

SCHOOLING WITHOUT ABSORPTION: EDUCATION ATTAINMENT AND YOUTH UNEMPLOYMENT IN A TRANSFER ECONOMY

Satria Avianda Nurcahyo*

¹Fakultas Ekonomi Hukum dan Humaniora, Universitas Ngudi Waluyo, Kabupaten Semarang, Indonesia

*Corresponding author: satriaavianda@unw.ac.id

Article History

Received: 03-11-2025

Revised: 10-12-2025

Accepted: 05-01-2026

Keywords:

human development index;
component decomposition;
youth unemployment;
education attainment; labour
absorption

ABSTRACT

A composite development index can rise while the outcomes it is meant to summarise do not. This study decomposes the human development index of one province against the national figure and against seven comparator provinces, and reads the result against published labour force and youth development statistics. Four findings follow. The province's index of 76.23 exceeds the national 75.90, and the excess is produced entirely by the education components: expected years of schooling is 8.3 per cent above the national value and mean years of schooling 9.7 per cent above, ranking first and second among eight provinces. On the two components measuring what schooling is expected to produce, the province ranks seventh of eight: life expectancy 1.3 per cent below the national value and adjusted per-capita expenditure 12.6 per cent below. The labour market shows the same asymmetry at entry: open unemployment is 21.59 per cent among those aged fifteen to nineteen and 16.75 per cent among those aged twenty to twenty-four, against 5.64 per cent across all ages, so a cohort supplying 15.2 per cent of the labour force carries 48.6 per cent of the unemployed. And the deterioration is recent: the employment domain of the youth development index fell from 40.00 to 35.00 between two survey rounds while the education domain held at 76.67. A transfer-financed expansion of schooling raises the index without changing the structure that would absorb its graduates.

ABSTRAK

Indeks pembangunan gabungan dapat naik sementara hasil yang hendak dirangkumnya tidak. Kajian ini menguraikan indeks pembangunan manusia satu provinsi terhadap angka nasional dan terhadap tujuh provinsi pembandingan, lalu membacanya bersama statistik ketenagakerjaan dan indeks pembangunan pemuda yang diterbitkan resmi. Empat temuan mengikutinya. Indeks provinsi itu, 76,23, melampaui angka nasional 75,90, dan kelebihanannya sepenuhnya dihasilkan oleh komponen pendidikan: harapan lama sekolah 8,3 persen di atas nilai nasional dan rata-rata lama sekolah 9,7 persen di atasnya, menempati peringkat pertama dan kedua di antara delapan provinsi. Pada dua komponen yang mengukur apa yang seharusnya dihasilkan pendidikan, provinsi itu berada di peringkat tujuh dari delapan: umur harapan hidup 1,3 persen di bawah nilai nasional dan pengeluaran per kapita disesuaikan 12,6 persen di bawahnya. Pasar kerjanya memperlihatkan ketimpangan yang sama pada titik masuk: pengangguran terbuka 21,59 persen pada kelompok umur lima belas sampai sembilan belas tahun dan 16,75 persen pada dua puluh sampai dua puluh empat tahun, berhadapan dengan 5,64 persen pada seluruh usia, sehingga kelompok yang menyumbang 15,2 persen angkatan kerja menanggung 48,6 persen penganggur. Kemundurannya pun mutakhir dan terdokumentasi: domain lapangan kerja pada indeks pembangunan pemuda nasional turun dari 40,00 menjadi 35,00 di antara dua putaran survei sementara domain pendidikannya bertahan pada 76,67.

	Perluasan persekolahan yang dibiayai transfer menaikkan indeks tanpa mengubah struktur yang akan menyerap lulusannya. Kata kunci: indeks pembangunan manusia; penguraian komponen; pengangguran usia muda; capaian pendidikan; penyerapan tenaga kerja
--	--

I. INTRODUCTION

A composite index is a weighted average, and a weighted average can conceal the thing it is being used to report. If one component rises far enough, the index rises even when the others fall, and a jurisdiction can be described as developing while the outcomes that development is supposed to consist of are stationary or deteriorating.

The province examined here provides an unusually clean case. Its human development index stands at 76.23 against a national figure of 75.90, a position it reached from 73.29 five years earlier (Badan Pusat Statistik, 2025). Reported as a single number, that is a jurisdiction above the national average and improving. It is also a jurisdiction whose poverty rate is 12.34 per cent against a national 8.07 per cent, the highest of the ten provinces on its island, and whose child stunting prevalence is 28.6 per cent against a national 19.8 per cent.

