

**ECONOMIC INEQUALITY ANALYSIS ACROSS REGENCIES AND
CITIES IN JAMBI PROVINCE USING THE WILLIAMSON AND THEIL
INDICES**



THESIS

SUBMITTED TO THE FACULTY OF ISLAMICS ECONOMICS AND
BUSINESS

SUNAN KALIJAGA ISLAMIC STATE UNIVERSITY
YOGYAKARTA

AS ONE OF THE REQUIREMENTS FOR OBTAINING A BACHELOR'S
DEGREE IN ECONOMICS

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SHARIA ECONOMICS STUDY PROGRAM
FACULTY OF ISLAMIC ECONOMICS AND BUSINESS
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2025

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THESIS APPROVAL LETTER

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Assalamualaikum wr.wb.

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Thesis Title : Economic Inequality Analysis Regencies and Cities In Jambi Province Using The Williamson and Theil Indices

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, 5 December 2025

Acknowledged,

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I declare truthfully, that my thesis entitled: "Economic Inequality Analysis Regencies and Cities In Jambi Province Using The Williamson and Theil Indices" 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, 5 December 2025

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Type of Work : Thesis

For the sake of scientific development, I agree to grant Sunan Kalijaga Yogyakarta Islamic State University Non-Exclusive Royalty-Free Rights for my scientific work entitled: "Economic Inequality Analysis Regencies and Cities In Jambi Province Using The Williamson and Theil Indices"

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On date December 5th 2025

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Ajie Nugraha Pratama
22108010051

MOTTO

Bergelap-gelaplah dalam terang, berterang-teranglah dalam gelap.

-Tan Malaka

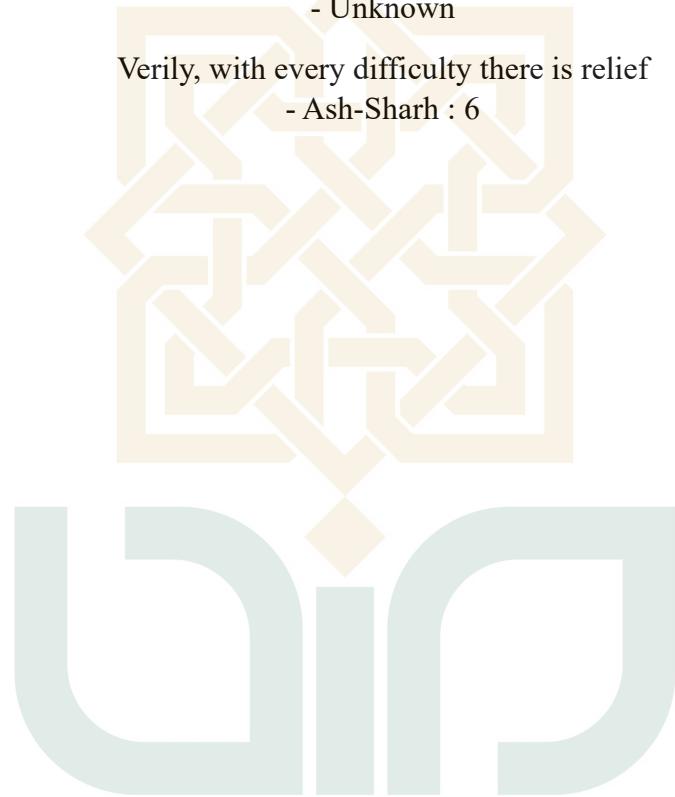
Memento Mori

(Remember you must die)

- Unknown

Verily, with every difficulty there is relief

- Ash-Sharh : 6



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YOGYAKARTA

ACKNOWLEDGEMENT SHEET

The author dedicates this thesis with great pride to himself and of course, to his beloved Mama.

Although this journey may seem brief, it has been bitter, arduous and full of twists and turns. Nevertheless, the author knows that Mama has supported me all the way, as have Datuk, Nyai, Ayah, Bunda, Om Fadli, Ante Leni and Om Zikri. They will always watch over the author and support the author. The author knows that the storms that come and go are a sign of strength and proof of the author own extraordinary nature and destiny for greatness. They can therefore lead with courage at every turn. Once again, this thesis is dedicated to the author, and everything that the author have striven for is for their own happiness.



