

**DETERMINANTS OF ECONOMIC GROWTH IN TEN PROVINCES OF
SUMATERA ISLAND**



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

AUTHORED BY:

Khairil Ghifari

NIM: 22108010072

THESIS SUPERVISOR:

Dr. Miftakhul Choiri, S.Sos.I., M.S.I.

NIP: 198210092015031003

**SHARIA ECONOMICS STUDY PROGRAM
FACULTY OF ISLAMIC ECONOMICS AND BUSINESS
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YOGYAKARTA**

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2025

RATIFICATION SHEET



KEMENTERIAN AGAMA
UNIVERSITAS ISLAM NEGERI SUNAN KALIJAGA
FAKULTAS EKONOMI DAN BISNIS ISLAM

Jl. Marsda Adisucipto Telp. (0274) 550821, 512474 Fax. (0274) 586117 Yogyakarta 55281

PENGESAHAN TUGAS AKHIR

Nomor : B-621/Un.02/DEB/PP.00.9/06/2026

Tugas Akhir dengan judul : DETERMINANTS OF ECONOMIC GROWTH IN TEN PROVINCES OF SUMATERA ISLAND

yang dipersiapkan dan disusun oleh:

Nama : KHAIRIL GHIFARI
Nomor Induk Mahasiswa : 22108010072
Telah diujikan pada : Jumat, 06 Maret 2026
Nilai ujian Tugas Akhir : A-

dinyatakan telah diterima oleh Fakultas Ekonomi dan Bisnis Islam UIN Sunan Kalijaga Yogyakarta

TIM UJIAN TUGAS AKHIR



Ketua Sidang

Dr. Miftakhul Choiri, S.Sos.I., M.S.I.

SIGNED

Valid ID: 6a1f98deaf04d



Penguji I

Dr. Sunaryati, SE., M.Si.

SIGNED

Valid ID: 6a1f97d333342



Penguji II

Riswanti Budi Sekaringsih, M.Sc.

SIGNED

Valid ID: 69b13da08754e



Yogyakarta, 06 Maret 2026

UIN Sunan Kalijaga

Dekan Fakultas Ekonomi dan Bisnis Islam

Prof. Dr. Misnen Ardiansyah, S.E., M.Si., Ak., CA., ACPA.

SIGNED

Valid ID: 6a22416553ca3

THESIS APPROVAL LETTER

To:

Dear Dean of the Faculty of Islamic Economics and Business

UIN Sunan Kalijaga Yogyakarta

In Yogyakarta

Assalamualaikum wr.wb.

After reading, researching, providing clues and correcting and making corrections as necessary, I as a supervisor am of the opinion that your thesis:

Name : Khairil Ghifari

NIM : 22108010072

Thesis Title : DETERMINANTS OF ECONOMIC GROWTH IN TEN PROVINCES OF SUMATERA ISLAND

It can be submitted to the Faculty of Islamic Economics and Business, Department Sharia Economics Study Program, UIN Sunan Kalijaga Yogyakarta as one of the requirements to obtain a Bachelor of Science degree in the field of Islamic Economics.


With this, I hope that the thesis mentioned above can be submitted soon. I thank you for your attention.


Yogyakarta, 26 Februari 2026

Acknowledged,

Supervisor

Head of Program Studi


Dr. Miftakhul Choiri, S. Sos., M.S.I
19821009 201503 1 003


Dr. Miftakhul Choiri, S. Sos., M.S.I
19821009 201503 1 003

STATEMENT OF AUTHENTICITY OF THESIS

The undersigned:

Name : Khairil Ghifari
NIM : 22108010072
Program Studi : Sharia Economics
Faculty : Islamic Economics and Business

I declare truthfully, that my thesis entitled: "DETERMINANTS OF ECONOMIC GROWTH IN TEN PROVINCES OF SUMATERA ISLAND" 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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YOGYAKARTA