Those figures are not contradictory. They are the arithmetic of a composite index in which one component carries the aggregate. Decomposition establishes which component and by how much, and it is the elementary diagnostic step that reporting the headline number omits.

The province has also spent heavily and specifically on the component that carries the index. Of a special autonomy transfer averaging Rp7.5 trillion annually, education absorbed 22.56 per cent — Rp1.69 trillion a year — second only to infrastructure at 45.34 per cent, against 13.52 per cent for health and 10.57 per cent for economic empowerment (Badan Akuntabilitas Keuangan Negara DPR RI, 2020). The expenditure and the index component that responded to it are therefore both observable, and so is what happened to the young people the expenditure educated.

Four questions organise the analysis. First, which components produce the province's index position? Second, where does the province rank on each component against comparable provinces? Third, what does the labour market do with the education the index records? Fourth, is the pattern improving or deteriorating?

2. LITERATURE REVIEW

Composite indices and what decomposition reveals

Alfons et al. (2024), examining government expenditure, the human development index and regional inequality, find the relationship conditional rather than automatic: expenditure raises the index under some configurations and not others. The finding matters here because it establishes that spending on the index is not the same as spending on development, and that the difference is empirically detectable.

The Indonesian convergence literature establishes the baseline expectation. Anwar (2018), applying convergence methods to human capital across Indonesian regions, finds convergence weak. Hendajany et al. (2017), testing beta and sigma convergence on district-level data, reach a similar conclusion. Amalia and Fitriyanto (2022) find regional disparity persisting in newly created autonomous regions. Siburian (2022), estimating on provincial data from 2001 to 2018 with attention to endogeneity, finds fiscal decentralisation contributing to poverty reduction with a non-linear relationship between the two. The collective implication is that a province rising in a composite ranking is not, on this evidence, expected to be converging on the components underneath it.

What transfer-financed spending has produced in this territory

Wijatmoko et al. (2023) report, for one district after more than thirteen years of the same transfer, 109,490 people below the poverty line and the fourth-highest unemployment rate in the province, with roughly half the allocation going to infrastructure against about seven per cent to economic empowerment. Ali (2019) finds annual increases in the fund unmatched by growth in the local economy or measurable welfare gains. Prabowo et al. (2020), evaluating a second arrangement, find limited effectiveness after two decades. Lele (2023) identifies delivery of promised outcomes as the variable separating arrangements that work from those that do not.

Aragon and Winkler (2023) and Corral et al. (2019) supply the resource-windfall analogue: effects dissipate once the windfall ends, and windfall spending raises local outcomes only where administrative capacity permits conversion. Lewis (2023) judges the wider statutory framework unlikely to improve spending efficiency or service delivery. None of these studies decomposes an index, which is the specific step this study contributes.

What schooling does and does not deliver in a weak labour market

Gyimah and Lussier (2021), predicting success and failure across 230 rural businesses with seventy-one per cent accuracy, identify staffing quality, capital, industry experience and marketing skills as the discriminating variables. Three of the four are capabilities acquired at work rather than in school, which locates the constraint on absorption in the demand side rather than in credentials. Del Olmo-García et al. (2023) situate rural entrepreneurial activity against depopulation and treat entrepreneurship as the policy response, which is the standard remedy proposed where absorption fails.

Kania et al. (2021) find village-owned enterprises constrained by a shortage of qualified human resources alongside implementation–regulation mismatches — a demand for skills coexisting with unemployment among the schooled, which is the configuration a mismatch account predicts. Anatan and Nur (2023) find micro, small and medium enterprises unevenly ready for digital transformation, which bears on whether the sector that would absorb young graduates can use what they have learned.

Chen et al. (2022), using 16,876 rural household observations matched to a digital financial inclusion index for 2012 to 2018, find inclusion lowering poverty vulnerability by 2.71 per cent with household entrepreneurship mediating 65.6 per cent of the effect and the largest effects among low-income households. Yu et al. (2024) find digital inclusive finance promoting rural entrepreneurship through credit constraints, information barriers and risk attitudes, with stronger effects for opportunity-driven than necessity-driven ventures. Batista and Vicente (2020) supply the caution that adopters of such instruments are more educated and more likely already banked, so the instrument reaches the schooled first — which is the group already counted in the index.

