

**DEPENDENCY RATIO EFFECT ON HUMAN DEVELOPMENT INDEX
IN INDONESIA**



THESIS

**SUBMITTED TO THE FACULTY OF ISLAMIC ECONOMICS AND
BUSINESS OF THE STATE ISLAMIC UNIVERSITY OF SUNAN
KALIJAGA YOGYAKARTA AS ONE OF THE REQUIREMENTS FOR
OBTAINING A BACHELOR'S DEGREE IN SHARIA ECONOMICS**

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FACULTY ISLAMIC ECONOMICS AND BUSINESS
STATE ISLAMIC UNIVERSITY OF SUNAN KALIJAGA
YOGYAKARTA**

2025

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STATE ISLAMIC UNIVERSITY OF SUNAN KALIJAGA
YOGYAKARTA**

2025

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Assalamualaikum Wr. Wb.

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Thesis Title : Dependency Ratio Effect on Human Development Index in Indonesia

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We hereby request that the thesis be examined at the earliest opportunity.

We would like to express our thanks for this.

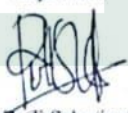
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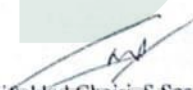
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I declare truthfully, that my thesis entitled "**Dependency Ratio Effect on Human Development Index in Indonesia**" is a personal work and as far the author's knowledge does not contain material published or written by others, except for certain parts that the author takes as a reference.

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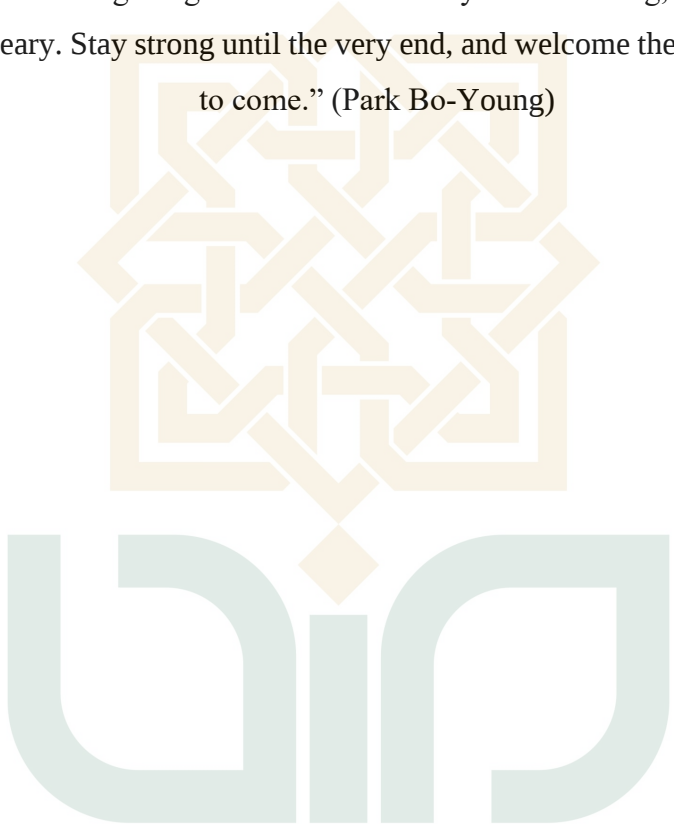
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MOTTO

혹시 너무 어둡고 긴 밤을 보내고 계신 분이 계시다면, 지치지 말고 끝까지
잘 버텨내서 아침을 맞이하셨으면 좋겠습니다.

“If you are enduring a night that feels endlessly dark and long, I pray you don’t
grow too weary. Stay strong until the very end, and welcome the dawn that is sure
to come.” (Park Bo-Young)



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Bismillahirrahmanirrahim.

This modest piece of work is dedicated to those who have been my reason to keep moving forward and to complete this journey:

1. The two most extraordinary people in my life, my beloved parents (Dad Machrom and Mom Titien), who have always sent up good prayers that served as the strongest fuel throughout the process of writing this thesis. Thank you for your endless love and patience, which have always been the home I can return to. Thank you for guiding me to this point, I dedicate this simple work and my degree to you both, Dad and Mom.
2. To myself, this thesis is proudly dedicated to you. Thank you for choosing to persevere. Thank you for never giving up, for every sleepless night, and for your tenacity in overcoming every obstacle. Thank you for trying to keep your sanity, for striving to remain calm even when a storm was raging within, and for forgiving all the exhaustion along the way. Remember that every tear that fell has now grown into the sweet fruit you shall harvest, which will serve as a valuable companion in your future. Let us continue this journey and strive for the best in our next adventure, as you have navigated this so remarkably. You did it!
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7. All the fellow thesis warriors, thank you for deciding to persist and for daring to stay awake to face the morning, even on days when it felt so difficult. Let us keep moving forward.



