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# **Does the Indonesian Village Fund Stimulate Rural Development? Evidence from Simalungun District**

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# Dedication Page

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I dedicate this research paper to my beloved family and friends; you are my best supporters.  
Special gratitude to my supervisor and second reader for your great expertise and precious time.  
And to the kind-hearted people who are always there for me, I thank God for you all.

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## List of Acronyms and Abbreviations

APBDesa	Village Budget (Anggaran Pendapatan dan Belanja Desa)
APBN	National State Budget (Anggaran Pendapatan dan Belanja Negara)
ADD	Allocation Fund for Village (Alokasi Dana Desa)
BPD	Village Vouncil (Badan Permusyawaratan Desa)
BHP-PDRB	Tax and Retribution Share (Bagi hasil Pajak Daerah dan Retribusi Daerah)
BPS	Statistics Indonesia (Badan Pusat Statistik)
BUMDes	Village Owned Enterprise (Badan Usaha Milik Desa)
CDD	Community-Driven Development (Pembangunan Bertumpu Masyarakat)
DAK	Special Allocation Fund (Dana Alokasi Khusus)
DAU	General Allocation Fund (Dana Alokasi Umum)
DBH	Revenue Sharing (Dana Bagi Hasil)
IDR	Indonesian Rupiah
IPD	Village Development Index (Indeks Pembangunan Desa)
MoNDP	Ministry of National Development Planning (Kementerian Perencanaan dan Pembangunan Nasional/Bappenas)
MoF	Ministry of Finance (Kementerian Keuangan)
MoVDAT	Ministry of Villages Disadvantaged Areas and Transmigration (Kementerian Desa Pembangunan Daerah Tertinggal dan Transmigrasi)
MoV	Ministry of Villages, Disadvantaged Areas and Transmigration (Kementerian Desa, Pembangunan Daerah Tertinggal dan Transmigrasi)
MusDes	Village Assembly (Musyawarah Desa)
PADes	Village Original Source of Revenue (Pendapatan Asli Desa)
Podes	Village Cencus (Potensi Desa)
RPJMDesa	Village Medium-Term Development Plan (Rencana Pembangunan Jangka Menengah Desa)
RPJMN	National Medium-Term Development Plan (Rencana Pembangunan Jangka Menengah Nasional)

## **Abstract**

Since the establishment of Indonesia's Village Law in 2014, the village, as the lowest tier of regional government in Indonesia, has the autonomy to regulate its budget. A mandate of the Village Law is implementing the Village Fund program. As stated in the law, the objective of the Village Fund program is to improve the welfare and equity of village development. This research paper analyses the impact of the Village Fund on rural development in Simalungun District, in North Sumatera Province, which has significant economic potential. This empirical design relies on a difference-in-difference approach and panel data for 386 villages from 2014 to 2018. The Village Development index reflects rural development. The result indicates that Village Fund partially impacted the village development status by improving the quality of infrastructure and enhancing village government administration.

## **Relevance to Development Studies**

Village development is one of the main agendas of the Government of Indonesia. The government's seriousness regarding rural development is outlined in national development roadmaps known as "Nawa Cita" or nine goals/missions, especially in the second goal, namely to develop Indonesia from the periphery or border area and villages. This study is related to development studies since it discusses rural development. It aims to help to stimulate rural development in Simalungun District and Indonesia as a whole.

## **Keywords**

Rural development, village fund, Village Development Index, Simalungun District, difference-in-difference, first difference.

# Chapter I

## Introduction

### 1.1. Background analysis

It is essential for the central government to transfer some power and responsibilities to the regional governments for local institutions to flourish and engage in the development process (Akita and Szeto, 2000). Decentralization policy with gradual transfers of power and responsibility can improve the effectiveness and responsiveness of various levels of government (Oates, 1972; Rondinelli, Nellis, and Cheema, 1983). The objective of decentralization was to enhance state–society ties, revitalize rural development, and make community institutions more representative and accountable (Antlöv, Wetterberg, and Dharmawan, 2016). However, providing local involvement and decision-making possibilities while bringing the central government closer to the people depends on several factors. One of them is establishing a framework to encourage widespread civic engagement and a more responsive and accountable municipal government (World Bank, 2020). Community-driven development (CDD), as the World Bank has termed it, is one tool for ensuring that.

CDD programs have been implemented in several countries during the past few decades to promote local development. In developing countries, CDD is widely used to boost the economy and encourage well-being, especially for the marginalized population. Given that CDD empowers community groups to manage resources and make decisions. It can have a broad-reaching impact on poverty since it may occur concurrently in many communities and gives the community a more robust voice both within their neighborhood and with government agencies (Dongier *et al.*, 2003).