Khairil Ghifari

22108010072

PUBLICATION APPROVAL SHEET

As one of the academic satecis of Sunan Kalijaga Yogyakarta State Islamic University,
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Name : Khairil Ghifari
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Program Studi : Sharia Economics
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NIM. 22108010072

MOTTO

“Kalau kau tidak bisa memperbaiki bangsa, maka jangan kau memberikan kontribusi untuk merusak bangsa”

(Bahlil Lahadalia)



ACKNOWLEDGMENT SHEET

With all gratitude, I dedicate this thesis to:

My beloved parents, Ayah and Umak

The people who have always lit the way for me. Thank you for your constant prayers in the wee hours of the night, your most sincere support, and your irreplaceable love. Everything I have achieved today is thanks to your sacrifice and boundless love. May this work serve as an expression of my gratitude and pride for all the struggles you have endured for me. I also extend my gratitude to myself and my closest loved ones.



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	jim	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
-	hamza h	,	apostrof
ي	yā'	Y	ye

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

ممتعددة	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>ḥikmah</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-auliyā’</i>
---------------	---------	---------------------------

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

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

D. Short Vowels and Their Application

Every *tā’ marbūṭah* 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.

-----	fathah	written	a
-----	kasrah	written	i
-----	dammah	written	u
فعل	fathah	written	fa’ala
ذكر	kasrah	written	zükira

يذهبُ	ḍammah	written	yazhabu
-------	--------	---------	---------

E. Long Vowels

1	fathah + alif جاهلية	written	ā <i>jāhiliyah</i>
2	fathah + yā'mati تنسى	written	ā <i>tans ā</i>
3	kasrah + yā'mati كريم	written	i <i>karim</i>
4	ḍammah + wāwu mati فروض	written	ū <i>furūd</i>

F. Double Vowels

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

G. Consecutive short vowels in a single word are separated by an apostrophe

أنتم	written	a'antum
------	---------	---------

أُعدَّت	written	<i>u'iddat</i>
لئن شكرتم	written	<i>la'in syakartum</i>

H. The definite article alif + Lam

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

القرآن	written	<i>al-Qur'ān</i>
القياس	written	<i>al-Qiyās</i>

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

السماء	written	<i>al-Samā'</i>
الشمس	written	<i>al-Syams</i>

I. Writing Words in Sentences

Written according to their spelling

ذوى الفروض	written	<i>ẓawī al-furūd</i>
أهل السنّة	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 “DETERMINANTS OF ECONOMIC GROWTH IN TEN PROVINCES OF SUMATERA ISLAND”. 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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2. Prof. D.r. Misnen Ardiansyah, S.E., M.Si., K.CA., ACPA., as Dean of the Faculty of Islamic Economics and Business, Sunan Kalijaga Yogyakarta State Islamic University.
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.
4. Mrs. Anggari Marya Kresnowati, S.E., M.E., as the Secretary of the Sharia Economics Study Program, Faculty of Islamic Economics and Business, Sunan Kalijaga Yogyakarta State Islamic University.
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7. All lecturers of the Sharia Economics Study Program, Faculty of Islamic Economics and Business, who have shared their knowledge and insights during my studies.
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9. Mr. Drs. Asril, as the author's father who always worked hard for the author, who always tried his best for everything until the author reached this point.
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12. Ajie, Salim, Akif, Estu, and Rolan, my friends and comrades under one roof at Wong Tulus boarding house. Without all of you, this thesis might have taken much longer to complete. Thank you for everything we have done together.
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ABSTRACT