Where young workers actually go when formal employment does not absorb them

The platform work literature documents the destination. Hall and Krueger (2018) characterise the platform labour market as offering flexibility with earnings variance. Chen et al. (2019) value that flexibility and find it substantial for some workers. Cook et al. (2021) find a persistent gender earnings gap within platform work despite gender-blind allocation, arising from experience, preferences and driving speed. Duggan et al. (2020) analyse algorithmic management and its human resource implications; Anwar and Graham (2021) document freedom, flexibility, precarity and vulnerability operating simultaneously in African platform work.

Aloisi (2022) reviews platform work in Europe and the legal developments addressing classification. Behrendt et al. (2019) address social protection systems and digital platform workers, identifying the coverage gap that follows when work is not employment. Djunaidi et al. (2024) document daily income targets and passenger pressure producing safety risk among Indonesian platform drivers. This literature matters here because platform work is where a schooled but unabsorbed cohort predictably goes, and because it is not counted as unemployment.

The health component and what it measures

Life expectancy is the component on which the province ranks near the bottom of its comparison group, and the health financing literature identifies what does and does not move it. Wagstaff et al. (2018), across 553 household surveys in 133 countries, find catastrophic health spending correlating negatively with prepaid financing through social security and government agencies. Fattah et al. (2023) find catastrophic spending in Indonesia falling from 7.9 to 4.4 per cent of households at the ten per cent threshold between 2018 and 2019. Maulana et al. (2022) find insured households recording a 39 per cent reduction in out-of-pocket payments, with enrolment above 80 per cent alongside out-of-pocket payments still exceeding 30 per cent of current health expenditure.

Anindya et al. (2020) examine the national scheme's impact on inequality in service use. Khoirunurrofik and Raras (2021) find health service provision shaping the decision to enrol, which locates supply-side readiness upstream of coverage. Nurhasana et al. (2022) examine the sustainability of premium payment among self-enrolled members. Aikins et al. (2021) position a

national scheme for financial sustainability in a comparable setting. Collectively these establish that insurance coverage and health outcomes are separate achievements, which is the same distinction this study draws for education and absorption.

RESEARCH GAP

Two gaps follow. The first is that the province's index position has been reported without decomposition, so a jurisdiction whose aggregate exceeds the national average while two of its four components rank seventh of eight is described in public discussion in terms that its own components contradict. The decomposition uses only published figures and has not been performed.

The second is that the education expenditure recorded in the transfer's sectoral composition has not been read against the labour market outcomes of the cohort it educated. The two datasets are published by different agencies and have not been brought together, with the result that a programme absorbing Rpi.69 trillion a year is evaluated on the index component it raises rather than on the employment it was intended to produce.

3. METHOD

The study is a descriptive decomposition using published official statistics. It makes no causal claim; its purpose is to establish which components of a composite index account for the aggregate position and to read that against independently published labour market data.

Human development index values and component values for the province, seven comparator provinces and the national aggregate are taken from the national statistical agency's component tables for 2025, covering life expectancy from the 2020 long-form census, expected years of schooling, mean years of schooling and adjusted per-capita expenditure. Labour force and unemployment figures by age group are taken from the provincial statistical office's official statistics release. Youth development index domain scores are taken from the responsible ministry's index report. Sectoral composition of the special autonomy transfer is taken from a parliamentary budget accountability review.

Three procedures were applied. Each component was expressed as a percentage deviation from the national value, to make components with different units comparable. The province was ranked on each component among the eight provinces for which the same table publishes components. And age-specific unemployment rates were converted into shares of the total unemployed, to establish how much of the aggregate unemployment figure the youngest cohorts account for.

Three limitations apply. The comparator set is the eight provinces listed in the published component table, which is not a random sample and includes provinces at very different income levels. Component deviations expressed in percentage terms are sensitive to the units in which each component is measured and should be read as directional rather than as a decomposition of index

points. And unemployment statistics exclude discouraged workers and count informal and platform work as employment, so the absorption problem described here is understated rather than overstated.