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	śā'	ś	es (with a dot above)
ج	jim	j	je
ح	ḥā'	h	ha (with a dot below)
خ	khā'	kh	ka and ha
د	dāl	d	de
ذ	żāl	ż	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	zā'	z	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
ه	hā‘	h	ha
ء	hamza h	,	apostrof
ي	yā‘	Y	ye

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

ممتعددة	written	<i>muta‘addidah</i>
عدة	written	<i>‘iddah</i>

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

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

حکمة	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 الوليا	written	<i>karāmah al-auliyā'</i>
--------------	---------	---------------------------

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

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

D. Short Vowels and Their Application

Every *tā' marbūtah* 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*, *zakat*, 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	zukira
يذهب	dammah	written	yazhabu

E. Long Vowels

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

F. Double Vowels

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

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

أَنْتُمْ	written	<i>a'antum</i>
أَعْدَتْ	written	<i>u'idat</i>
لَئِنْ شَكْرَتْمُ	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”.

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>zawi al-furūd</i>
أهل السنة	written	<i>ahl as-sunnah</i>

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PREFACE

In the name of Allah, the Most Gracious, the Most Merciful, all praise is due to Allah SWT, by whose mercy and guidance this thesis entitled through whose blessings and guidance this thesis, titled **“ECONOMIC INEQUALITY ANALYSIS ACROSS REGENCIES AND CITIES IN JAMBI PROVINCE USING THE WILLIAMSON AND THEIL INDICES”**, has been completed. May peace and blessings be upon the Prophet Muhammad SAW, his companions.

With deep gratitude to Allah SWT and the invaluable support of many individuals, the completion of this thesis has been made possible. Accordingly, the author wishes to extend sincere appreciation and heartfelt thanks to the following parties. Therefore, it is only fitting for the author to express sincere appreciation and heartfelt thanks to:

- 1) Prof. Noorhaidi Hasan, S.Ag., M.A., M.Phil., Ph.D., as the Rector of Sunan Kalijag Yogyakarta State Islamic University
- 2) Prof. Dr. Misnen Ardiansyah, S.E., M.Si., Ak., CA., ACPA. As the Dean of 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 Economic and Business, Sunan Kalijaga Yogyakarta State Islamic University. And also as Academic Supervisor, thank you for your guidance and mentoring during lecturer process.
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- 6) All employees and administrative staff of the Faculty of Islamic Economics and Business, Sunan Kalijaga Yogyakarta State Islamic University.
- 7) To Mama, thank you for always giving me irreplaceable encouragement and love. Even though our relationship has not always been perfect, I am sure that Mama's love is the most extraordinary of all, keeping the little flame inside me burning even after it has been blown out by countless storms.
- 8) To the late Datuk, thank you for being a father figure during Datuk's lifetime. Thank you for providing tremendous motivation throughout your life, which gave the author the mental strength to face the world.
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- 10) To my late Papa and Kakek, although our time together was very brief, you still played an important role in the author's life. Thank you for everything.
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- 12) To my friends from the same hometown, Kevin Maret Manurung, Rolansyah Putra Pratama, Wildan Azra, Wahyu Aldicha. Those who have been friends with the author since childhood and now live together in a foreign land, great people who dared to step out of their comfort zone to conquer the world.
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16) To all of the author's colleagues and acquaintances in the Study Programme, Faculty, University, in the Special Region of Yogyakarta, and even around the world, whom the author cannot mention one by one. Thank you for being good people, sharing interesting experiences, and being the author's colleagues, friends, and even best friends

17) All parties who cannot be mentioned one by one, who have helped and contribute to complete this thesis.

18) Last but not least, I want to thank me, I want to thank me for believing in me, I want to thank me for doing all this hard work. I want to thank me for having no days off. I want to thank me for never quitting. I want to thank me for always being a giver and trying to give more than I receive. I want to thank me for trying to do more right than wrong. I want to thank me for being me at all times, Ajie Nugraha Pratama you are always going to be the best from the best, not because you are the best, but because you are always do the best.

The author realize that no human work is perfect. This includes the writing of this thesis which undoubtedly has many shortcomings due to author limited abilities and knowledge. Therefore, the author gladly welcome criticism and suggestions from readers to achieve better results.

Yogyakarta, 5 December 2025

Author,



Ajie Nugraha Pratama

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ABSTRACT

The present study employs a dual-index approach, namely the Williamson Index and the Theil Entropy Index, to examine inter-regional economic inequality across the nine regencies and two cities in Jambi Province over the period 2014–2024. The research employs a descriptive–quantitative design, utilising annual secondary data on GRDP at constant prices (base year 2010) and population data from official BPS publications, which are processed in RStudio. The findings indicate a general decline in inequality from 2014 to 2023, followed by a rebound in 2024. The Williamson Index demonstrated a decline from 0.495 in 2014 to 0.419 in 2023, subsequently rising to 0.448 in 2024. The mean of 0.460 signifies medium-high and structurally persistent inequality. The Theil Index exhibited a consistent pattern, declining from 0.113 (2014) to 0.079 (2023) and rising to 0.096 (2024), with a mean of 0.098, indicative of moderate yet entrenched inequality. Decomposition results indicate that inequality is consistently driven by a small number of districts with per capita GRDP far above the provincial average. This is most notably evident in Tanjung Jabung Barat and Tanjung Jabung Timur throughout the observed period (2014–2023), while 2024 shows Tebo emerging as a major contributor alongside Tanjung Jabung Barat.