This study analyzes the determinants of economic growth in ten provinces on Sumatera Island using panel data from 2012 to 2024. Economic growth is measured by Gross Regional Domestic Product (GRDP), while domestic investment (PMDN), Human Development Index (HDI), and Information and Communication Technology Development Index (IP-TIK) are employed as explanatory variables. The empirical model is estimated using a Fixed Effect Model (FEM) with Seemingly Unrelated Regression (SUR) to address cross-sectional correlation and improve estimation efficiency. The results indicate that domestic investment and human development have a positive and statistically significant effect on economic growth, confirming the theoretical predictions of endogenous growth theory that emphasize the role of capital accumulation and human capital in fostering long term growth. In contrast, the ICT development index exhibits a negative and significant effect, suggesting that digital development in Sumatera has not yet been fully transformed into productive economic activities and may still be dominated by consumption based usage. These findings imply that policies aimed at strengthening investment quality, improving human capital, and directing ICT utilization toward productive sectors are essential to promote sustainable regional economic growth in Sumatera Island.

Keywords: Economic Growth, Domestic Investment, Human Development Index, ICT Development Index



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ABSTRAK

Penelitian ini menganalisis faktor-faktor penentu pertumbuhan ekonomi di sepuluh provinsi di Pulau Sumatra dengan menggunakan data panel periode 2012 hingga 2024. Pertumbuhan ekonomi diukur melalui Produk Domestik Regional Bruto (PDRB), sedangkan investasi dalam negeri (PMDN), Indeks Pembangunan Manusia (IPM), dan Indeks Pembangunan Teknologi Informasi dan Komunikasi (IP-TIK) digunakan sebagai variabel penjelas. Model empiris diestimasi menggunakan Model Efek Tetap (FEM) dengan Regresi Seemingly Unrelated (SUR) untuk mengatasi korelasi antar-seksi dan meningkatkan efisiensi estimasi. Hasil menunjukkan bahwa investasi domestik dan pembangunan manusia memiliki efek positif dan signifikan secara statistik terhadap pertumbuhan ekonomi, mengonfirmasi prediksi teoretis teori pertumbuhan endogen yang menekankan peran akumulasi modal dan modal manusia dalam mendorong pertumbuhan jangka panjang. Sebaliknya, indeks perkembangan TIK menunjukkan pengaruh negatif dan signifikan, yang mengindikasikan bahwa perkembangan digital di Sumatera belum sepenuhnya bertransformasi menjadi aktivitas ekonomi produktif dan mungkin masih didominasi oleh penggunaan berbasis konsumsi. Temuan ini menyiratkan bahwa kebijakan yang bertujuan memperkuat kualitas investasi, meningkatkan modal manusia, dan mengarahkan pemanfaatan TIK ke sektor-sektor produktif sangat penting untuk mendorong pertumbuhan ekonomi regional yang berkelanjutan di Pulau Sumatera.

Kata Kunci: Pertumbuhan Ekonomi, Investasi dalam Negeri (PMDN), Indeks Pembangunan Manusia, Indeks Pembangunan ICT

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CHAPTER 1

INTRODUCTION

A. Background Study

Economic growth is a process of change in the economic conditions of a region towards a better direction within a certain period of time (Abdullah L, Canon S, 2024). Economic growth is an important indicator that can describe the financial condition and welfare of a country (Dewi & Fasa, 2021). An economy is said to be developing if its economic activity shows an increase compared to the previous period, and can be determined by several factors such as income and the quality of human resources (Wahyuni, 2019).

One of the main ways to see if a region is developing successfully is by looking at how much its economy is growing. High economic growth is usually associated with improving the welfare of the community, reducing poverty, and improving the quality of life of the population in the region (Fitriady et al., 2022a). Positive economic growth rates show that the economy is doing well. They also show that local governments are managing their resources well. These resources include people and natural resources (Saputro, 2021). But it's important to remember that if the economy is growing a lot, the benefits of that growth need to be spread out fairly. That way, everyone in society can feel the positive effects of economic growth (Laurens & Perdana Kusuma Putra, 2020).