4. RESULTS AND DISCUSSION

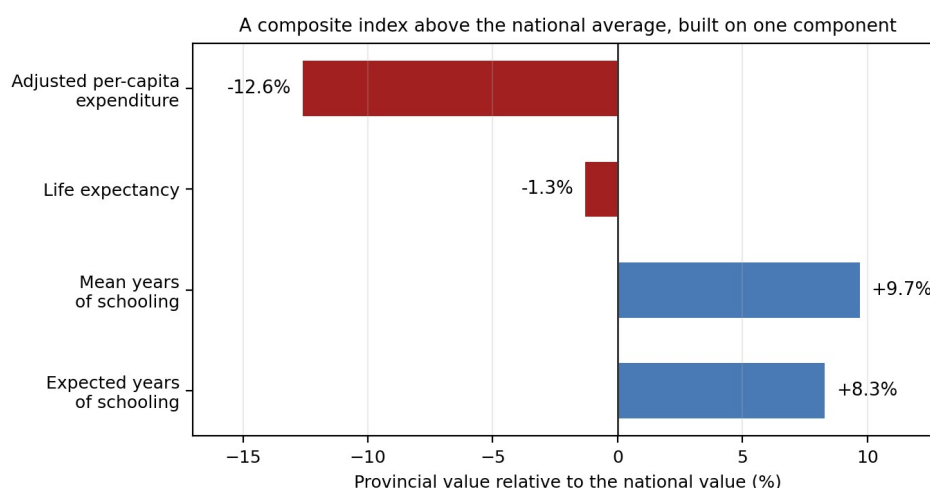


Figure 1. Provincial human development index components relative to national values

Finding one: one component carries the index

The province's index of 76.23 exceeds the national 75.90 by 0.33 points. The components tell a different story. Expected years of schooling is 14.40 against a national 13.30, a positive deviation of 8.3 per cent. Mean years of schooling is 9.95 against 9.07, a positive deviation of 9.7 per cent. Life expectancy is 73.48 years against 74.47, a negative deviation of 1.3 per cent. Adjusted per-capita expenditure is Rp11.191 million against Rp12.802 million, a negative deviation of 12.6 per cent.

Two components are substantially above the national value and two are below, with the largest single deviation in the entire set being the negative one on expenditure. Because the index is a geometric mean of dimension indices with education entering through two indicators, the education advantage enters twice and is sufficient to carry the aggregate above the national line despite an income shortfall of over twelve per cent.

Table 1. Human development index components, province against national and comparator provinces

Component	Province	National	Deviation	Rank of 8
Human development index	76.23	75.90	+0.33 points	4
Expected years of schooling	14.40	13.30	+8.3%	1
Mean years of schooling	9.95	9.07	+9.7%	2
Life expectancy (years)	73.48	74.47	-1.3%	7

Adjusted per-capita expenditure (Rp thousand)	11,191	12,802	-12.6%	7
---	--------	--------	--------	---

Note. Computed by the author from the national statistical agency's 2025 component table. Rank is among the eight provinces for which that table publishes components; the national row is excluded from the ranking.

Finding two: the province leads on inputs and trails on results

Among the eight provinces published in the same table, the province ranks first on expected years of schooling and second on mean years of schooling. It ranks seventh of eight on life expectancy and seventh of eight on adjusted per-capita expenditure. Only one province in the comparison group performs worse on those two, and that province ranks last on the composite index by more than six points.

The pattern is internally consistent and unusual. Expected years of schooling measures how long a child entering school today can expect to remain in education; mean years of schooling measures how long adults actually stayed. Both are inputs to human capital. Life expectancy and per-capita expenditure are outcomes that human capital is expected to produce. A jurisdiction ranked first and second on the inputs and seventh on both outcomes is not converting.

This is the province-level counterpart of what Alfons et al. (2024) find in general terms — that the relationship between expenditure, the index and inequality is conditional — and of what Anwar (2018) and Hendajany et al. (2017) find for convergence: the input measures move without dragging the outcome measures behind them.

Finding three: the labour market rejects the cohort at the point of entry

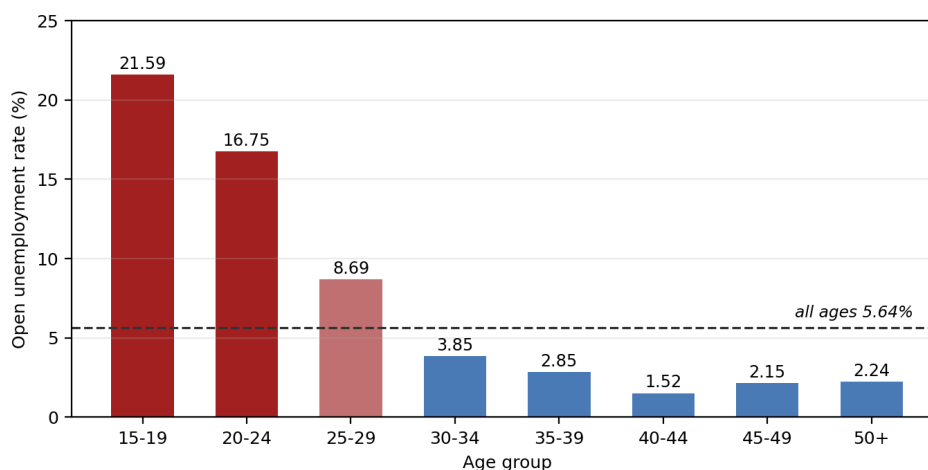


Figure 2. Open unemployment rate by age group against the all-ages rate

Open unemployment across all ages is 5.64 per cent, which is unremarkable. Disaggregated by age it is 21.59 per cent for those aged fifteen to nineteen, 16.75 per cent for those aged twenty to twenty-four, 8.69 per cent for those aged twenty-five to twenty-nine, and at or below 3.85 per cent for every