LITERACY GUIDELINES

In preparing this thesis, the transliteration of Arabic words follows the guidelines set forth in the Joint Decree of the Minister of Religious Affairs and the Minister of Education and Culture of the Republic of Indonesia No. 158 of 1987 and No. 0543b/U/1987.

A. Single Consonant

Arabic script	Name	Latin script	Explanation
ا	alif	not represented	not represented
ب	bā'	b	be
ت	tā'	t	te
ث	ṣā'	ṣ	es (with a dot above)
ج	jīm	j	je
ح	ḥā'	ḥ	ha (with a dot below)
خ	khā'	kh	ka and ha
د	dāl	d	de
ذ	ẓāl	ẓ	zet (with a dot above)
ر	rā'	r	er
ز	zāi	z	zet
س	sīn	s	es
ش	syīn	sy	es and ye
ص	ṣād	ṣ	es (with a dot below)
ض	ḍād	ḍ	de (with a dot below)
ط	ṭā'	ṭ	te (with a dot below)
ظ	ẓā'	ẓ	zet (with a dot below)

ع	‘ain	‘	inverted comma above
غ	gain	g	ge
ف	fā‘	f	ef
ق	qāf	q	qi
ك	kāf	k	ka
ل	lām	l	el
م	mīm	m	em
ن	nūn	n	en
و	wāwu	w	w
هـ	hā‘	h	ha
ء	hamza h	,	apostrof
ي	yā‘	Y	ye

B. Double Consonant due to Syaddah are Written as Double Letters

ممّعدّة	written	<i>muta’addidah</i>
عدّة	written	<i>‘iddah</i>

C. *Tā’ Marbutāh* at the End of a Sentence

- a. Written with *h* if pronounced *Sukun*.

حكمة	written	<i>hikmah</i>
جزية	written	<i>jizyah</i>

- b. When followed by the definite article ‘*al*’ and the two words are read separately, it is written with an *h*.

كرامة الولىاء	written	<i>karāmah al-auliya'</i>
---------------	---------	---------------------------

- c. When *Tā'marbutāh* is followed by *fathāh*, *kasrah*, or *dāmāh*, it is written as *ny t* or *h*.

زكاة الفطرة	written	<i>zakatā al-fitrāh</i>
-------------	---------	-------------------------

D. Short Vowels and Their Application

Every *tā' marbutāh* letter is transliterated into the letter 'h', both when it is at the end of a single word and when it is in the middle of a series of words (for example, when followed by the article 'al-'). However, this rule does not apply to words borrowed from Arabic that have become part of the Indonesian vocabulary, such as *shalat*, *Zakah*, and so on, unless the original spelling is explicitly desired.

اَ	fathah	written	a
اِ	kasrah	written	i
اُ	ḍammah	written	u
فعل	fathah	written	fa'ala
ذكر	kasrah	written	zūkira
يذهب	ḍammah	written	yazhabu

E. Long Vowels

1	fathah + alif جاهلية	written	ā <i>jāhiliyah</i>
2	fathah + yā'mati تنسى	written	ā <i>tansā</i>

3	kasrah + yā'mati كريم	written	<i>i</i> <i>karim</i>
4	ḍammah + wāwu mati فروض	written	<i>ū</i> <i>furūd</i>

F. Double Vowels

1	fathah + yā'mati بينكم	written	<i>ai</i> <i>bainakum</i>
2	fathah + wāwu mati قول	written	<i>au</i> <i>qaul</i>

G. Consecutive Short Vowels in a Single Word are Separated by an Apostrophe

أَنْتُمْ	written	<i>a'antum</i>
أَعَدَّتْ	written	<i>u'iddat</i>
لَنْ تُكْرِمَ	written	<i>la'in</i> <i>syakartum</i>

H. The Definite Article Alif + Lam

- a. If followed by a *Qamariyyah* letter, it can be written using the initial letter “al”.