One of the strategic ways to increase economic growth is by equalizing development across sectors and regions. This includes access to infrastructure, education, health, and sufficient employment opportunities (Yuli Wantri Simarmata, 2022). Inequalities in development between regions, such as those in several provinces in Sumatra, including West Sumatra, Riau, and Jambi, can slow down the acceleration of regional economic growth (Putri Naila, Tarmizi Abbas, 2023). For that reason, each region needs to set progressive annual economic growth targets, ensuring that they are higher than the previous year's achievements as a form of commitment to sustainable development (Hasibuan, 2023). In addition, regional economic policies must be prepared based on local potential and synergized with national programs such as accelerating poverty alleviation and improving the quality of human resources (Dewi & Fasa, 2021).

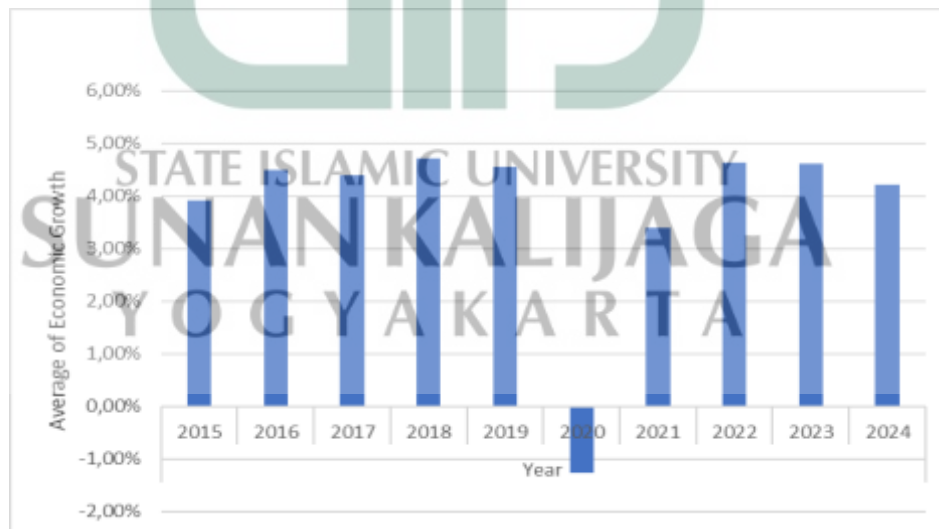


Figure 1. 1 Indonesian Economics Growth
Source: Central Statistic Agency (BPS)

According to official data from the Central Statistics Agency (BPS), Sumatera has recorded fairly stable economic growth in recent years. The economic recovery showed positive growth with a growth rate of 3.39 percent in 2021 and continued to increase to 4.63 percent in 2022 (BPS, 2024). However, economic growth can also be influenced by investment, technology, and the Human Development Index (Srisinto, 2019). Therefore, analyzing the variables that influence economic growth can be an important aspect in formulating development planning both in the national and regional sectors.

One of the persistent challenges in Indonesia's economic development is the pronounced interregional inequality, particularly evident in Sumatera. This disparity is largely driven by uneven distribution of natural resource control, unequal access to infrastructure, and significant variations in human capital quality (Yuli Wantri Simarmata, 2022). Economic growth is often concentrated in certain regions, such as Java, while regions outside Java, including provinces in Sumatera, experience slower development (Mailadani & Rosintan, 2024). Equitable development is a strategic issue that needs to be addressed through interventions on growth-determining variables such as investment and the human development index (Fitriady et al., 2022a).

Economic growth in the endogenous perspective is driven by internal factors that enhance productivity and sustain long-term development. Investment contributes to capital accumulation and stimulates innovation, while human development improves the skills and capabilities of the labor force, creating

stronger absorptive capacity for technology (Lucas, 1988; Romer, 1990). Along with these two fundamental components, information and communication technology development (ICT) plays an increasingly critical role as a facilitator of knowledge diffusion, efficiency, and digital innovation, which are essential elements in the modern economy (World Bank, 2024). The interaction between physical capital, human capital, and technological progress forms a reinforcing cycle that drives sustainable economic growth, which aligns with the basic mechanism of the Endogenous Growth Theory (ITU, 2023).