cohort aged thirty and above. The youngest cohort's rate is 3.83 times the all-ages rate and the second youngest cohort's is 2.97 times.

Expressed as shares, the arithmetic is starker. Those aged fifteen to twenty-four supply 413,259 people to a labour force of 2,714,518 — 15.2 per cent. They account for 74,520 of 153,189 unemployed people — 48.6 per cent. Their own unemployment rate is 18.03 per cent. Nearly half of the province's unemployment is concentrated in a cohort supplying under a sixth of its labour supply.

The distribution across the older cohorts establishes that this is an entry problem rather than a general labour demand problem. Unemployment falls to 3.85 per cent by age thirty and to 1.52 per cent by the early forties. Those who enter employment remain in it. What the labour market does not do is absorb new entrants, and new entrants are precisely the cohort the education expenditure produced.

The measured figure understates the problem for the reason the platform work literature identifies. Statistical definitions count platform and informal work as employment, and Hall and Krueger (2018), Chen et al. (2019), Anwar and Graham (2021) and Djunaidi et al. (2024) document that this is where unabsorbed young workers go — into arrangements that Behrendt et al. (2019) show fall outside social protection and that Aloisi (2022) shows regulators are still attempting to classify. A young person driving for a platform is not counted in the 18.03 per cent.

Finding four: the employment domain is deteriorating while the education domain holds

The youth development index published by the responsible ministry disaggregates into five domains, and the province's movement between survey rounds is diagnostic. The education domain stood at 76.67 in the earlier round against a national 70.00, and held at 76.67 in the later round. The employment and opportunity domain stood at 40.00 against a national 45.00, and fell to 35.00. The participation and leadership domain stood at 53.33 against a national 43.33, and fell to 46.67. Health and wellbeing rose from 65.00 to 75.00. The overall index rose from 57.67 to 58.00.

An overall index rising by 0.33 points while its employment domain falls by five points is the same arithmetic as the human development index, one level down and over a shorter interval. In the national index the employment domain is already the second lowest of five at 45.00, with participation lowest at 43.00 and education and health highest at 70.00 each; the province's position is a sharper version of a national pattern rather than a local anomaly.

Table 2. Youth development index domains, province across two survey rounds

Domain	Province, earlier round	National, earlier round	Province, later round	Change
Education	76.67	70.00	76.67	0.00
Health and wellbeing	65.00	65.00	75.00	+10.00
Gender and non-discrimination	53.33	53.33	56.67	+3.34

Participation and leadership	53.33	43.33	46.67	-6.66
Employment and opportunity	40.00	45.00	35.00	-5.00
Overall index	57.67	55.33	58.00	+0.33

Note. Compiled by the author from the responsible ministry's youth development index report. The overall index rises while the employment domain falls, reproducing at cohort level the composition effect identified in Table 1.

What the pattern implies

Three implications follow. The first concerns measurement. A jurisdiction reporting its composite index against the national average is reporting a number that its own component table contradicts on two of four dimensions. Publishing the components alongside the aggregate is costless, since the agency already computes them, and it would prevent the specific error of treating an education-driven index position as evidence of general development.

The second concerns expenditure allocation. Education absorbed 22.56 per cent of the transfer against 10.57 per cent for economic empowerment (Badan Akuntabilitas Keuangan Negara DPR RI, 2020). On the evidence assembled here, the first expenditure raised the index component it targets and the second was the one addressing the constraint that binds. Gyimah and Lussier (2021) locate the determinants of enterprise survival in staffing quality, capital, industry experience and marketing capability; Kania et al. (2021) find village enterprises constrained by a shortage of qualified human resources despite graduate unemployment. Both point to the same conclusion: the missing input is workplace capability and absorptive demand, neither of which additional years of schooling supplies.

