ways Forward
-  VII. References



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I. Introduction



Children are among
the vulnerable sectors
in our society



23.9% of Filipino
children were poor in
2018

Source: Official Poverty Statistics among the Basic Sectors, PSA

Presidential Decree no. 603 “Child and Youth Welfare Code”

Article 3– Rights of a Child





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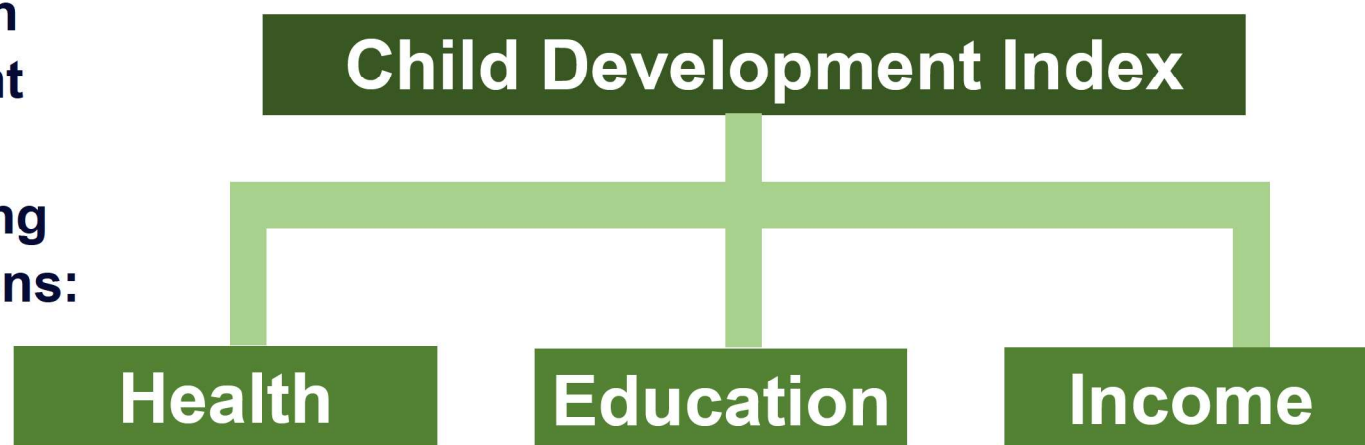
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I. Introduction

PREVIOUS EXERCISES ON CHILD DEVELOPMENT INDEX

- In 2006, a study on Child Development Index (CDI) was conducted focusing on three dimensions:





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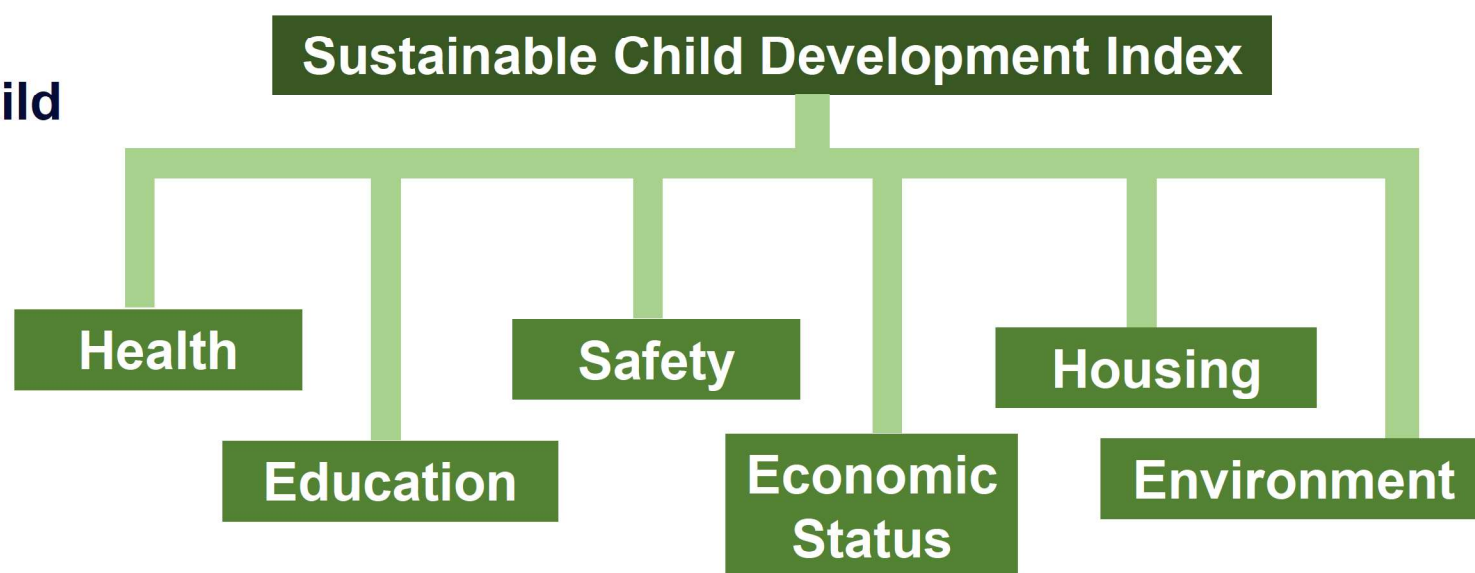
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I. Introduction