Keywords: regional inequality; Williamson Index; Theil Index; GRDP per capita; Jambi Province; decomposition analysis.

CHAPTER 1

INTRODUCTION

A. Background

The persistent issue of economic inequality among Indonesian regions remains a critical development challenge, especially in the era of fiscal decentralization since 2001. Despite expectations that autonomous regional management would lead to more equitable outcomes, disparities in economic development continue to persist, with growth disproportionately concentrated in certain areas (Hartono & Irawan, 2011; Suparman & Muzakir, 2023). This is not an isolated phenomenon; similar patterns have also been observed in other decentralized economies such as China and Poland, indicating that decentralization alone is insufficient to eliminate regional disparities (Buriachenko et al., 2024; Kochanowicz & Rymaszewska, 2008; Yan & Mohd, 2023).

In the broader macroeconomic context, Putro (2023) notes that although Indonesia has witnessed relatively stable national growth over the past decade, per capita income inequality remains significant and exhibits a persistent trend(Putro, 2022). Ginanjar et al. (2024) also determined, through application of the Theil decomposition approach, that the most significant contributor to inequality is differences between regional groups, rather than within groups. This finding suggests that fiscal decentralization has not been effective in reducing structural inequality(Ginanjar et al., 2024a; Putro, 2022; Sulistyaningrum & Tjahjadi, 2022). In some cases,

inequality is exacerbated by weak fiscal redistribution and centralized development allocation(Arsyad, 2010; Kochanowicz & Rymaszewska, 2008; Resosudarmo & Vidyattama, 2006).

The failure to address economic inequality can result in the exacerbation of social inequality. This phenomenon has the potential to engender regional segregation, diminish regional competitiveness, and, in some cases, give rise to social conflict. Lincoln Arsyad (2010) posits that the pursuit of development without the principles of inclusivity and equity will inevitably culminate in growth that is deemed unsustainable(Arsyad, 2010). In the global context, a study by Kochanowicz et al. (2008) demonstrates that inter-regional inequality in China results in a decline in regional synergies(Kochanowicz & Rymaszewska, 2008). Yan and Mohd's (2023) showed that that accelerated economic expansion in a specific region, devoid of sufficient redistribution, is associated with an escalation in inequality on a national scale(Yan & Mohd, 2023).

In the context of this national imbalance, Jambi Province is a region of particular interest for study. Geographically, Jambi is located in the central part of Sumatra Island and has direct access to neighbouring provinces such as South Sumatra, Riau, and West Sumatra. Jambi is composed of nine regencies and two cities, each exhibiting distinct topographic characteristics, natural resources, and economic structures (BPS, 2024). The region is renowned for its considerable natural resources, including petroleum, natural gas, rubber, and palm oil, as well as other

primary sectors such as agriculture and forestry (Adif et al., 2023; Destiningsih et al., 2019; Halim et al., 2024; Widjaja & Tikson, 2021; Zulgani & Zevaya, 2021). As demonstrated by Palembang et al. (2021), this form of inequality is also evident in other provinces, such as West Sumatra (Palembang et al., 2021; Siboro & Azansyah, 2024a; Yoda & Febriani, 2020).

As a province with abundant natural resources and the potential to serve as a regional economic catalyst, Jambi confronts the archetypal challenge of disparate development. The majority of economic activity and infrastructure development is concentrated in Jambi City and Batanghari, while regions such as Sarolangun, Tebo, and Bungo experience limitations in access, investment, and public services. This phenomenon is further substantiated by the findings of Halim et al. (2024), Zulgani & Zevaya (2021), and Widjaja et al. (2021), which demonstrate a concentration of growth in urban centres (Halim et al., 2024; Widjaja & Tikson, 2021; Zulgani & Zevaya, 2021). Yoda et al. (2020), Palembang et al. (2021), and Siboro et al. (2024), this form of inequality is also evident in other provinces, such as West Sumatra (Palembang et al., 2021; Siboro & Azansyah, 2024a; Yoda & Febriani, 2020). Buriachenko et al. (2024) underscored the prevalence of this condition in developing countries in Eastern Europe, including Ukraine and Poland (Buriachenko et al., 2024).