الْقُرْآن	written	<i>al-Qur'ān</i>
الْقِيَاس	written	<i>al-Qiyās</i>

- b. If followed by a *Syamsiyyah* letter, it is written according to the first letter of that *Syamsiyyah*.

السَّمَاءُ	written	<i>al-Samā'</i>
الشَّمْسُ	written	<i>al-Syams</i>

I. Writing Words in Sentences

ذَوِي الْفُرُوضِ	written	<i>zawī al-furūd</i>
أَهْلُ السُّنَّةِ	written	<i>ahl as-sunnah</i>

PREFACE

All praise be to Allah, the Most Gracious, the Most Merciful. The grateful author offers thanks to Allah SWT for His abundant mercy and guidance, which enabled the successful completion of this thesis entitled **“Dependency Ratio Effect on Human Development Index in Indonesia”**. May peace and blessings be upon our Prophet Muhammad SAW, his family, companions, and all his followers until the end of time.

Thanks to the support of various parties, this thesis has finally been completed successfully. Therefore, on this occasion, the author would like to express her deepest gratitude to:

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3. Dr. Miftakhul Choiri, S.Sos.I., M.S.I., as Head of the Sharia Economics Study Program, Faculty of Islamic Economics and Business., Sunan Kalijaga Yogyakarta State Islamic University.
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Yogyakarta, August 5th, 2026

Author,



(Annasfitria Putri Hadi)



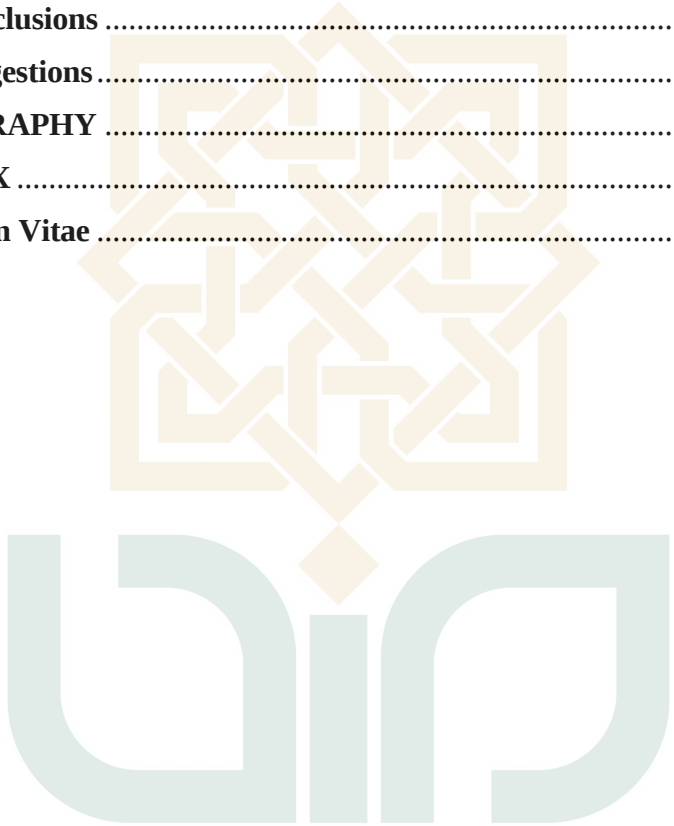
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ABSTRAK

Pembangunan manusia di Indonesia menunjukkan tren peningkatan, namun disparitas antarwilayah masih menjadi tantangan utama. Penelitian ini menganalisis pengaruh Rasio Ketergantungan, Kemiskinan, Pertumbuhan Ekonomi, dan PDRB per kapita terhadap Indeks Pembangunan Manusia. Menggunakan data panel 33 provinsi selama periode 2010-2024 melalui metode Heteroskedasticity and Autocorrelation Consistent (HAC), hasil estimasi membuktikan bahwa variabel independent berpengaruh negatif dan signifikan terhadap IPM di Indonesia. Temuan ini mengonfirmasi bahwa tingginya beban demografis serta persoalan kemiskinan dan ketimpangan distribusi hasil pembangunan merupakan tantangan yang krusial, di mana kondisi tersebut belum mampu menjadi fondasi yang efektif dalam akselerasi kualitas pembangunan manusia.