PREVIOUS EXERCISES ON CHILD DEVELOPMENT INDEX

- In 2019, the Sustainable Child Development Index (SCDI) covered six dimensions:





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I. Introduction

PREVIOUS EXERCISES ON CHILD DEVELOPMENT INDEX

	2006 CDI			2019 SCDI		
	2000	2003	2006	2012	2015	2018
Philippines	0.782	0.779	0.729	0.773	0.793	0.807



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I. Introduction

- 1 NO POVERTY**

Goal 1:
11 Indicators
- 2 ZERO HUNGER**

Goal 2:
4 Indicators
- 3 GOOD HEALTH AND WELL-BEING**

Goal 3:
13 Indicators
- 4 QUALITY EDUCATION**

Goal 4:
10 Indicators
- 5 GENDER EQUALITY**

Goal 5:
5 Indicators



- 10 REDUCED INEQUALITIES**

Goal 10:
1 Indicator
- 11 SUSTAINABLE CITIES AND COMMUNITIES**

Goal 11:
4 Indicators
- 13 CLIMATE ACTION**

Goal 13:
3 Indicators
- 17 PARTNERSHIPS FOR THE GOALS**

Goal 17:
2 Indicators



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II. Methodology - CDI Framework

	DIMENSION	INDICATOR	DATA SOURCE
CDI	Education	Currently Attending School (5 – 17 years old)	2019, 2020, 2021 July Labor Force Survey (LFS)
		Functionally Literate (10 – 17 years old)	2019 Functional Literacy, Education and Mass Media Survey (FLEMMS)
	Standard of Living (Families with children 0 - 17 years old)	Access to Internet	2019 Annual Poverty Indicators Survey (APIS) -LFS
		Secured Tenure Status	
		Have Strong Roof	2020 APIS-LFS
		Have Strong Walls	
		Access to Safe Drinking Water	2021 Family Income and Expenditure Survey (FIES)-LFS
		Access to Clean Sanitation Facility	
		Poverty Incidence	2018 FIES- LFS
	Health (Infants 0 – 1 year old)	Fully Immunized Child	Field Health Services Information System (FHSIS) from DOH

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II. Methodology

1 Normalizing Indicators

Positive Indicator: $X^* = \frac{X - X_{min}}{X_{max} - X_{min}}$

Negative Indicator: $X^* = \frac{X_{max} - X}{X_{max} - X_{min}}$

Where,

X^* = Normalized Indicator

X_{max} = Maximum Indicator

X_{min} = Minimum Indicator

2 Dimension Scores

$$CDI\ Dimension_j = \overline{indicator_{ij}} ; \begin{matrix} ith\ indicator \\ jth\ dimension \end{matrix}$$

3 Overall CDI

$$CDI = (I_{Educ} * I_{SL} * I_{HN})^{\frac{1}{3}}$$

Where,

I_{Educ} = Education Index

I_{SL} = Standard of Living Index

$I_{H\&N}$ = Health and Nutrition Index

The higher the CDI score, the better the child well-being.