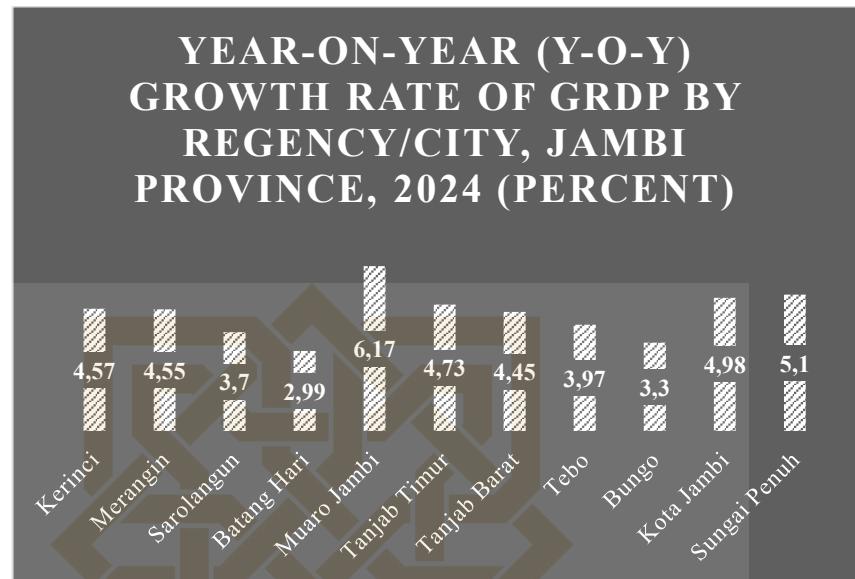


Figure 1. 1 Year-on-Year (Y-o-Y) Growth Rate of Gross Regional Domestic Product (GRDP) by Regency/City, Jambi Province, 2024 (Percent).

Source : Badan Pusat Statistik Provinsi Jambi 2024

During the period 2014-2024, a series of development policies were implemented, encompassing a range of initiatives such as the reinforcement of the community-based economy, the digitization of public services, and the cultivation of palm oil and rubber industry clusters. However, according to data from the Central Bureau of Statistics and the findings of several studies, disparities between regions within the province persist. Zulgani and Zevaya's (2021) research indicates that Jambi City persists in its preeminent role in contributing to Gross Regional Domestic Product (GRDP), while other districts demonstrate a state of relative stagnation (Zulgani & Zevaya, 2021). Yoda (2019) identified a lack of fiscal capacity and region-based development planning as contributing factors to this stagnation (Yoda & Febriani, 2020). This condition is exacerbated by regional dependence on the General Allocation Fund (*Dana Alokasi Umum*) and Special Allocation

Fund (*Dana Alokasi Khusus*), whose allocations are not always aligned with local development needs (Adif et al., 2023; Destiningsih et al., 2019; Halim et al., 2024; Novianti & Panjaitan, 2022; Rahman et al., 2023; Soebagyo et al., 2019; Vanesha et al., 2019).