The Indonesian government passed Law No. 6/2014 on Villages, also known as the Village Law, to fill in gaps in the decentralization paradigm used in Indonesia and to formalize the ideas of CDD. The adoption of this law is considered the state's acknowledgment of the village's status as an independent and autonomous government at the lowest tier. The village now has a hybrid role as a self-governing community and local self-government, and this law increased their authority in regulating their level of development (Antolov *et al.*, 2016).

The Village Law provides source funding for community governance, one of which is called Dana Desa or the Village Fund, and villages have been receiving this fund since 2015 to support the autonomy of the village. The Village Fund program is a community-driven development program in the form that is now being implemented. This Village Fund program is the implementation of one of the national development roadmaps known as “Nawa Cita,” or nine goals or missions (Ministry of Finance, 2017). One of the goals of Nawa Cita is to develop Indonesia from the periphery or border area and villages. By fulfilling these objectives, Indonesian villages will serve as a driving force for economic growth. The Indonesian government is attempting to achieve inclusive economic growth through the distribution of money through this initiative.

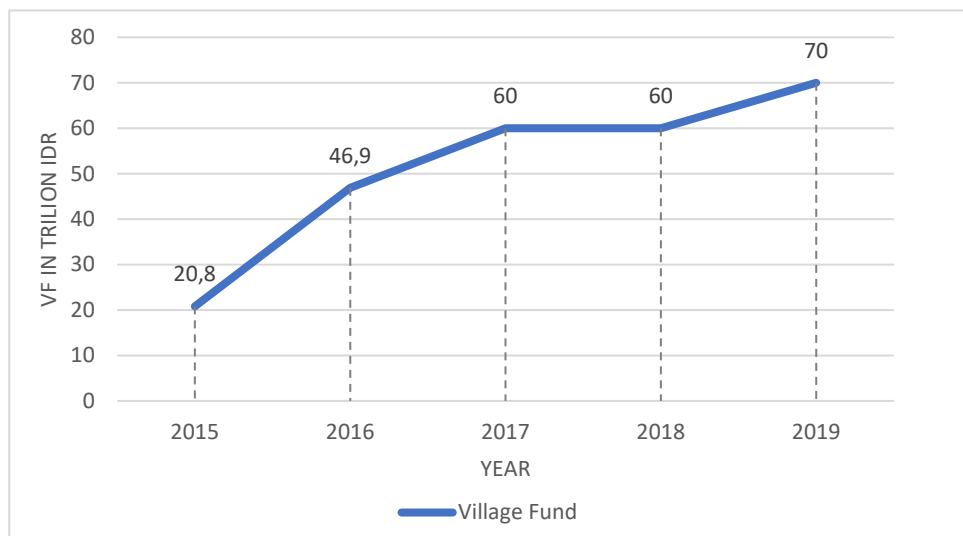
Nearly 75,000 villages in Indonesia have received a total of about 257.7 trillion IDR (about 16.7 billion USD) in village fund allocation during the first five years after the Village Law's implementation. Each village received an average of 280 million IDR (about 18,100 USD)



per village in 2015, increasing to IDR 950 million (about 61,500 USD) per village in 2020. The fundamental principle of Village Law is the recognition of the significance of the delegation of power from the central government to local governments, particularly village governments. The Village Fund initiative promotes villages as the center of development, enabling them to mold their surroundings to suit their requirements and potential. Through village development and community empowerment initiatives, the Village Fund is anticipated to have an impact on raising community welfare, enhancing community life, and lowering poverty, which in the end, will lead to rural development.

Based on data from the Ministry of Villages Disadvantaged Areas and Transmigration (MoV DAT) of Indonesia, the amount of the Village Fund budget from 2015-2019 continues to increase. The government hopes that the increase in Village Fund will be in line with an increase in the quality of its implementation and thus, rural development. Local government spending can improve basic public services, encourage regional economic growth, and reduce inequality and poverty. The increase in the Village Funds from 2015 to 2019 is shown in Figure 1.

**Figure 1**  
**Village Fund allocation per year (in trillion IDR)**



Source: Ministry of Villages Disadvantaged Areas and Transmigration (MoV DAT), 2010.