Kata kunci: Dependency Ratio, Tingkat Kemiskinan, Pertumbuhan Ekonomi Indeks Pembangunan Manusia, PDRB per kapita.



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ABSTRACT

Human development in Indonesia continues to rise, yet regional disparities remain a critical challenge. This study investigates the impact of the Dependency Ratio, Poverty Rate, Economic Growth, and GRDP per capita on the Human Development Index. Utilising panel data across 33 provinces from 2010-2024 via Heteroskedasticity and Autocorrelation Consistent (HAC) approach, the estimation results reveal that independent variables exert a negative and significant effect on HDI. These findings confirm that the high demographic burden, together with issues of poverty and the unequal distribution of the fruits of development, represent crucial challenges; these conditions have not yet served as an effective foundation for accelerating the quality of human development.

Keywords: Dependency Ratio, Poverty Rate, Economic Growth, Human Development Index, GRDP per capita.



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CHAPTER I

INTRODUCTION

A. Background

Development is essentially a systematic effort undertaken by every country to improve the welfare and quality of life of its people in a sustainable manner. The welfare of the people is the main objective of governance because it reflects the success of the state in meeting basic needs, expanding life opportunities, and ensuring social and economic sustainability (Todaro & Smith, 2011). In the modern context, development is no longer understood as merely increasing economic output, but rather as a multidimensional process that simultaneously encompasses economic, social and demographic aspects (Zhu et al., 2021). Therefore, development policies are directed towards improving the overall quality of life, rather than merely pursuing economic growth (Bappenas, 2019).

Prior to the 1960s, the development paradigm was dominated by a conventional economic approach that placed Gross Domestic Product (GDP) as the main indicator of development success. This approach assumed that economic growth would automatically improve the welfare of society at large (Allan, 2019). However, the experience of many developing countries shows that high economic growth is not always followed by improvements in quality of life, poverty reduction, or equitable distribution of welfare (Zarina et al., 2021). Criticism of this approach led to the emergence of a more comprehensive human development paradigm, which emphasises the importance of quality of life as the ultimate goal of development (Purba et al., 2021). This paradigm is

influenced by Amartya Sen's thinking, which emphasises that development should be understood as a process of expanding human capabilities and life choices, rather than merely the accumulation of income (Sen, 1999).

This paradigm shift prompted the United Nations Development Programme (UNDP) to introduce the Human Development Index (HDI) in 1990 through the Human Development Report. The HDI was designed to measure human development achievements more comprehensively through three main dimensions, that are health, education, and decent living standards (Uddin, 2023). Since its introduction, the HDI has become one of the main indicators for evaluating development success in various countries, including Indonesia. The use of the HDI enables a more holistic analysis of development as it captures non-economic dimensions that have been neglected in conventional growth indicators (Astusi et al., 2025).

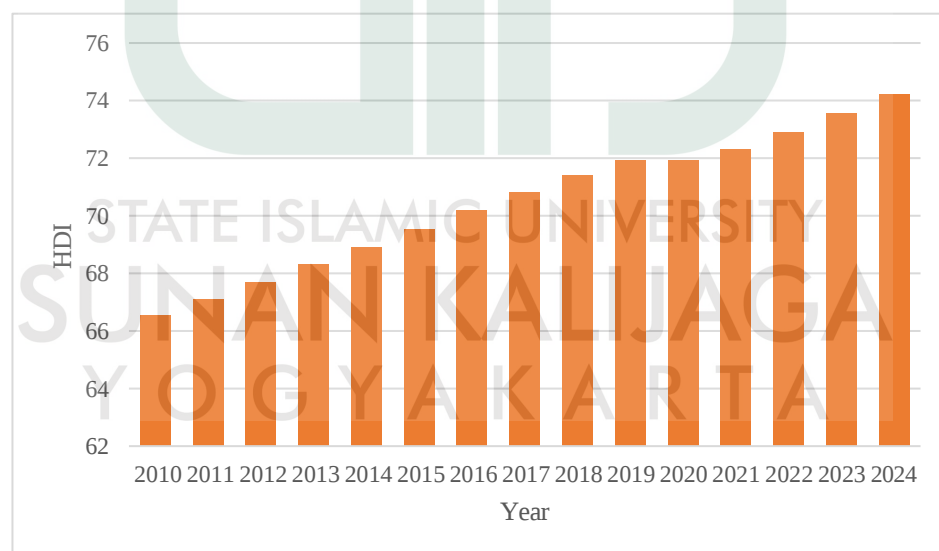


Figure 1.1 Human Development Index (HDI) of Indonesia

Source: Central Bureau of Statistics (data processed)