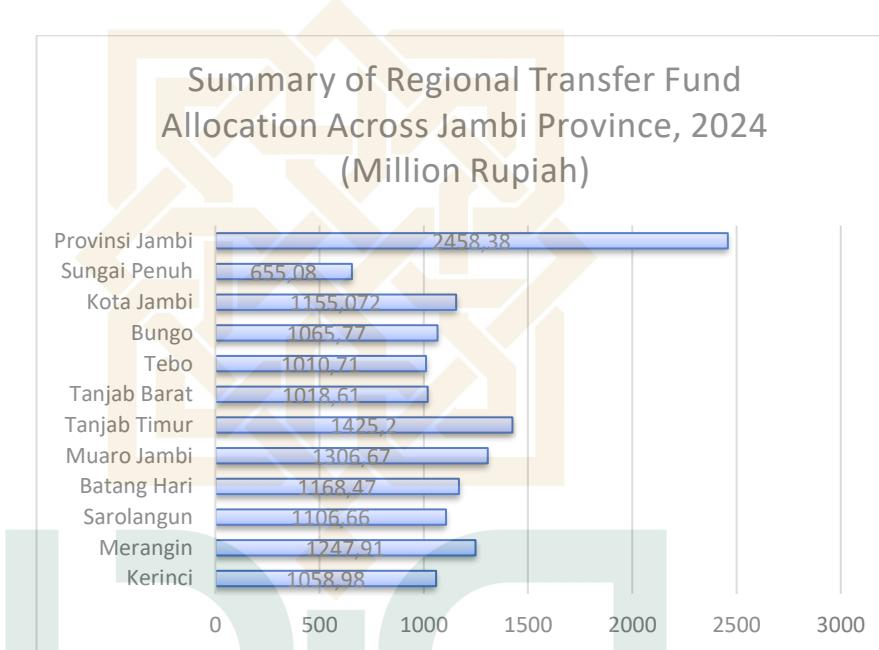


Figure 1. 2 Summary of Regional Transfer Fund Allocation Across Jambi Province, 2024 (Million Rupiah)
Source : Ministry of Finance Indonesia 2024

It is imperative to acknowledge that Jambi is currently at a critical juncture in its development. In the preceding decade, the province has undergone pivotal structural transitions, including the global health crisis posed by the novel strain of Coronavirus, the volatility of global commodity prices (particularly those of palm oil and coal), and shifts in fiscal transfers from the central government. These dynamics have engendered both risks and opportunities for addressing inequality. The limited effectiveness of existing development strategies necessitates a timely reassessment of

regional inequality patterns. This is particularly true in light of national ambitions for inclusive and balanced growth.

In the methodological context, the simultaneous use of Theil Index and Williamson Index in this study offers advantages that have not been explored in previous studies. The Theil Index provides a detailed picture of the sources of inequality through spatial and sectoral decomposition, while the Williamson Index displays income deviation in a more concise yet statistically significant manner(Adriana & Suparyati, 2023; Akita & Miyata, 2018; Alfons et al., 2024; Ammar & Bachtiar, 2024; Buriachenko et al., 2024; Destiningsih et al., 2019; Ginanjar et al., 2024a; Iskandar & Saragih, 2018; Novianti & Panjaitan, 2022; Sulistyaningrum & Tjahjadi, 2022; Susanto et al., 2024; Syamsir & Rahman, 2018; Yuliani, 2015). A review of the extant literature reveals studies by Ginanjar et al. (2024) and Yoda (2019) that demonstrate the merits of each index(Ginanjar et al., 2024a; Yoda & Febriani, 2020). However, there is a paucity of studies that have simultaneously and longitudinally examined them at the provincial level. In addition, the research by Palembang et al. (2021) proposed a combinative approach to address single-measurement bias(Palembang et al., 2021).

The Theil Index is one of the entropy class methods that allows the decomposition of inequality into two main components: between group and within group (Arsyad, 2010). This decomposition enables researchers to discern whether inequality is predominantly attributable to disparities between regions or within regions. The studies of Susanto et al. (2024) and

Sitepu et al. (2018) demonstrate the efficacy of the Theil Index in elucidating the impact of uneven industrialization on long-run inequality(Sitepu et al., 2018; Susanto et al., 2024).

Concurrently, the Williamson Index is employed to gauge economic disparity among regions based on the standard deviation of GRDP per capita, normalized against the mean GRDP(Adif et al., 2023; Alfons et al., 2024; Buriachenko et al., 2024; Destiningsih et al., 2019; Halim et al., 2024; Iskandar & Saragih, 2018; Novianti & Panjaitan, 2022; Soebagyo et al., 2019; Susanto et al., 2024; Widjaja & Tikson, 2021; Yuliani, 2015). This index is characterized by its simplicity in construction, yet it is effective in identifying the extent to which a region deviates from the province's average economic condition (Adif et al., 2023; Alfons et al., 2024; Arsyad, 2010; Halim et al., 2024; Iskandar & Saragih, 2018; Soebagyo et al., 2019; Susanto et al., 2024; Widjaja & Tikson, 2021; Yoda & Febriani, 2020). An elevated index value is indicative of greater inequality. In the Indonesian context, the Williamson Index has been utilized in numerous studies, including those conducted by Soebagiyo (2019), Yoda (2019), and Palembang et al. (2021).

In contrast to previous studies, which employed a single approach and exhibited limited temporal coverage, this study utilizes two measurement tools the Theil Index and the Williamson Index to examine economic inequality among regions in Jambi Province from 2014 to 2024. This approach offers distinct advantages in comprehensively elucidating the

level and structure of inequality. For instance, Adif (2023) employed the Williamson Index exclusively during the 2015-2018 timeframe, while the study by Zulgani and Zevaya (2021) was confined to the years 2016-2020. Ginanjar's (2024) study utilizes the Theil Index, a measure of aggregate economic performance, to examine national-level data rather than focusing on the specific context of a single province. This approach aligns with the findings of Adif (2023), Zulgani & Zevaya (2021), and Ginanjar (2024), who also employed the Theil Index to analyse national data.