The third concerns sequence, and it is the one that matters most given the fiscal timetable. The transfer that financed the education expansion is in scheduled decline. A cohort educated on a diminishing transfer, entering a labour market that already rejects 18.03 per cent of its age group at entry, will face that market with less public expenditure behind it, not more. Chen et al. (2022) and Yu et al. (2024) demonstrate that household-facing financial instruments raise entrepreneurship and reduce poverty vulnerability with the largest effects among low-income households — but Batista and Vicente (2020) show adopters are the already-educated and already-banked, which in this province means the instrument would reach exactly the cohort under discussion. That is an argument for deploying it, and a reason not to expect it to reach anyone else.

A final observation concerns the health component. Life expectancy ranks seventh of eight and stands 1.3 per cent below the national value, and the health financing literature is clear that coverage and outcome are separable. Maulana et al. (2022) find enrolment above 80 per cent nationally alongside out-of-pocket payments exceeding 30 per cent of health expenditure; Khoirunurrofik and Raras (2021) find service provision determining enrolment rather than the reverse; Nurhasana et al. (2022) find contribution compliance the structural weakness. The province's health domain in the youth index rose ten points between rounds, which is the one

unambiguously positive movement in this analysis and deserves to be understood before it is assumed to continue.

Limitations

Four limits bound the findings. The comparator set is the eight provinces published in the component table and is not a random sample. Percentage deviations across components with different units indicate direction and relative magnitude rather than contributions to index points. Unemployment statistics count informal and platform work as employment, so the absorption problem is understated. And the study is descriptive: it establishes that education inputs rose while absorption outcomes did not, and does not establish that the first failed to cause the second, which would require a design this data cannot support.

5. CONCLUSION

A province reports a human development index above the national average. Decomposed, that position rests entirely on two education components on which it ranks first and second among eight provinces, while it ranks seventh of eight on life expectancy and seventh of eight on per-capita expenditure — the latter by 12.6 per cent, the largest deviation anywhere in the set.

The labour market shows the same shape. Unemployment is 5.64 per cent overall and 18.03 per cent among those aged fifteen to twenty-four, a cohort supplying 15.2 per cent of the labour force and carrying 48.6 per cent of the unemployment. It falls to 3.85 per cent by age thirty, which identifies the problem as entry rather than demand in general. And the employment domain of the youth development index fell five points between survey rounds while the education domain held exactly constant.

The province has spent Rp1.69 trillion a year on the component that carries its index. That expenditure worked, in the narrow sense that the component it targets is the province's strongest. What it did not do was change the structure that would employ the people it educated, and the transfer financing it is now two budget years from expiry. Reporting the index without its components has allowed a schooling achievement to stand in for a development outcome it has not produced.

ACKNOWLEDGEMENTS

The authors thank the editorial team of Research Center Progresif for their assistance.

DECLARATIONS

Author contributions (CRediT)

Satria Avianda Nurcahyo: conceptualisation; methodology; formal analysis; writing - original draft; writing - review and editing.

Conflict of interest

The authors declare that they have no competing interests.

Data availability

All data supporting the findings of this study are available within the article and from the publicly accessible sources cited therein.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Declaration on the use of artificial intelligence

In accordance with COPE, ICMJE and WAME positions, and with the RCP AI Use Declaration requirement, the authors disclose that generative artificial intelligence tools were used in preparing this manuscript, specifically to assist with literature identification, synthesis of the reviewed sources, and language editing of the draft. Artificial intelligence was not used to generate data, results or citations. Every reference in this article was verified by the authors against the publisher's own record, a digital object identifier record or an indexing database record before inclusion, and sources whose bibliographic details or indexing status could not be confirmed were excluded. No artificial intelligence tool is listed as an author. The authors take full responsibility for the accuracy, integrity and originality of the entire content of this article.

REFERENCES

- Aikins, M., Tabong, P. T.-N., Salari, P., Tediosi, F., Asenso-Boadi, F. M., & Akweongo, P. (2021). Positioning the National Health Insurance for financial sustainability and Universal Health Coverage in Ghana: A qualitative study among key stakeholders. *PLOS ONE*, 16(6), e0253109. <https://doi.org/10.1371/journal.pone.0253109>
- Alfons, M. E., Nursini, & Abd Rahman R. (2024). Government expenditure, human development index and regional inequality in Indonesia. *Journal of Ecohumanism*, 3(7), 4810–4820. <https://doi.org/10.62754/joe.v3i7.4589>
- Ali, S. Z. (2019). The management model of Aceh's special autonomy fund. *Jurnal Bina Praja*, 11(2), 159–170. <https://doi.org/10.21787/jbp.11.2019.159-170>
- Aloisi, A. (2022). Platform work in Europe: Lessons learned, legal developments and challenges ahead. *European Labour Law Journal*, 13(1), 4–29. <https://doi.org/10.1177/20319525211062557>
- Amalia, F., & Fitriyanto, A. (2022). Regional disparity and social-economic convergence in new autonomous regions in Banten Province. *The Indonesian Journal of Planning and Development*, 7(2), 60–68. <https://doi.org/10.14710/ijpd.7.2.60-68>