Based on data from the Central Bureau of Statistics (BPS), Indonesia's HDI shows a relatively consistent upward trend during the 2010-2024 period. The values of HDI increased from 66.53 on 2010 become 74.20 on 2024, with an average increase of around 0.5-0.9 points per year. This reflecting gradual improvements in the dimensions of health, education and living standards (BPS, 2025). This improvement places Indonesia in the High Human Development Country category according to the UNDP classification (UNDP, 2024), that is around 70-80. This increase in HDI was supported by an increase in life expectancy, an increase in mean years of schooling, and an increase in per capita income or expenditure. Growth in per capita income also expanded public access to quality education and health services, thereby strengthening overall human development achievements (Yunus, 2023).

Although the national Human Development Index shows a positive trend, human development achievements in Indonesia still face challenges in the form of inter-provincial. Differences in development levels between provinces remain significant, especially between regions with high economic activity and regions with more limited economic capacity.

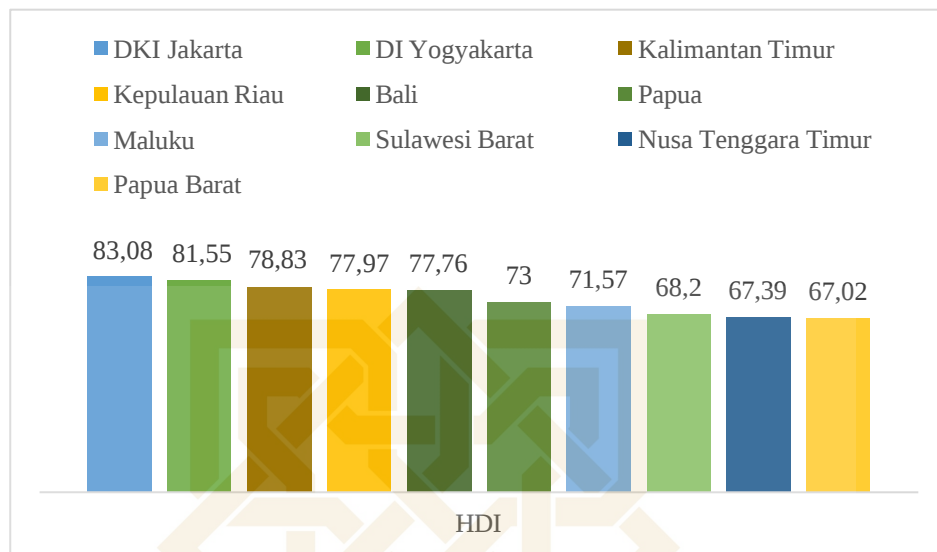


Figure 1.2 Disparities in the Human Development Index Across Provinces in Indonesia in 2024

Source: Central Bureau of Statistics (data processed)

An analysis of the Human Development Index (HDI) data for Indonesia's thirty-three provinces during the period 2010-2024 reveals significant disparities. Provinces that have attained high levels of human development, such as DKI Jakarta, have consistently demonstrated the highest HDI values, reaching 83.08 by 2024. Conversely, several regions in eastern Indonesia, including Papua, exhibited relatively low HDI levels at the beginning of the observation period, with an HDI value of 54.45 in 2010. However, a substantial increase was witnessed, reaching 73.00 by 2024. DI Yogyakarta has also been identified as one of several provinces that have achieved a high Human Development Index (HDI), with an increase from 75.37 in 2010 to 81.55 in 2024 (BPS, 2025). Conversely, provinces such as Nusa Tenggara Timur and Papua Barat still have a relatively lower HDI than the national average. This

finding suggests that improvements in human development have not been geographically uniform across all regions of Indonesia.

These disparities are indicative of fundamental differences in social, economic and demographic conditions between provinces. One demographic factor that exerts a substantial influence on human development outcomes is the age structure of the population, as evidenced by the dependency ratio (Espiñeira, 2019). The dependency ratio is defined as the ratio of the non-working-age population to the working-age population (Adioetomo & Mujahid, 2014). It is a metric that is employed to illustrate the economic burden borne by the working-age group (Simamora, 2022).