Domestic Investment (PMDN) is an investment activity carried out by domestic investors by using capital from within the country to develop business activities in the territory of Indonesia (Law No. 25 of 2007). Investment plays an important role in supporting regional economic growth. Capital invested through domestic investment (PMDN) and foreign investment (PMA) can increase productivity and expand employment (Yuli Wantri Simarmata, 2022). In the Indonesian context, PMDN not only serves as the main driver of regional economic development, but also as an indicator of trust in national economic stability (Fasih, 2025). From a long-term development perspective, investment is also an indicator of investor confidence in the economic stability of a region (Nararendra, 2018). Although some studies have shown its effects vary between regions, increasing PMDN in general remains an important prerequisite for accelerating national economic growth (Auliya Ramadani et al., 2024).

The Human Development Index (HDI) serves as a comprehensive indicator of the well-being of a population, encompassing three key dimensions: education, health, and living standards. A high HDI reflects a more productive and competitive population, which is a critical foundation for sustainable economic development (Hasibuan, 2023). In the context of economic development, HDI reflects the ability of the population to participate productively in economic and social activities, so that its increase contributes to sustainable economic growth (Sofilda et al., 2023; Suparman & Muzakir, 2023). Increasing HDI creates a more skilled and innovative workforce, accelerates technology adoption, and encourages increased regional productivity (Sabilla & Sumarsono, 2022). Empirical research shows that increasing HDI significantly boosts economic growth in both the short and long term (Saputro, 2021). Human development is therefore a fundamental strategy for achieving inclusive growth (Mailadani & Rosintan, 2024).

The Information and Communication Technology Development Index (IP-ICT) is a composite measure used to describe the level of development and ability of a region to access and utilize information and communication technology. IP-ICT includes three main dimensions, namely access to ICT infrastructure, the use of ICT in economic and social life, and the ability of people to use these technologies effectively (BPS, 2024). Methodologically, ICT development measurement is indeed multidimensional and therefore requires multiple indicators to summarize "universal and meaningful" connectivity achievements into a single consistent aggregate measure across countries regions (ITU, 2023). ICT is

understood as a tool that increases the efficiency, productivity, and inclusion of public services and markets, so that it becomes the foundation of digital economy readiness and a channel for achieving digital dividends when accompanied by complementary conditions such as skills, institutions, and healthy competition (World Bank, 2016).

The island of Sumatra is one of the main contributors to Indonesia's national economic growth, with a contribution of more than 20% to the national GDP and a growth rate of around 4.5% in 2024 (BPS, 2024). Despite its great potential, the dynamics of interprovincial growth in Sumatra show a fairly high heterogeneity. A study shows that there is a difference in the speed of economic convergence between districts and provinces on the island of Sumatra (Cani Miranti et al., 2018). This condition shows that economic development in Sumatra is uneven and still faces structural challenges such as infrastructure, human capital, and technology (Wahyudi et al., 2017). In addition, inter-regional dynamics are also proven to be significant in the spatial study of the Sumatra region, which indicates that the growth of a province depends not only on internal conditions but also on the influence of neighboring provinces (Syahputra et al., 2017).

Therefore, choosing 10 provinces on the island of Sumatra as research objects is very relevant to uncover the factors that affect growth regionally as well as to see how the variables of domestic investment (PMDN), human development index (HDI), and information and communication technology development index (IP-ICT) have a significant influence and contribute in very diverse contexts.

Previous studies confirm that the relationship between investment and HDI on economic growth is simultaneous and inseparable. These two variables affect each other directly or through indirect channels such as poverty and unemployment (Saputro, 2021; Srisinto, 2019). The results of these three previous studies also agree that the HDI has a positive effect on economic growth. For that reason, a comprehensive development approach is needed to generate quality and sustainable economic growth.