According to Article 19, paragraph 2 of Government Regulation No. 60 of 2014, the utilization of the Village Fund is prioritized for the implementation of village development and rural community empowerment. Based on the results of the policy evaluation in the 2015-2018 period, the achievement of the Village Fund output has been proven to provide benefits for rural communities through the facilities/infrastructure that have been built, as shown in Figure 2.

**Figure 2**  
**Village Fund output from 2015-2019**



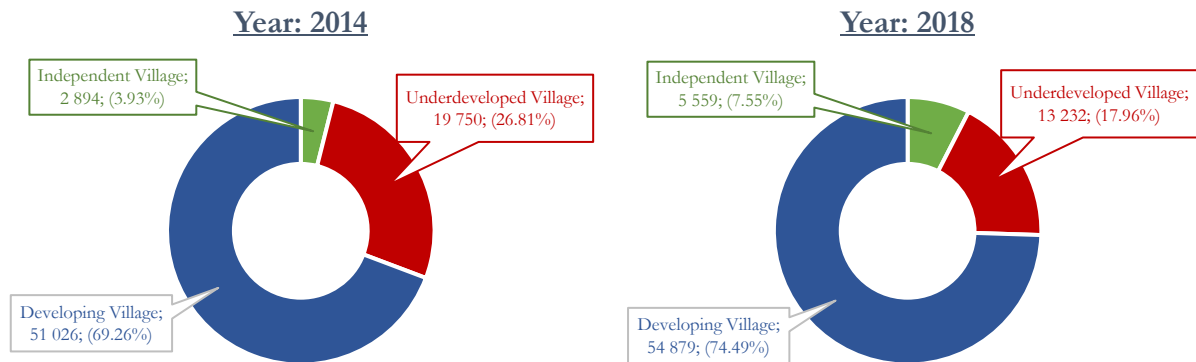
Source: MoVDAT, 2020.

The development is expected to improve the welfare of rural communities and the quality of human life as well as one of the efforts to overcome poverty following the mandate contained in the Village Law and is expected to further reduce inequality between rural and urban areas. The key to success in providing welfare for rural communities through village development is innovation, creativity, and good cooperation between the village government and village communities in realizing common goals. The village government alone cannot carry out village development, but it takes an active role in support and initiation from the community (Azis, 2016).

Based on the target to develop Indonesian villages, The Government of Indonesia uses the index to describe rural development. This index is expected can capture the village's improvement over time. One of the indices is the Indeks Pembangunan Desa (IPD) or Village Development Index (VDI), which Statistics Indonesia published. To meet the rural development goals outlined in the National Medium-Term Development Plan (RPJMN) for the years 2015 to 2019, it is essential to prepare the Village Development Index (IPD) since it is an instrument to monitor rural development. Village development has a vital position in the years 2015-2019, according to the National Medium-Term Development Plan (RPJMN) for Indonesia's government.

The government categorizes village development based on the VDI into three classifications, namely Independent Villages, Developing Villages, and Underdeveloped Villages in all Provinces in Indonesia. The 2014 VDI publication classified 2,894 independent villages, 51,026 developing villages, and 19,750 underdeveloped villages. The results show that undeveloped villages declined by 6,518, while independent villages climbed by 2,665 in 2018, which is in line with RPJMN 2015-2019. By 2019, the goal of the 2015-2019 RPJMN is to reduce the number of underdeveloped villages to 5,000 and increase the number of independent villages to at least 2,000 (Ministry of National Development Planning, 2014). Figure 3 shows the details of VDI 2014 and 2018.

**Figure 3**  
**Total village based on VDI status, 2014 and 2018**



Source: Statistics Indonesia, 2019.

Therefore, based on the background and description before, it is necessary to discuss further the impact of the Village Fund program on rural development, which is indicated by village status.

With 32 sub-districts, Simalungun District is the third-largest district in North Sumatra Province. It is strategically located in the center of North Sumatra and is home to the Lake Toba tourist destination in the Girsang Sipangan Bolon sub-district. Simalungun Regency has a significant amount of economic potential in the agricultural, plantation, and tourism industries. The economic growth at constant market prices of Simalungun was 5.15 percent in 2018 (Statistics Indonesia, 2019). Simalungun needs enough funding for its government activities and development, just like other local governments in Indonesia do, to carry out their duties properly and efficiently.

Simalungun is anticipated to advance its rural development, as evidenced by the improvement of its Village Development Index, by receiving Village Fund allocation. According to the 2018 Village Census results, developing villages continue to dominate the villages in the Simalungun District. By examining data at the village level from one district in Indonesia, this research study will concentrate on the Simalungun District to provide insightful information about the effects of the Village Fund program on village development.