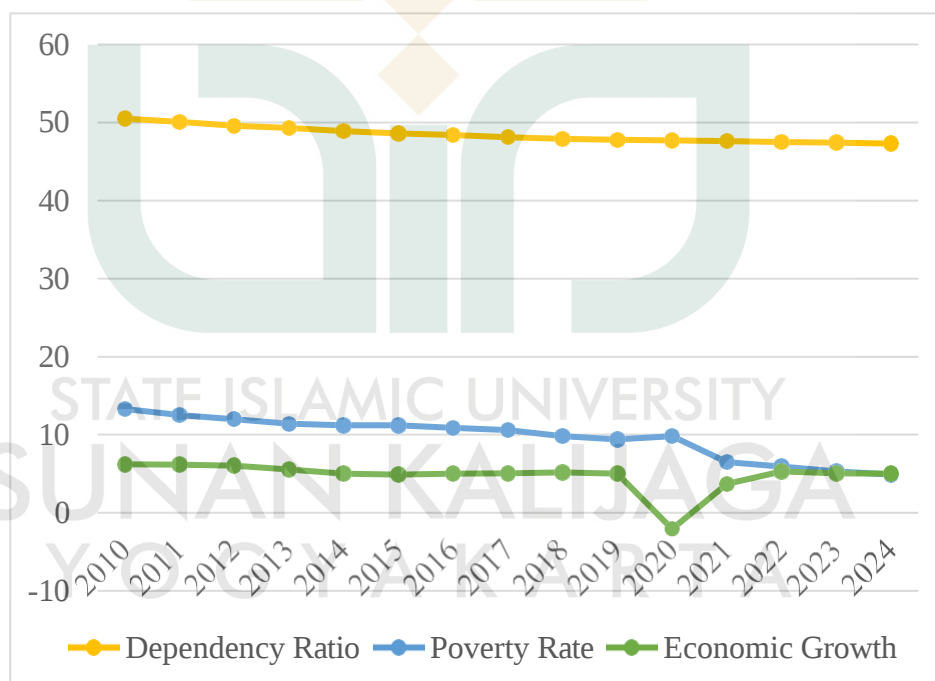


Figure 1.3 Dependency Ratio, Poverty Rate, and Economic Growth in Indonesia period 2010-2024

Source: Central Bureau of Statistics (data processed)

Based on Central Bureau of Statistics for the period 2010 to 2024, the trends in the three key variables shown in Figure 1.3 reflect ongoing structural dynamics while also highlighting fundamental issues that are crucial to human development. From a demographic perspective, the trend in the dependency ratio shows a gradual decline from around 50% in 2010, levelling off to approach 47% by 2024. Although nationally this reduction in the dependency burden indicates Indonesia's entry into a demographic window of opportunity, sharp inter-regional disparities mean that this structural advantage does not automatically boost the quality of life in every region. If the demographic burden in underdeveloped regions is not accompanied by the expansion of employment opportunities and adequate investment in education, the demographic dividend could, in fact, become an economic burden that hampers the growth of the Human Development Index (HDI).

Meanwhile, the poverty rate shows a long-term downward trend, falling from around 13% to below 10% in 2024. Although the national poverty rate has been successfully reduced, the graph also reveals pockets of social vulnerability, including minor setbacks caused by external shocks that have tested the economic resilience of the underprivileged. From a development economics perspective, the continued existence of a significant poor population reflects systemic barriers to the fulfilment of basic capabilities, whereby the underprivileged are forced to allocate all their resources to daily subsistence needs, thereby being cut off from access to quality education and adequate healthcare services (Todaro & Smith, 2006).

On the other hand, the economic growth trend in the graph shows the most extreme fluctuations, including a fall in economic growth into negative territory in 2020 due to the impact of the global pandemic, before eventually recovering gradually. These sharp fluctuations underscore that the expansion of macroeconomic output or GRDP does not proceed smoothly and is often vulnerable to various external shocks. More importantly, this phenomenon is closely linked to Simon Kuznets's perspective in his *Economic Growth and Income Inequality*, which emphasises that high per capita output should be capable of transforming consumption patterns and expanding people's purchasing power to access the basic needs that constitute the Human Development Index (HDI) (Kuznets, 1955). However, when economic growth fluctuates or fails to distribute increases in output evenly, this theoretical relationship is often hindered at the empirical level.