The necessity of this study is further compounded by the imperative for accurate and interpretable inequality data in the regional development planning process. The disparities in geographical, demographic, and economic characteristics among regencies/municipalities in Jambi Province necessitate a methodological approach that can not only provide aggregate values but also elucidate the underlying factors that engender inequality. The study by Novianti and Panjaitan (2022) underscores the pivotal role of regional expenditure and the human development index in curbing inequality. The persistence of inequality is likely to result in disparities in access to public services and imbalanced regional productivity (Novianti & Panjaitan, 2022; Soebagyo et al., 2019; Susanto et al., 2024).

Moreover, this study not only extends the time frame to a decade (2014-2024), but also incorporates structural dynamics that occurred during this period, such as the impact of advanced fiscal decentralization, falling commodity prices, and the pandemic caused by the Corona virus (Covid-

19). The considerable time span in question permits the analysis of long-term trends and shifts in development patterns. Consequently, the findings of this study are anticipated to furnish a substantial empirical basis for the development of region-based policies, as proposed by Resosudarmo et al. (2006) and Panjaitan & Novianti (2022).

The global commodity price crisis and the pandemic of 2019 novel coronavirus (henceforth referred to as "covid-19") during the 2014-2024 decade, are also salient factors in the dynamics of regional inequality. In the context of declining prices of palm oil and coal, regencies with a high degree of reliance on economic activity. Conversely, regions that exhibited greater economic diversification, such as Jambi City, demonstrated a higher capacity to withstand adversity and swiftly regain economic stability. This phenomenon underscores the significance of regional economic structure in influencing the resilience and distribution of development outcomes (Novianti & Panjaitan, 2022; Widjaja & Tikson, 2021; Yan & Mohd, 2023).

In contrast to the study of Adif et al. (2023) which exclusively employed the Williamson Index to measure inequality in Jambi Province in the 2015-2018 period using the Williamson Index without conducting a thorough spatial and temporal analysis, as well as Zulgani and Zevaya's (2021) study which examined the 2016-2020 period but constrained to using single index, and Ginanjar et al. (2024) that applied the Theil Index nationally for the 2010-2022 data without elaborating on the dynamics at the district/municipality level, this study is the first to integrate two

inequality measurement tools, namely, the Williamson Index and the Theil Index in one analytical framework for the long decade 2014-2024 at the district/regencies level in Jambi Province. This combinative approach not only provides a comprehensive picture of the magnitude of inter-regional inequality through the Williamson Index, but also identifies the root causes of inequality through spatial and temporal decomposition (between and within groups) using the Theil Index. Consequently, this study contributes to filling methodological, temporal, and spatial gaps that have not been covered by previous studies (Adif et al., 2023; Ginanjar et al., 2024; Zulgani & Zevaya, 2021).

This study proposes a novel framework for examining economic inequality in Indonesia, one that incorporates a comprehensive set of dimensions, including concept, region, time, and method. By addressing these dimensions, the study aims to address a critical gap in the existing literature on economic inequality in Indonesia. The present study will concentrate on Jambi Province from 2014 to 2024, employing the Theil Index and Williamson Index measurements in tandem to obtain a comprehensive depiction of inequality between districts/cities. Moreover, it is anticipated that this study will make a substantial contribution to the development of regional fiscal policy, particularly with regard to the allocation of transfer funds, the development of strategic areas, and the planning of regional development based on potential. The findings from the studies of Palembang et al. (2021) and Novianti & Panjaitan (2022)

demonstrate the necessity of a data-driven approach to circumvent uniform policies that serve to exacerbate existing disparities (Novianti & Panjaitan, 2022; Palembang et al., 2021). Consequently, the development of a comprehensive measurement toolkit to assess economic inequality in Jambi is imperative within the context of inclusive growth (Adif et al., 2023; Arsyad, 2010; Ginanjar et al., 2024a; Wijaya et al., 2021).

B. Research Questions

1. What is the level and trend economy inequality among districts and cities in Jambi Province during the period 2014-2024 as measured by the Williamson Index?
2. How does the decomposition of the Theil Index reveal the contribution of inter-regional and intra-regional disparities to overall economic inequality in Jambi Province from 2014-2024?
3. To what extent do the Williamson Index and the Theil Index provide complementary or differing perspectives in identifying and explaining inter-regional inequality in Jambi Province?
4. What are the policy implications of the findings from the Williamson and Theil inequality analysis for promoting more inclusive and equitable regional development planning in Jambi Province?