## 1.2. Justification and relevance of the research

The success of the Village Fund program has been the subject of numerous evaluations by the Indonesian government through the relevant ministries. The evaluation's findings provide some details on the outputs and outcomes obtained with the help of the village funds program and any challenges encountered in their distribution and use. The government's distribution of the Village Fund from 2015 to this year has successfully improved output and outcomes at the village level. The village fund scheme is also considered to have a positive impact on raising village status and promoting local self-reliance.

Furthermore, there were positive results where the number of underdeveloped villages decreased, and independent villages increased, according to the VDI-village-status from 2014 to 2018. There is, however, currently little study examining how Indonesia's village status has evolved due to the Village Fund. Several earlier studies (Kuncoro et al., 2019; Maulana and Suryaningrum, 2019; Yulitasari and Tyas, 2020; Salsabellah, 2020, Arina, Masinambow, and Walewangko., 2021; Kharisma et al., 2021) on the impact of village funding on the village development index, both Indeks Desa Membangun or IDM (published by Ministry of Villages Disadvantaged Areas and Transmigration) and VDI, still have certain limitations. These limitations relate to the study's use of only local samples, the majority of which were at the level of a single province, using data at the district/municipality level and the absence of any control variables. This research paper investigates whether the Village Fund has affected Indonesian village development in terms of positive changes in the Village Development Index and its underlying dimensions.

Since Village Funds are given to villages, to be able to examine whether there is an impact of village funds on village development status, it is crucial to use data at the village level in order to capture village characteristics. This research will use data on the village level. However, due to data limitations, we will focus on one district, namely Simalungun District. In addition, this study is also different from other studies by using the VDI score and its five underlying dimensions as the dependent variables.

### **1.3. Research objectives and questions**

The main objective of this research is to provide information on the impact of the Village Fund on the development of village status in Simalungun District in Indonesia. Considering the background information and objective above, this research tries to address the following research questions:

1. Did the Village Fund program improve village development in Simalungun District from 2014 until 2018?
2. What are the main dimensions through which the Village Fund improves village development?

### **1.4. Contribution to the literature**

This study can contribute to the development of knowledge, especially related to the impacts of the Village Fund on the development of villages in Indonesia. We hope the findings of this paper can provide practical recommendations and policies for the Simalungun District Government, especially regarding village development and empowerment. This research can also be used as a consideration for decisions and policy-making in allocating Village Funds appropriately by taking into account the Village Development Index information of each village, especially in Simalungun District.

### **1.5. Scope and limitation**

This study examines whether the Village Fund program is an appropriate policy to improve rural development in Indonesia in the period from 2014 to 2018. The limitation of this research is that it focuses on a specific region in Indonesia: Simalungun District. Moreover, as Rondinelli et al. (1983) suggested, the five-year study period, such as that conducted in this study, is still not long enough to demonstrate the optimum impact of a decentralization program such as the Village Fund. This paper uses all 386 villages in Simalungun District from 2014 to 2018 and relies on descriptive analysis and econometric methods for panel data.

### **1.6. Structure of research paper**

This research paper is organized into five interrelated chapters. The first chapter provides the background information about the research, justification, and relevance of the research, research objectives and questions, contribution, and scope and limitation. The second chapter explores various theories as a review of the literature related to the topic of this research regarding Fiscal Decentralization, Village Fund programs, Village Development Index, Context in Simalungun District and reviews some of the previous research related to the research to be carried out, as well as the conceptual framework. The data collection, research methodology, and explanation of the variables used for the analysis will be presented in chapter three while the impact assessment results and discussion will be provided in chapter four. Finally, chapter 5 comes with some conclusions.

## Chapter II

### Background and conceptual framework

The previous chapter has explained the background of the village fund program and motivated the need to assess its impact on the rural development of villages. This second chapter will discuss fiscal decentralization, describe the Village Funds, the Village Development Index, set the context of Simalungun District, present previous research, and finally, the conceptual framework, including the main hypotheses of this study.

#### 2.1. Fiscal decentralization

Village development cannot be separated from Indonesia's decentralization policy through which the local government has a great opportunity to regionally manage their development program and policy since the central government transfers planning, decision-making, or administrative authority to the local governments (Rondinelli et al., 1983). Decentralization, it has been suggested, can be a helpful technique in assuring the quality of public service delivery because local governments have better access to information about community needs and are more accountable to the people (Pal and Wahhaj, 2017). Decentralization is designed to create some degree of regional independence. This has implications for improving people's welfare which should be the primary goal after regional autonomy and decentralization are implemented.