Research by Fitriady et al. (2022) shows that the Human Development Index (HDI) and investment have a positive and significant impact on economic growth in Indonesia. Their study, which used multi-province panel data analysis, found that provinces with higher HDI scores tended to experience stronger and more sustained economic growth. This finding reinforces the notion that improvements in human capital particularly in education, health and living standards are key drivers of regional economic performance. The study also highlights the crucial role of investment as a catalyst for growth by increasing productive capacity, creating employment opportunities and fostering innovation.

Similar results were found by Hasibuan (2023), who argued that a sole focus on economic growth measures such as GDP is insufficient to achieve broad-based prosperity. His study emphasised that improving the quality and accessibility of education and health services has a more direct and lasting impact on poverty reduction than short-term economic expansion. These findings underscore the multidimensional nature of development, where economic indicators need to be

complemented by social indicators to reflect real progress. Support of this perspective, Simarmata (2022) argues that human development is not only an outcome of economic growth, but also a prerequisite for achieving inclusive and sustainable development. Her analysis of development policies in several Indonesian provinces shows that areas with strategic investments in education and health tend to achieve more equitable growth outcomes.

A study shows that the increase in the Information and Communication Technology Development Index (IP-ICT) also has a positive and significant effect on Indonesia's economic growth, both in the short and long term (Hindrayani et al., 2024). This finding is in line with Lazuardi and Muttaqin (2023) who emphasized that the use of ICT improves regional economic performance through the efficiency of production processes and digital-based public services. Meanwhile, another study states that the ICT-based digital economy plays an important role as a catalyst for regional economic growth, as it encourages inter-regional integration and increases the competitiveness of productive sectors (Suhendra et al., 2025). Thus, IP-ICT is a strategic variable in encouraging sustainable economic growth in the digitalization era.

Unemployment and poverty remain major challenges on the island of Sumatra. An increase in HDI is not always linear with poverty reduction if it is not balanced with the creation of quality jobs (Hasibuan, 2023). Therefore, investment in labor-intensive sectors is a strategic solution to improve welfare (Fitriady et al.,

2022b). Local governments must ensure that economic growth is not enjoyed only by certain groups (Saputro, 2021).

Using an empirical approach, several studies have analyzed the relationship between investment (PMDN) and HDI on economic growth using regression methods such as ARDL and ECM (Dewi & Fasa, 2021). The results show that the relationship between variables is dynamic and different in each province, depending on the economic and social structure of each region.

Through the panel data approach and long-term observations, the pattern of the relationship between PMDN, HDI, and IP TIK on GRDP per capita can be identified. Secondary data from the Central Bureau of Statistics (BPS) and other agencies are an important basis for this analysis (Putri Naila, Tarmizi Abbas, 2023). The results of this study are expected to provide an empirical picture in formulating regional economic policies based on evidence and data.

The development in the current era of regional autonomy provides provincial governments with broad powers to regulate economic policies according to the needs and potential of their respective regions. However, many regions still face constraints in institutional capacity and human resources (Putri Naila, Tarmizi Abbas, 2023; Saputro, 2021). So for the reason, coordination between the center and the regions is crucial to ensure the sustainability of development.

In the long run, the success of development in Sumatera island depends not only on increasing GRDP, but also on creating an inclusive and efficient economic structure. Economic diversification is a keyword to avoid dependence on specific

sectors (Hasibuan, 2023; Yuli Wantri Simarmata, 2022). This is important so that economic growth is not vulnerable to external shocks.

This study aims to empirically analyze how PMDN, HDI and IP TIK affect economic growth in the three provinces of former Central Sumatra. By considering similar historical roots and different development paths, the results of this study are expected to provide academic and practical contributions in formulating equitable and sustainable regional economic development strategies (Dewi & Fasa, 2021).