C. Research Objectives

The objectives of this research are as follows:

1. To measure and analyze the level and trend of economic inequality among districts and cities in Jambi Province during the period 2014–2024 using the Williamson Index.
2. To decompose economic inequality in Jambi Province through the Theil Index in order to identify and quantify the contributions of inter-regional and intra-regional disparities over the 2014-2024 period.
3. To compare the analytical perspectives of the Williamson Index and the Theil Index in capturing and explaining regional economic inequality, highlighting their complementarities and differences.
4. To formulate policy recommendations for more inclusive and equitable regional development planning in Jambi Province based on the empirical findings of the Williamson and Theil inequality analyses.

D. Research Contribution

1. Theoretical Contribution

This study contributes to the academic discourse on regional economic inequality by advancing the methodological application of dual-measurement approaches. While many previous studies on Indonesia's regional inequality rely on either the Williamson Index or the Theil Index in isolation, this research integrates both within a longitudinal, province-level analysis (2014–2024). By combining the Williamson Index, which provides a concise measure of income dispersion adjusted by population and with the Theil Index, which allows decomposition into inter-regional and intra-regional inequality components, this study

offers a more granular and comprehensive understanding of inequality dynamics. The findings can serve as a methodological reference for future scholars seeking to assess spatial inequality with multi-index approaches, especially in contexts where both aggregate deviation and structural decomposition are needed.

2. Practical Contribution

a. For Academics and Researchers

This research offers a validated case study on applying the Williamson and Theil indices in combination for long-term spatial inequality analysis at the subnational level. It can serve as a methodological reference for future work in spatial econometrics, fiscal policy evaluation, and regional development studies.

b. For Local Government

This study provides empirical evidence on the spatial structure of inequality across districts and cities in Jambi Province over the 2014–2024 period, a time marked by fiscal decentralization, commodity price volatility, and the COVID-19 pandemic. The results can assist Bappeda and other relevant government units in:

- 1) Designing more equitable transfer fund allocation (DAU, DAK, and other fiscal instruments).
- 2) Identifying priority development areas and growth poles that require intervention.

- 3) Adjusting regional development plans (RPJMD, RKPD) to reduce structural gaps between fast-growing urban centers and lagging peripheral regions.

- c. For Private Sectors and Investors

By revealing long-term inequality patterns and economic concentration zones, this study provides insights for business location decisions, regional investment prioritization, and corporate social responsibility (CSR) targeting. Identifying regions with persistent inequality or low economic resilience helps investors align investment strategy with inclusive regional growth.

E. Structure of the Study

According to the findings of the extant literature review and conceptual framework, the subsequent sub-chapter, entitled "Research Structure," will present a systematic arrangement of research components. These components will range from objectives to methods to the writing flow used to answer the research question.

Chapter I - Introduction

Contains the background of the problem, problem formulation, research objectives, research benefits (theoretical and practical), and the systematic writing of the research report.

Chapter II - Literature Review

Contains theoretical studies that include the theory of regional economic inequality, the theory of regional development, concepts and formulas for measuring inequality (Williamson Index and Theil Index), as well as a review of previous research and a framework of thought.

Chapter III - Research Methodology

This chapter details the research design and approach, specifying the unit of analysis (districts/cities in Jambi Province), the time coverage (2014–2024), and the type of data used (primarily GRDP per capita at constant prices, population, and other supporting indicators from BPS). It provides the operational definitions of variables, presents the formulas for the Williamson Index and Theil Index (including decomposition into between- and within-region components), and explains the analytical procedures employed. The software and tools used for calculation and visualization (R-Studio) are also described.

Chapter IV - Results and Discussion

This chapter presents the empirical findings. It begins with an overview of Jambi Province's economic structure and GRDP trends, followed by the calculation and trend analysis of the Williamson Index and the decomposition of the Theil Index. A comparative analysis between the two indices is provided to highlight complementary insights. The discussion interprets these findings in light of the theoretical framework and previous

studies, while also identifying the implications for regional development policies.

Chapter V - Closing

Concludes the research results and policy recommendations for more inclusive regional development in Jambi Province, as well as suggestions for further research.