The delegation of authority is followed by the transfer of funding sources through a transfer mechanism to the decentralized regions. There are two forms of intergovernmental fiscal assistance or intergovernmental grants (Rosen and Gayer, 2014), which are:

##### 1. Conditional grants

Conditional Grants, which are sometimes referred to as Categorical Grants, are financial assistance whose purpose, time limit, beneficiary purpose, and rules for spending the funds have been determined from the start. Fisher (2006) divided conditional grants into two categories. First, a matching grant demands that the local government spend a set amount of money for every dollar that the central government contributes to a particular activity. In other words, it requires a change in the local government's taxes or spending patterns. Second, a non-matching grant, is a lump-sum grant to a subnational government to pay for a specific public service without altering the local government's taxes or spending.

##### 2. Unconditional grants

The use of the unconditional grant is unrestricted or with very loose restrictions. This grant is occasionally referred to as "income sharing," offers basic financial help, and is generally distributed using a formula. The donor gives the funding to support the local government's priority program and is useful for overcoming regional income disparities.

One of the fastest-growing techniques for directing grants for development is community-based development, or in recent form, community-driven development. Communities directly influence critical project decisions, such as the administration of investment funds,

in initiatives that are driven by their local communities. The term "community-based development" refers to initiatives that actively involve beneficiaries in their conception and administration (Mansuri and Rao, 2004).

A successful example of implementing Community-Based Development is the Thai Village Fund in Thailand, which started in 2001 and is still ongoing, which is the most extensive microfinance program in the world. Policies carried out by the Thai government provide microcredit to the public, and its distribution is for 78,000 villages. The positive impact of this program is increasing public financial access by providing loanable funds. Therefore the Thai Village Fund has been able to help communities to take out loans in an informal institution for improving short-term loans, consumption, agricultural investment, reducing shark loans, and increase earnings (Chandoevrit and Ashakul, 2008; Boonperm et al., 2013). Another success story of the Community Driven Development program is the Comprehensive and Integrated Delivery of Social Services Program (KALAHI CIDSS) in the Philippines, which has lasted for 12 years (2002 – 2014). The aim of this program was the improvement of rural infrastructures such as clean water systems and schools by a proportion of 50 percent, basic transportation infrastructure by 28 percent, and the rest for entrepreneurial community facilities. The evaluation shows that the program was able to increase household consumption per capita by 5 percent, labor force participation increases by 4 percent, and a 14 percent increase in sales of farmers' agricultural products (Center, 2007). With the District Poverty Initiative Program, India has seen infrastructure development and financial inclusion in six different regions, suggesting that following the program, public access and consumption have increased (Deininger and Liu, 2009). Lastly, research conducted in 55 regions in Nepal finds that the Poverty Alleviation Fund II, as a community-based development program, has been able to improve access to education and public consumption through infrastructure development (Parajuli et al., 2012).

Indonesia's government has a long history of developing rural development institutions. Before 1998, the central government had strict control over rural development. The political riot in 1998 sparked a wind of change for Indonesia's rural development. Although there were some restrictions, such as on budgets and law approval, villages had considerable authority. Since then, by implementing community-driven development, in which rural development priorities were addressed by the community, the village has also been able to raise money from local sources, block grants, and federal programs.

With the implementation of Law 6 in 2014, the Village Law, a village has a hybrid function as a self-governing community and local self-government. Since the issuance of this Village Law, villages have become the smallest autonomous regions in Indonesia. The funding for the village now comes from various resources, and the village government has more autonomy and discretion to spend the budget for administration, rural development, community empowerment, and community development.

Village development follows a decentralized pattern that produces a new paradigm for village officials, especially in managing finances, empowering village communities, and improving institutions and governance at the village level. The government's objective in issuing the Village Law is to address the weaknesses of the decentralization paradigm, including providing villages with increased budget allocations and better governance arrangements. Lessons learned from the experience of decentralization in Indonesia include the importance

of having an adequate legal basis and institutional arrangements for decentralization. Institutional arrangements must clearly define functions, roles, and responsibilities at all levels of government, on which the flow of resources is based, namely, "Money follows functions" (Antlöv et al., 2016).

## **2.2. Indonesia's Village Fund**

Indonesia is a large country with a population of 270 million, the fourth largest in the world. Statistics Indonesia predict that as much as 43.3 percent of Indonesia's population lives in villages in 2020. Each village has its specific characteristic seen from the quality of human resources, natural resources, population, social and economic conditions, education level, and income level.