B. Research Question

Each region in Sumatra Island exhibits different economic growth characteristics depending on its economic structure, technological readiness, human resource quality, and investment capacity. The ten provinces across Sumatra are Aceh, North Sumatra, West Sumatra, Riau, Jambi, South Sumatra, Bengkulu, Lampung, Bangka Belitung Islands, and Riau Islands have shown heterogeneous patterns of regional development, despite their geographical proximity and historical ties. These differences are influenced by variations in domestic investment levels, disparities in human development, and unequal access to information and communication technology (ICT) infrastructure. Understanding how these factors collectively influence economic growth is essential to formulating effective regional development strategies. Based on these considerations, this study addresses the following research questions:

1. How does domestic investment (PMDN) affect economic growth across the ten provinces of Sumatra Island?
2. How does the Human Development Index (HDI) influence economic growth in these provinces?
3. How does the Information and Communication Technology Development Index (IP-TIK) affect regional economic growth across Sumatra?

C. Objectives and Significance of The Research

This research aims to provide a comprehensive understanding of the relationship between domestic investment (PMDN), the Human Development Index (HDI), and the Information and Communication Technology Development Index (IP-TIK) on economic growth across ten provinces on the island of Sumatra, namely Aceh, North Sumatra, West Sumatra, Riau, Jambi, South Sumatra, Bengkulu, Lampung, Bangka Belitung Islands, and Riau Islands. The objectives of this study are to analyze the extent to which these three variables influence economic growth, to identify which of them has the most dominant impact, and to examine possible differences in the relationship patterns among PMDN, HDI, and IP-TIK across the ten provinces.

The significance of this research is expected to provide both theoretical and practical benefits, especially in the context of regional economic development in Indonesia. The benefits of this research are:

1. Theoretical Benefits

This research is expected to contribute to the development of knowledge in the fields of development economics and regional economics. The empirical findings regarding the influence of domestic investment, human development, and ICT development on economic growth can serve as a valuable reference for future studies addressing similar issues, both at the regional and national levels.

2. Practical Benefits

The results of this research can provide useful input for local governments across the ten provinces in Sumatra to design more targeted and evidence-based economic development policies. Furthermore, the findings can serve as a valuable reference for regional development agencies (Bappeda) in planning and allocating development resources more effectively and efficiently to promote inclusive and sustainable economic growth throughout Sumatra.

D. Structure of The Research

In compiling the research, the author divides it into 5 chapters that are comprehensively arranged to create systematic discussion results based on data, analysis, and logical thinking:

1. CHAPTER 1 : Introduction

This chapter contains a description of the research background that explains the importance of the topic to be studied, the formulation of research problems

based on empirical phenomena, the research objectives to be achieved, the benefits of the research both theoretical and practical, and the overall systematics of writing the thesis.

2. CHAPTER 2 : Theoretical Framework

This chapter includes the theoretical basis relevant to the variables being studied, a literature review of previous studies, a theoretical framework presented narratively to show the flow of thought between variables, and hypothesis development. Hypothesis development explains the nature of the relationship between the variables, the theoretical basis used, and the logical reason why the influence, relationship, or difference between the variables is expected to occur.

3. CHAPTER 3 : Research Methodology

This chapter explains the research design used, variables and operational definitions of research variables, population and research samples, data sources used and data collection techniques, and hypothesis testing methods that will be used in the study.

4. CHAPTER 4 : Results and Discussion

This chapter provides an overview of the research site or object under study, a descriptive analysis of the research variables, results of hypothesis testing based on the method of analysis used, and in-depth discussions that relate the research findings to theories and findings from previous research.

5. CHAPTER 5 : Conclusion and Recommendation

This chapter contains conclusions drawn from the research findings, research limitations encountered during the research process, and suggestions for practitioners, academics and further research.