- Anatan, L., & Nur. (2023). Micro, small, and medium enterprises' readiness for digital transformation in Indonesia. *Economies*, 11(6), 156. <https://doi.org/10.3390/economies11060156>
- Anindya, K., Lee, J. T., McPake, B., Wilopo, S. A., Millett, C., & Carvalho, N. (2020). Impact of Indonesia's national health insurance scheme on inequality in access to maternal health services: A propensity score matched analysis. *Journal of Global Health*, 10(1), 010429. <https://doi.org/10.7189/jogh.10.010429>
- Anwar, A. (2018). Empirical analysis of human capital convergence in Indonesia. *JEJAK: Jurnal Ekonomi dan Kebijakan*, 11(2), 306–322. <https://doi.org/10.15294/jejak.v11i2.16053>
- Anwar, M. A., & Graham, M. (2021). Between a rock and a hard place: Freedom, flexibility, precarity and vulnerability in the gig economy in Africa. *Competition & Change*, 25(2), 237–258. <https://doi.org/10.1177/1024529420914473>
- Aragon, F. M., & Winkler, H. (2023). The long-term impact of a resource-based fiscal windfall: Evidence from the Peruvian canon. *Resources Policy*, 87, 104305. <https://doi.org/10.1016/j.resourpol.2023.104305>
- Badan Akuntabilitas Keuangan Negara DPR RI. (2020). Penelaahan atas Dana Otonomi Khusus Provinsi Aceh. Sekretariat Jenderal DPR RI.
- Badan Pusat Statistik. (2025). Indeks pembangunan manusia menurut provinsi dan komponennya, 2025. Badan Pusat Statistik.
- Batista, C., & Vicente, P. C. (2020). Adopting mobile money: Evidence from an experiment in rural Africa. *AEA Papers and Proceedings*, 110, 594–598. <https://doi.org/10.1257/pandp.20201086>
- Behrendt, C., Nguyen, Q. A., & Rani, U. (2019). Social protection systems and the future of work: Ensuring social security for digital platform workers. *International Social Security Review*, 72(3), 17–41. <https://doi.org/10.1111/issr.12212>
- Chen, M. K., Chevalier, J. A., Rossi, P. E., & Oehlsen, E. (2019). The value of flexible work: Evidence from Uber drivers. *Journal of Political Economy*, 127(6), 2735–2794. <https://doi.org/10.1086/702171>
- Chen, S., Liang, M., & Yang, W. (2022). Does digital financial inclusion reduce China's rural household vulnerability to poverty: An empirical analysis from the perspective of household entrepreneurship. *SAGE Open*, 12(2). <https://doi.org/10.1177/21582440221102423>
- Cook, C., Diamond, R., Hall, J. V., List, J. A., & Oyer, P. (2021). The gender earnings gap in the gig economy: Evidence from over a million rideshare drivers. *The Review of Economic Studies*, 88(5), 2210–2238. <https://doi.org/10.1093/restud/rdaa081>