By introducing the paradigm of "Building Indonesia from the Periphery," rural development is one of the top priorities of the Indonesian government's national development. The government's acknowledgment of the villages' status as autonomous regions is reflected in the Village Law.

Based on the Village Law, a village's sources of income include the village's own-resource revenue (PAD), transfers from central government, revenue sharing fund of regional taxes and regional retributions of district/municipality, allocation funds for the village (ADD), financial assistance from the provincial budget (APBD Provinsi) and district/municipality budget (APBD Kabupaten/Kota), grants and donations from third parties, and other legitimate village income.

Statistics Indonesia explains those village revenues in the Financial Statistics of Village Government report (2019). Village Own-Source Revenue is the amount of money that village governments receive that is based on the origin and scale of the village and its surroundings, Village operations-related income includes asset-related income, participation, and assistance from other rural communities. Another source of village revenue is transfers from the central government, which are revenues from the central government budget (APBN) that are allocated through the district/municipality budget (APBD Kabupaten/Kota) to the village government. The Village Fund is such a transfer. Next, the revenue sharing fund is derived from the local taxes portion of the retribution share from the village's commercial and noncommercial activities of the village. Furthermore, allocation funds for villages (ADD) is part of the fund received by the district/municipality where the proportion is at least 10% of the Sharing Fund Results and General Allocation Funds (DBH and DAU). According to the village's financial capacity, the province and district/municipality may provide financial assistance to the village government. The last source of villages' revenue is grants, distributed independently of village government initiatives. This funding may come from the central government, a province, a district/municipal government, agencies, institutions, or community organizations, and included in Other Revenues.

Village Fund is the name of one of the initiatives the Indonesian government supports financially to develop rural villages. In 2015, this community-driven development program was launched. Through the Village Law, the village has strengthened its authority in



administering governance, implementation of development, community development, and empowerment of villagers (Ministry of Finance, 2019). The Village Fund program does not only provide financial flexibility for the community in carrying out government and development. Still, it can also encourage development in the village, both physically and build human interaction and dialogue in it (building villages). The Village Fund also activates the ability of village communities and empowers communities to carry out development independently according to the needs and preferences of rural communities.

Village Funds are national state budget (APBN) funds that are intended for villages transferred through the district/city APBD and prioritized for the implementation of development and village community empowerment (Statistics Indonesia, 2019). Its aim is to improve public services in the village, eradicate poverty, promote the rural economy, address development gaps between villages, and strengthen the rural community as development subjects (Ministry of Finance, 2019). Moreover, in Government Regulation number 60 of 2014, the Village Fund is prioritized for the benefit of village development. Therefore, based on the explanation of Rosen and Gayer (2014), the Village Fund is classified as a matching grant because the purpose and rules for using the funds have been determined beforehand.

Based on the Village Law, the budget allocation is sourced from central government Expenditures by streamlining programs based on the principle of equity. The amount of the budget allocation, provisions on the management, and determination of the details of village funds are regulated in the ministry of finance regulations. The allocation formula includes a 90% basic allocation which is equal across villages, while the remaining 10% is a formula allocation, determined by several village-level attributes, particularly population, number of poor people, village area, and geographic difficulty index/construction cost index.

In 2018, the government adjusted the allocation formula. The Basic Allocation reaches 77% and adds a 3% affirmation allocation for underdeveloped and very underdeveloped villages. The remaining 20% is again determined by several village-level attributes.

The total budget for the Village Fund has tended to rise since it was awarded from 2 trillion IDR in 2015 to 70 trillion IDR in 2019 (Table 1). The average amount received per village also increased, rising from 280 million IDR in 2015 to 933 million IDR in 2019. Additionally, from 74,093 villages in 2015 to 74,954 villages in 2019, more villages are now receiving village funds. An increase in the allocation of the Village Fund complies with the Village Law requirement, which is set at 10% of regional transfers (Ministry of Finance 2019).

**Table 1**  
**Actual revenue of village government throughout Indonesia, 2014-2018**  
**(In billion rupiahs)**

	2014	2015	2016	2017	2018
<b>REVENUE</b>	<b>26,663.87</b>	<b>72,817.30</b>	<b>82,311.84</b>	<b>100,240.29</b>	<b>102,128.11</b>
1. Original Local Government Revenue	4,229.92	4,220.57	3,535.28	3,097.42	3,475.03
2. Transfer Revenue	21,304.54	68,146.98	78,304.08	96,651.29	97,958.64
2.1. Village Fund	0	20,766.20	45,612.68	57,560.79	56,902.92
2.2. Tax and Retribution Share	912.56	1,672.97	2,042.11	2,465.75	3,002.81
2.3. Village Allocation Fund	10,242.39	22,846.74	26,372.11	30,507.06	31,823.03
2.4. Financial Assistance	10,149.59	22,861.07	4,277.18	6,117.69	6,229.88
3. Other Revenues	1,129.41	449.75	472.48	491.58	694.44

Source: Statistics Indonesia, various years.