In addition to demographic factors, disparities in HDI scores are closely associated with variations in other economic and social indicators (Ashwini & Indumati, 2024). The per capita GRDP reveals a significant disparity between provinces, with DKI Jakarta and East Kalimantan demonstrating notably higher per capita GRDP levels in comparison to other provinces, such as East Nusa Tenggara or Maluku. This difference indicates that high economic activity in a region does not automatically guarantee an equitable quality of life for all its residents (Cui et al., 2024).

In this study, control variables such as Gross Regional Domestic Product (GRDP) per capita was included to obtain a more accurate estimate of the effect

of the dependency ratio, poverty rate, and economic growth on HDI. GRDP per capita reflects the economic capacity of a region to provide resources for human development (Arifah & Arifin, 2022).

Based on previous research reviews, most studies show that the dependency ratio has a negative effect on the HDI, either significantly or insignificantly, the three most recent of which are (Artika et al., 2022; Cahyani et al., 2024; Hidayat & Woyanti, 2021). These findings indicate that a high demographic burden tends to hamper the ability of regions to improve the quality of human development. However, several studies show different results, both in terms of significance and direction of influence, indicating that the relationship between the dependency ratio and HDI is contextual and influenced by regional characteristics (Handayani et al., 2023).

Next, most studies show that the poverty rate has a negative effect on the HDI, either significantly or insignificantly, the three most recent of which are (Artika et al., 2022; Asmara et al., 2024; Nugraeni & Aji, 2021; Sari & Arisetyawan, 2025). These findings confirm that a high proportion of the population living in poverty constricts households' fiscal space and hinders access to basic services, thereby impeding the achievement of high-quality human development. However, several studies also show variations in both the level of significance and the magnitude of the effect, suggesting that the impact of poverty on the Human Development Index (HDI) is highly dependent on the effectiveness of social protection programme interventions in each region (Kharisma & Hasmarini, 2024).

Most studies show that economic growth has a positive impact on the Human Development Index (HDI), whether significant or not; some of the most recent studies include (Dewi, 2017; Nugraeni & Aji, 2021; Syofya, 2018). These findings confirm that an increase in per capita output should expand people's purchasing power to access education and healthcare (Kuznets, 1955). However, some studies have found a positive but non-significant effect due to economic fluctuations and the uneven distribution of development outcomes, indicating that the relationship between economic growth and the HDI is heavily influenced by the quality of the regional economic structure (Irawan & Akbar, 2022).

Although there has been considerable research on dependency ratios and the Human Development Index (HDI), studies that integrate dependency ratios, poverty rate, and economic growth with control variables, such as GRDP per capita, are still relatively limited. Furthermore, studies that specifically focus their analysis on thirty-three provinces in Indonesia as a region with a relatively high HDI but significant variations in demographic structure between provinces have not been studied in depth. Therefore, this study was conducted under the title **“Dependency Ratio Effect on Human Development Index in Indonesia.”**

B. Research Formulation

Based on the description of the background of the problem above, this study attempts to answer the following questions:

1. How does the dependency ratio affect the Human Development Index in Indonesia during the period 2010-2024?
2. How does the poverty rate affect the Human Development Index in Indonesia during the period 2010-2024?
3. How does the economic growth affect the Human Development Index in Indonesia during the period 2010-2024?
4. How does GRDP per capita as a control variable affect the Human Development Index in Indonesia during the period 2010-2024?

C. Research Objectives

The objectives of this research are as follows:

1. Analysing the effect of the dependency ratio on the Human Development Index (HDI) in Indonesia during the period 2010-2024.
2. Analysing the effect of the poverty rate on the Human Development Index (HDI) in Indonesia during the period 2010-2024.
3. Analysing the effect of the economic growth on the Human Development Index (HDI) in Indonesia during the period 2010-2024.
4. Analysing the effect of Gross Regional Domestic Product (GRDP) per capita as a control variable on the HDI in Indonesia during the period 2010-2024.

D. Writing Systematics

CHAPTER I, this chapter contains the research background, problem formulation, research objectives, research benefits, and the systematic discussion used in this study. In this chapter, the author provides an overview

of the context and urgency of research on the effect of the dependency ratio, poverty rate, and economic growth on the Human Development Index (HDI) in Indonesia during the period 2010-2024.