- Corral, L., Henderson, H., & Miranda, J. J. (2019). The fiscal impact of natural resource windfalls: Evidence from a Peruvian natural experiment. *Land Economics*, 95(4), 577-598. <https://doi.org/10.3368/le.95.4.577>
- Del Olmo-Garcia, F., Dominguez-Fabian, I., Crecente-Romero, F. J., & del Val-Nunez, M. T. (2023). Determinant factors for the development of rural entrepreneurship. *Technological Forecasting and Social Change*, 191, 122487. <https://doi.org/10.1016/j.techfore.2023.122487>
- Djunaidi, Z., Khaliwa, A. M., Hafia, A., & Putri, N. (2024). Daily income targets and passenger pressure on safety risky riding behavior among online motorcycle taxi riders in Jakarta, Indonesia. *Kesmas: Jurnal Kesehatan Masyarakat Nasional*, 19(1). <https://doi.org/10.21109/kesmas.v19i1.7796>
- Duggan, J., Sherman, U., Carbery, R., & McDonnell, A. (2020). Algorithmic management and app-work in the gig economy: A research agenda for employment relations and HRM. *Human Resource Management Journal*, 30(1), 114-132. <https://doi.org/10.1111/1748-8583.12258>
- Fattah, R. A., Cheng, Q., Thabrany, H., Susilo, D., Satrya, A., Haemmerli, M., Kosen, S., Novitasari, D., Puteri, G. C., Adawiyah, E., Hayen, A., Gilson, L., Mills, A., Tangcharoensathien, V., Jan, S., Asante, A., & Wiseman, V. (2023). Incidence of catastrophic health spending in Indonesia: Insights from a household panel study 2018-2019. *International Journal for Equity in Health*, 22(1), 185. <https://doi.org/10.1186/s12939-023-01980-w>
- Gyimah, P., & Lussier, R. N. (2021). Rural entrepreneurship success factors: An empirical investigation in an emerging market. *Journal of Small Business Strategy*, 31(4), 5-19. <https://doi.org/10.53703/001c.29470>
- Hall, J. V., & Krueger, A. B. (2018). An analysis of the labor market for Uber's driver-partners in the United States. *ILR Review*, 71(3), 705-732. <https://doi.org/10.1177/0019793917717222>
- Hendajany, N., Saepudin, D., & Suaesih, A. (2017). Beta convergence and sigma convergence: Evidence from Indonesian district-level data. *Jurnal Ekonomi Kuantitatif Terapan*, 10(1), 19-25. <https://doi.org/10.24843/JEKT.2017.v10.i01.p03>
- Kania, I., Anggadwita, G., & Alamanda, D. T. (2021). A new approach to stimulate rural entrepreneurship through village-owned enterprises in Indonesia. *Journal of Enterprising Communities: People and Places in the Global Economy*, 15(3), 432-450. <https://doi.org/10.1108/JEC-07-2020-0137>
- Khoirunurrofik, K., & Raras, G. (2021). Health services provision and decision to buy Jaminan Kesehatan Nasional (JKN) in Indonesia. *Health Policy Open*, 2, 100050.

- Lele, G. (2023). Asymmetric decentralization, accommodation and separatist conflict: Lessons from Aceh and Papua, Indonesia. *Territory, Politics, Governance*, 11(5), 972-990. <https://doi.org/10.1080/21622671.2021.1875036>
- Lewis, B. D. (2023). Indonesia's new fiscal decentralisation law: A critical assessment. *Bulletin of Indonesian Economic Studies*, 59, 1-28. <https://doi.org/10.1080/00074918.2023.2180838>
- Maulana, N., Soewondo, P., Adani, N., Limasalle, P., & Pattnaik, A. (2022). How Jaminan Kesehatan Nasional (JKN) coverage influences out-of-pocket (OOP) payments by vulnerable populations in Indonesia. *PLOS Global Public Health*, 2(7), e0000203. <https://doi.org/10.1371/journal.pgph.0000203>
- Nurhasana, R., Hidayat, B., Pujiyanto, Ratih, S. P., Hartono, R. K., & Dartanto, T. (2022). The sustainability of premium payment of national health insurance's self-enrolled members in Jakarta Greater Area. *Journal of Public Health Research*, 11(1). <https://doi.org/10.4081/jphr.2021.2392>
- Prabowo, P. A., Supriyono, B., Noor, I., & Muluk, M. K. (2020). Special autonomy policy evaluation to improve community welfare in Papua province Indonesia. *International Journal of Excellence in Government*, 2(1), 24-40. <https://doi.org/10.1108/IJEG-06-2019-0011>
- Siburian, M. E. (2022). The link between fiscal decentralization and poverty - Evidence from Indonesia. *Journal of Asian Economics*, 81, 101493. <https://doi.org/10.1016/j.asieco.2022.101493>
- Wagstaff, A., Flores, G., Hsu, J., Smitz, M.-F., Chepynoga, K., Buisman, L. R., van Wilgenburg, K., & Eozenou, P. (2018). Progress on catastrophic health spending in 133 countries: A retrospective observational study. *The Lancet Global Health*, 6(2), e169-e179. [https://doi.org/10.1016/S2214-109X\(17\)30429-1](https://doi.org/10.1016/S2214-109X(17)30429-1)
- Wijatmoko, E., Armawi, A., & Fathani, T. F. (2023). Uncovering the challenges of sustainable development in North Aceh: A policy analysis of special transfer funds. *Sustainability*, 15(11), 8585. <https://doi.org/10.3390/su15118585>