Village funds as a source of village income are managed following the principles of village finance management. The management of the village's finances is supposed to be transparent, accountable, and democratic, and done in a systematic and budgeting disciplined manner (Ministry of Finance, 2017). Planning, implementation, administration, reporting, and accountability are all parts of village finance management. At the planning stage, the village officials cooperate with the village council to prepare a Village Regulation Draft on the village budget and priorities for the use of village funds which will be determined in village meetings between the village council, village officials, and elements of the community. This stage is part of the mandate of the village law, where this law acknowledges the community members' right to participate in village affairs and the duty of the village administration to make sure that everyone benefits from local resources, such as through taking part in village forums. At this stage, the needs and preferences of rural communities are fully considered, which is the implementation community-driven development program. The village treasurer is responsible for carrying out administrative functions and reporting back to the village head. Finally, the village chief is responsible for reporting to the Regent/Mayor each semester on the status of the village budget's execution.

Although it was a fundamental aspect of the program that the funds provided were owned and managed by communities, it was also acknowledged that due to their limited technical capacity and the degraded state of their social capital at the time, they required significant technical and social support. A need for those support on the project is met by providing facilitation. The Village Law mandates that facilitators be appointed to assist village administrations and populations in organizing, carrying out, and monitoring village development initiatives (Article 112). Technical requirements are completed, district and village projects are coordinated, and community projects are accurately reported in government statistics attributable to facilitators.

During the period 2015-2019, the use of village funds has resulted in achievements that support the rural economy and improve the quality of life of rural communities through the development and improvement of infrastructure and facilities in the village. The government, through the Ministry of Villages Disadvantaged Areas and Transmigration, claims that through the use of village funds between 2015 and 2019, the number of poor people in the

village decreased from 17.89 million in 2015 to 14.93 million in 2019, and the percentage of poor people in the village decreased from 14.09 percent in 2015 to 12.60 percent in 2019. The government also claims that the number of villages with the status of independent villages increased from 173 villages in 2015 to 824 villages in 2019 and that the percentage of villages with poor people decreased from 14.09 percent in 2015 to 12.60 percent in 2019 (Ministry of Villages Disadvantaged Areas and Transmigration, 2020).

Lewis (2015) contends that the Village Fund allocation methodology is ineffective due to shortcomings. First, there is a flawed process in which the basic allocation dominates the Village Fund formulation, while the formula allocation, which takes into account the unique characteristics of each region, receives only a tiny amount, namely 10%. As an archipelagic nation, Indonesia unquestionably exhibits tremendous heterogeneity, with each island having a distinct geography. Second, in the budgeting process, the Village Fund ignores other sources of income for the village governments. By using logistic regressions, Lewis's study found that a district/municipality will receive a larger share of the Village Fund when it has a more significant number of villages and a larger village fiscal capacity. Obviously, this result indicates the Village Fund allocation inequity. KOMPAK and the Ministry of National Development Planning (2017) confirmed Lewis' findings. They argue that the formula for allocating village funds results in an unequal distribution of funds between regions. Moreover, it is unfair when it is related to the need for village funds to overcome poverty problems and increase access of the poor to public services.

Although Lewis (2015) and KOMPAK and the Ministry of National Development Planning (2017) argue that there is ineffectiveness in formulating and budgeting, the Village Fund policy has become the most extensive village-based rural development program from the central government compared to other similar programs. Therefore, the Village Funds need to be allocated and managed effectively in order to accelerate welfare improvements, promote rural communities' economy, and overcome development gaps.

### **2.3. Village Development Index**

The Indonesian government, including the central government, regional governments, and other stakeholders in the implementation of development, uses the National Medium-Term Development Plan (RPJMN) as its official reference. One of the development goals, particularly for village development in 2015-2019 RPJMN, is to increase the number of independent villages by at least 2000 villages and to decrease the number of disadvantaged villages by 5000 villages by the year 2019 (Ministry of National Development Planning, 2014). Accordingly, to achieve the target of rural-based development, it is necessary to consider the socio-cultural characteristics of the people living in rural areas. A strategy to narrow the urban-rural development gap is the implementation of rural development.