CHAPTER V

CONCLUSION

A. Conclusion

Based on the results of the analysis using the Random Effect Model (REM) and the discussion presented in Chapter IV, with Economic Growth as the dependent variable and Domestic Investment (PMDN), Human Development Index (HDI), and Information and Communication Technology Development Index (IP-TIK) as the independent variables, the following conclusions can be drawn:

1. Domestic Investment (PMDN) has a positive and statistically significant effect on economic growth in the ten provinces of Sumatera Island. This finding indicates that increases in domestic investment have been able to effectively stimulate regional economic growth by expanding productive capacity and supporting economic activities. Higher levels of PMDN contribute to capital accumulation, infrastructure development, and job creation, which in turn enhance output and income generation. Domestic investment plays an important role as a driver of regional economic growth in Sumatera, particularly when it is directed toward productive sectors with strong value added potential.
2. Human Development Index (HDI) has a positive and statistically significant effect on economic growth in Sumatera Island. This result is consistent with Human Capital Theory, which emphasizes that improvements in education, health, and living standards enhance labor productivity. Individuals with higher

levels of education tend to possess better skills, wider employment opportunities, and higher income levels. Good health conditions also improve work capacity and efficiency. The combination of better education and health strengthens innovation capability and adaptability to technological and structural economic changes. Consequently, higher HDI contributes directly to increased regional productivity and supports more sustainable economic growth.

3. Information and Communication Technology Development Index (IP-TIK) has a negative and statistically significant effect on economic growth in the ten provinces of Sumatera Island. This result suggests that improvements in ICT development have not yet been optimally translated into higher economic performance during the study period. Although ICT expansion improves access to digital services and information, its economic benefits may be limited when technological adoption is concentrated in consumption oriented activities rather than productive sectors. Structural constraints such as limited digital skills, unequal infrastructure distribution, and weak integration of ICT into industrial and business processes may reduce the growth-enhancing impact of ICT development. Higher levels of IP-TIK are not automatically followed by higher economic growth in the provinces of Sumatera Island. The use of ICT in the region is more consumptive than productive, and the increase in ICT development has not been followed by an increase in the productivity of leading sectors.

B. Limitations of The Study

Based on the researcher's experience in the research process that has been carried out, there are several limitations that have been encountered and are expected to be used as evaluation material so that future researchers can improve their research. These limitations are as follows:

1. The research period was limited, with only a small portion of the years 2012-2024 being used.
2. This study focused only on three independent variables: Domestic Investment (PMDN), Human Development Index (HDI), and ICT Development Index (IP-TIK).
3. Theoretical exploration was limited. Theoretical exploration can enrich the research and findings of the study itself.

C. Suggestions

Based on the results of the research that has been conducted, there are several suggestions that can be used by policymakers and researchers in the future regarding economic growth, namely:

1. Local governments in Sumatra Island are advised not only to focus on increasing the volume of Domestic Investment (PMDN) but also to improve the quality and sectoral orientation of investment. Investment should be directed toward productive sectors with high value added, strong employment

absorption, and solid linkages with other economic sectors. In addition, improving the investment climate through simplified licensing procedures, stronger legal certainty, and better supporting infrastructure is essential to ensure that domestic investment generates a more optimal impact on economic growth. Since the Human Development Index (HDI) and the ICT Development Index (IP-TIK) have been proven to positively and significantly influence economic growth, the government is also encouraged to strengthen education and healthcare services, expand digital infrastructure, and improve digital literacy. The integration of human capital development and technological advancement is expected to support more inclusive, efficient, and sustainable regional economic growth.

2. Future researchers who are interested in examining the determinants of economic growth at the regional level are encouraged to include additional independent variables beyond Domestic Investment (PMDN), Human Development Index (HDI), and the ICT Development Index (IP-TIK), such as government expenditure, poverty levels, infrastructure development, or institutional quality. Extending the research period and applying different analytical approaches, including spatial or dynamic panel models, may also provide a more comprehensive understanding of regional economic growth patterns. Furthermore, the use of more diverse and relevant theoretical frameworks is expected to enrich the analytical perspective and improve the depth of findings in future studies.

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