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III. Results

Overall CDI

Year	CDI	
2019	0.826	
2020	0.808	↓
2021	0.831	↑



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CDI by Dimension: 2019, 2020, 2021

Index	2019	2020	2021
Overall	0.826	0.808	0.831
Education	0.958	0.950	0.926
Standard of Living	0.771	0.770	0.889
Health	0.764	0.721	0.696



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Education Indicators: 2019, 2020, 2021

Index	2019	2020	2021
Education Index	0.958	0.950	0.926
Currently Attending School	0.980	0.965	0.917
Functionally Literate	0.935	0.935	0.935



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Standard of Living Indicators: 2019, 2020, 2021

Index	2019	2020	2021
Standard of Living Index	0.771	0.770	0.889
Access to Internet	0.138	0.146	0.892
Secured Tenure Status	0.965	0.970	0.987
Have Strong Roof	0.936	0.960	0.968
Have Strong Walls	0.815	0.753	0.796
Access to Safe Drinking Water	0.968	0.973	0.978
Access to Clean Sanitation Facility	0.923	0.940	0.956
Poverty Incidence (Normalized)	0.650	0.650	0.650



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Education Index by Region: 2019, 2020, 2021

Region	2019	2020	2021
Philippines	0.958	0.950	0.926
National Capital Region (NCR)	0.961	0.952	0.928
Cordillera Administrative Region (CAR)	0.960	0.934	0.915
Region I (Ilocos Region)	0.964	0.932	0.955
Region II (Cagayan Valley)	0.967	0.926	0.932
Region III (Central Luzon)	0.956	0.957	0.927
Region IV-A (CALABARZON)	0.961	0.948	0.932
MIMAROPA	0.962	0.967	0.940
Region V (Bicol Region)	0.963	0.949	0.921
Region VI (Western Visayas)	0.962	0.955	0.928
Region VII (Central Visayas)	0.959	0.956	0.927
Region VIII (Eastern Visayas)	0.956	0.963	0.929
Region IX (Zamboanga Peninsula)	0.961	0.952	0.940
Region X (Northern Mindanao)	0.962	0.957	0.938
Region XI (Davao Region)	0.957	0.955	0.922
Region XII (SOCCSKSARGEN)	0.955	0.955	0.924
Region XIII (Caraga)	0.964	0.968	0.937
Autonomous Region of Muslim Mindanao (ARMM)	0.907	0.914	0.847



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Standard of Living Index by Region: 2019, 2020, 2021

Region	2019	2020	2021
Philippines	0.771	0.770	0.889
National Capital Region (NCR)	0.866	0.873	0.973
Cordillera Administrative Region (CAR)	0.815	0.821	0.919
Region I (Ilocos Region)	0.811	0.830	0.932
Region II (Cagayan Valley)	0.805	0.809	0.886
Region III (Central Luzon)	0.836	0.842	0.946
Region IV-A (CALABARZON)	0.852	0.847	0.958
MIMAROPA	0.719	0.727	0.828
Region V (Bicol Region)	0.700	0.705	0.826
Region VI (Western Visayas)	0.727	0.734	0.845
Region VII (Central Visayas)	0.740	0.734	0.853
Region VIII (Eastern Visayas)	0.711	0.706	0.792
Region IX (Zamboanga Peninsula)	0.673	0.648	0.721
Region X (Northern Mindanao)	0.742	0.727	0.800
Region XI (Davao Region)	0.731	0.741	0.823
Region XII (SOCCSKSARGEN)	0.704	0.712	0.790
Region XIII (Caraga)	0.717	0.678	0.783
Autonomous Region of Muslim Mindanao (ARMM)	0.557	0.521	0.601



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Health Index by Region: 2019, 2020, 2021

Region	2019	2020	2021
Philippines	0.764	0.721	0.696
National Capital Region (NCR)	1.000	0.656	0.658
Cordillera Administrative Region (CAR)	0.738	0.751	0.748
Region I (Ilocos Region)	0.739	0.848	0.856
Region II (Cagayan Valley)	0.854	0.814	0.813
Region III (Central Luzon)	0.826	0.872	0.729
Region IV-A (CALABARZON)	0.817	0.610	0.596
MIMAROPA	0.768	0.577	0.649
Region V (Bicol Region)	0.420	0.618	0.619
Region VI (Western Visayas)	0.767	0.786	0.727
Region VII (Central Visayas)	0.751	0.705	0.706
Region VIII (Eastern Visayas)	0.673	0.657	0.584
Region IX (Zamboanga Peninsula)	0.569	0.671	0.699
Region X (Northern Mindanao)	0.733	0.827	0.847
Region XI (Davao Region)	0.812	0.813	0.751
Region XII (SOCCSKSARGEN)	0.677	0.710	0.680
Region XIII (Caraga)	0.784	0.836	0.817
Autonomous Region of Muslim Mindanao (ARMM)	0.634	0.692	0.672