CHAPTER II, this chapter discusses theories and concepts relevant to the research, including human development theory, the concept of dependency ratio, poverty rate, economic growth, and factors determining HDI. In addition, this chapter also reviews previous studies that discuss the relationship between demographic variables and human development, as well as control variables such as GRDP per capita.

CHAPTER III, this chapter describes the research methods used, including the type of research, quantitative approach, unit of analysis, scope of research, and variables analysed. This chapter also describes the data sources, data processing techniques, panel regression analysis methods, and research steps taken to test the effect of the dependency ratio, poverty rate, and economic growth on HDI in Indonesia.

CHAPTER IV, this chapter presents the results of data analysis obtained from statistical calculations and regression models. The discussion is conducted by linking the findings to the theory outlined in Chapter II. In this chapter, the author analyses how the dynamics of the dependency ratio affect, poverty rate, and economic growth on the Human Development Index (HDI), as well as the role of control variables in explaining variations in human development between thirty-three provinces in Indonesia.

CHAPTER V, this chapter presents the conclusions of the research, which explore the impact of the dependency ratio, poverty rate, and economic growth on HDI and the policy implications for local governments and national policymakers. Furthermore, this chapter puts forward a series of recommendations for future research, with a particular emphasis on the advancement of studies pertaining to demographic dynamics and human development.

CHAPTER V

CONCLUSIONS AND SUGGESTIONS

A. Conclusions

In this study, the author reached the following conclusions based on the results of the comprehensive testing and analysis carried out in the previous section on the impact of the dependency ratio, poverty rate, and economic growth on the Human Development Index (HDI) in 33 Indonesian provinces.

The variables Dependency Ratio (DR), Poverty Rate (PVT), Economic Growth (ECOG), and GRDP per capita can influence the HDI in all 33 Indonesian provinces simultaneously. Regarding the dependency ratio variable, a negative and significant effect on the HDI was found. This is supported by the significant coefficient results. The negative influence of the DR variable indicates that a high demographic burden, that is, a large proportion of the population outside the working-age group relative to the working-age population, tends to constrain the allocation of household resources and local fiscal capacity, thereby undermining the quality of human development outcomes.

The poverty rate variable, a negative and significant effect on the HDI was found. This is supported by the significant coefficient results. The negative influence of the PVT variable indicates that the high proportion of people living below the poverty line reduces the population's purchasing power and restricts essential access to education and healthcare services, which directly constitutes a major obstacle to the accumulation of the population's basic capabilities.

The economic growth variable, a negative and significant effect on the HDI was found. This is supported by the significant coefficient results. The negative

influence of the ECOG variable indicates that Fluctuations in macroeconomic output or gross regional domestic product (GRDP), particularly as a result of external shocks such as a pandemic, do not necessarily automatically boost individual well-being if such growth is not accompanied by fair income distribution within society.

Furthermore, the GRDP per capita variable has a positive and significant effect on the HDI. The results of the partial tests suggest that an increase in a region's economic capacity is associated with an improvement in its population's quality of life. This is consistent with the theory that stronger economic capacity enables local governments to provide adequate basic services.

B. Suggestions

Based on the findings of the research, several recommendations have been made to guide policymakers and future researchers, which need to be carefully considered. The researchers have made the following suggestions to the relevant parties:

1. Local governments need to formulate proactive labour and social protection policies to optimise demographic potential, so that the burden of supporting the non-working-age population can be offset through increased labour productivity and the expansion of equitable access to social security.
2. Poverty alleviation interventions must focus on strengthening programmes that directly aim to increase purchasing power and meet the basic needs of the underprivileged, particularly by ensuring affordable access to quality education and healthcare services in order to break the cycle of intergenerational poverty.

3. The direction of macroeconomic policy must not be solely focused on achieving high output growth figures or a high GRDP on paper; rather, it must be accompanied by the equitable distribution of the fruits of development and the expansion of the people-centred economic sector, so that every economic expansion truly translates into a tangible improvement in individuals' standard of living.
4. Local governments need to continue to promote inclusive grassroots economic growth in order to strengthen the region's fiscal capacity, which in turn can expand the allocation of public funds for social infrastructure development and the improvement of human capital in the future.

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