CHAPTER V

CONCLUSION

A. Conclusion

1. The Williamson Index indicates that inter-regional economic inequality in Jambi Province has remained in the moderate-high range consistently over the period 2014–2024, with an average value of approximately 0.46. The index demonstrates a general downward trend, indicating a gradual narrowing of the GRDP gap between districts/cities, although inequality slightly increases again at the end of the period. This pattern indicates that convergence is occurring, albeit incompletely, and provincial economic growth remains uneven across space.
2. The Theil Index also indicates moderate but declining inter-regional inequality, with an average value of approximately 0.10 over the study period. The time pattern is broadly similar to the Williamson Index, with inequality tending to fall and then slightly rising again in the final year. The findings of the decomposition analysis indicate that a limited number of districts/cities contribute disproportionately to the overall inequality, particularly in coastal and core areas such as Tanjung Jabung Barat, Tanjung Jabung Timur, and Kota Jambi. It is evident that several inland districts contribute relatively smaller shares and, in some years, even serve to mitigate the overall level of inequality, thereby highlighting a spatially imbalanced growth structure.
3. The Williamson and Theil Indices demonstrate a consistent pattern, indicating that inter-regional inequality in Jambi Province is moderate

and exhibits a downward trend over time, with a slight resurgence observed in the final year. The Williamson Index has been demonstrated to be an effective summary measure of dispersion in regional GRDP, and it is useful for tracking the overall trajectory of inequality. Conversely, the Theil Index offers enhanced analytical depth by enabling decomposition and elucidating the specific districts that underpin the observed disparity. The integration of both indices provides a more robust and nuanced explanation of spatial inequality than either index in isolation.

4. The empirical evidence suggests that provincial development strategies must shift from a narrow growth bias towards an explicit focus on reducing spatial disparities. In order to achieve this objective, three fundamental steps must be taken. Firstly, infrastructure projects and fiscal transfers must be prioritised for structurally lagging inland and peripheral districts. Secondly, transport networks and economic linkages between Kota Jambi as the regional core and its hinterlands must be improved. Thirdly, economic activities in disadvantaged regions must be diversified and upgraded, especially in agriculture, plantation commodities, and other resource-based sectors. Concurrently, the government should establish a formal framework for periodically tracking spatial inequality through the Williamson and Theil Indices. This would ensure that policy responses are systematically guided by

data and can promptly address any resurgence of inter-regional inequality.

B. Limitations and Suggestions

This study is subject to several limitations that need to be acknowledged. First, the analysis relies entirely on secondary data from BPS at the district/city level, namely GRDP at constant prices and total population for the period 2014–2024. Errors in measurement, revisions to data, or alterations in classification at the statistical agency may have implications for the calculated values of the Williamson and Theil Indices. Second, the use of aggregate regional data means that the study captures inequality between regions, but is unable to observe income or welfare disparities within each district/city or at the household level. Consequently, the findings cannot be interpreted directly as evidence of interpersonal inequality.

Third, the study only employs two summary measures of regional inequality, namely the Williamson Index and the Theil Index, with a descriptive-quantitative approach. While this combination is advantageous for mapping spatial patterns and decomposing contributions by district/city, it does not identify causal relationships between inequality and its potential determinants, such as sectoral structure, infrastructure, fiscal capacity, poverty, or human capital.

Fourth, the study does not explicitly incorporate spatial interaction and spatial dependence between regions in Jambi Province. The results suggest a core-periphery structure, indicating that spillover effects from Kota Jambi and

other relatively advanced districts are likely to be significant. However, these effects have not been formally modelled using spatial econometric techniques. It is important to note that the focus of this research is limited to economic inequality in terms of GRDP. This means that non-economic dimensions of regional disparity, such as education, health, infrastructure quality, or access to basic services, remain outside the scope of this research.

In light of these limitations, several suggestions can be proposed for future research. Subsequent studies are encouraged to combine the Williamson and Theil Indices with econometric models, for example panel data regressions or spatial econometric approaches, in order to identify key drivers of inter-regional inequality and to quantify the impact of fiscal, sectoral, and infrastructure variables. It is recommended that future research employ more disaggregated data, such as sectoral GRDP by district/city, labour market indicators, or household-level income and expenditure surveys, in order to establish a more robust correlation between regional inequality and micro-level welfare outcomes.

Furthermore, comparative studies that extend the spatial coverage beyond Jambi Province, such as comparisons between Jambi and other provinces on Sumatra or with the national pattern, would provide a more comprehensive understanding of the position of Jambi within the broader landscape of regional inequality in Indonesia. Researchers are encouraged to explore multi-dimensional regional inequality, integrating economic indicators with social and infrastructural indicators, so that policy recommendations

become more comprehensive. Finally, as new data and statistical tools become available, future studies should consider updating and refining the measurement of inequality in Jambi Province. This should include re-estimating the Williamson and Theil Indices with longer time spans and improved data quality. This will ensure that the monitoring of spatial inequality remains relevant for policymaking.



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