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Levels of Development by Region

Year	Low < 0.550		Medium (0.550 – 0.699)		High (0.700 – 0.799)		Very High > 0.800		Total
	N	%	N	%	N	%	N	%	
2019	0	0.0	2	11.8	3	17.6	12	70.6	17
2020	0	0.0	1	17.6	7	41.2	9	52.9	17
2021	0	0.0	1	70.6	5	29.4	11	64.7	17

Note: Levels of Development are based on HDI Classification with fixed cut-off points

IV. Limitations of the Study

- Indicators considered in each dimension were limited to those with updated data.
- The functional literacy used in education index used only one (1) data point.
- The poverty estimates used in the standard of living index was only available for 2018 since the 2021 poverty estimates among basic sectors will only be released by end of the year.

V. Conclusion

- Amidst the pandemic, the CDI declined from 0.826 in 2019 to 0.808 in 2020 but recovered to 0.831 in 2021
- Education and health index decreased from 2019 to 2021 while standard of living index increased.
- Among the regions, ARMM lagged in the standard of living and education index across the years.

VI. Ways Forward

- Explore possibility of considering other relevant health indicators from the Field Health Services Information System (FHSIS) of DOH.
- National Demographic and Health Survey (NDHS) of PSA and Expanded National Nutrition Survey (ENNS) from FNRI may also be considered when latest data becomes available under the health dimension.
- Update the standard of living component once the 2021 poverty statistics among children becomes available.
- Other dimensions may be considered to cover the other concerns of children such as social protection, leisure and culture, violence against children, among others.



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VII. References

- Ya-Ju Chang, Annekatrin Lehmann, Lisa Winter ID and Matthias Finkbeiner, “The Sustainable Child Development Index (SCDI) for Countries”. Accessed 28 September 2022
- UN Secretary-General, “Children and Armed Conflict,” S/2022/493, June 23, 2022, para. 291.
- Safe Schools Declaration, May 28, 2015, (Accessed 28 Sept 2022)
https://www.regjeringen.no/globalassets/departementene/ud/vedlegg/utvikling/safe_schools_declaration.pdf (accessed 28 Sept 2022)
- The Global Coalition to Protect Education from Attack, “Safe Schools Declaration Endorsements”, (accessed 28 Sept 2022)
- COVID-19 and Child Labour: A Time of Crisis, A Time to Act. UNICEF. International Labour Organization and United Nations Children’s Fund; 2020. Available from: <https://www.unicef.org/media/70261/file/COVID-19-and-Child-labour-2020.pdf>. (Accessed 28 Sept 2022)
- Burgess M, Sulaiman M, Arlini SM, Qaiser MH, Thiyagarajah S, Dulieu N, et al. The Hidden Impact of COVID-19 on Child Protection and Wellbeing. Save the Children; 2020. Available from: https://resourcecentre.savethechildren.net/node/18174/pdf/the_hidden_impact_of_covid-19_on_child_protection_and_wellbeing.pdf. (Accessed Sept 28, 2022)
- Ramos CM. Over 3,600 cases of violence against women, children reported since lockdown – Duterte report. Inquirer.net; June 8, 2020. Available from: <https://newsinfo.inquirer.net/1288275/over-3600-cases-of-violence-against-women-children-reported-since-lockdown-duterte-report>. Accessed Sept 28, 2022.
- Save the Children UK, “The Child Development Index”. (Accessed Sept 28, 2022)
- Save the Children UK, “The Child Development Index 2012”. (Accessed Sept 28, 2022)
- Human Rights Watch, <https://www.hrw.org/news/2022/08/19/philippines-submission-un-committee-rights-child>, August 19, 2022. (Accessed Sept 28, 2022)
- Health Promot Perspectives, “Mental health and well-being of children in the Philippine setting during the COVID-19 pandemic”, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8501475/>, 18 Aug 2021, (Accessed Sept 28, 2022)
- UNICEF Philippines, “A fresh start for Filipino children this 2021”, <https://www.unicef.org/philippines/stories/fresh-start-filipino-children-2021>. (Accessed Sept 28, 2022)
- Council for the Welfare of Children, “The minimum age of sexual consent in the Philippines is now raised from 12 to 16 years old under the newly enacted law, R.A. 116481”, <https://www.cwc.gov.ph/news/208-age-of-consent-pubmat.html>. (Accessed Sept 28, 2022)



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Thank you!



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