The enactment of the Village has elevated villages to a position of development importance. However, both the central and regional governments claim that many village development initiatives still don't meet the needs of rural communities because there isn't enough knowledge about the circumstances and requirements of Indonesian villages and because

village development initiatives in Indonesia haven't been based on a standardized reference (Ministry of National Development Planning, 2014).

The Village Development Index (VDI) is intended to give a clear picture of the current state of development in every village in Indonesia, which offers a baseline for monitoring the rate, quality, and requirements of village development (Ministry of National Development Planning, 2014). The index can capture the improvement in the village over time. The VDI aims to be an instrument of providing information for village development actors to be able to implement effective policy interventions in an effort to improve village development. In addition, it is a tool to monitor and assess village development performance in meeting the National Medium-Term Development Plan targets.

The dimensions and variables that compose the VDI are based on a synthesis of the Village Census and Village Law. Using data from the Village Census as a guide for the primary indicators that make up the index, consequently, this index is created by referring to the Village Law. One article in Village Law states that there are at least four aspects that need to be fulfilled to achieve village development, namely: basic needs, basic services, environment, and empowerment activities for the village community. In the explanation section of the law, basic needs are defined as an effort to meet the needs of food, clothing, and housing. Meanwhile, basic services include education, health, and basic infrastructure. In another article of the Village Law, the objectives of village development are stated to be community welfare, quality of life, and poverty reduction. These objectives can still be accomplished through basic needs, facilities, infrastructure, rural economic development, and sustainable utilization of villages' natural resources.

The results of the synthesis are that the VDI can be decomposed into five dimensions adjusted to the availability of data/variables in the village statistics: 1) Basic Services, 2) Infrastructure Conditions, 3) Accessibility/Transportation, 4) Public Services, and 5) Administration of Village Governance. Basic Services are components of basic services that help fulfill some of the most fundamental requirements, particularly those related to health and education. The dimension of Infrastructure Conditions represents the basic needs of facilities and infrastructure as well as the development of the local economy and the natural resources available in the village. With the recognition that transportation facilities and infrastructure have specificities and priorities in rural development as a linkage for socio-economic activities in the village, Accessibility/Transportation is a separate dimension in village development indicators. Dimension of Public Services is an initiative to meet service demands for products, services, and administrative services with the goal of enhancing social cohesion, environmental protection, democracy, and other goals. Finally, the dimension of Government Administration represents an indication of village government performance. These five VDI dimensions can be further divided into 12 variables and 42 underlying indicators, as described in Table 2.

**Table 2**  
**List of dimensions, variables, and indicators of the Village Development Index and each weight**

Dimension (weight)	Variable (weight)	No	Indicator	weight
Basic Service (0,326)	Education (0,098)	1	Availability and access to Early age education	0,0227852
		2	Availability and access to Primary education	0,0115521
		3	Availability and access to Junior High school	0,0320783
		4	Availability and access to Senior High school	0,0317407
	Health (0,228)	5	Availability and access to hospital	0,0271630
		6	Availability and access to the maternity hospital	0,0258106
		7	Availability and access to the public health center	0,0310473
		8	Availability and access to the clinic	0,0308963
		9	Availability and access to doctor's office	0,0325841
		10	Availability and access to a midwife	0,0299338
		11	Availability and access to village public health center	0,0252111
		12	Availability and access to pharmacy	0,0253566
Infrastructure Quality (0,252)	Economic Infrastructure (0,094)	13	Shop/minimarket availability	0,0196165
		14	Market availability	0,0179773
		15	Restaurant/Diner availability	0,0152138
		16	Hotel/Inn availability	0,0186228
		17	Bank availability	0,0229853
	Energy Infrastructure (0,051)	18	Electrification	0,0140417
		19	Main road lighting	0,0188277
		20	Fuel for cooking	0,0177782
	Clean water and sanitation (0,074)	21	Drink water source	0,0299481
		22	Washing water source	0,0301380
		23	Toilet Facility	0,0137127
	Communication and Information (0,033)	24	Availability and quality of mobile communication facility	0,0160403
		25	Availability of internet and postal/good delivery	0,0172964
Transportation (0,204)	Means of Transportation (0,117)	26	Traffic and road quality	0,0174274
		27	Road accessibility	0,0149853
		28	Public transport availability	0,0426582
		29	Public transport operation	0,0422595
	Transportation accessibility (0,086)	30	Travel time per kilometer of transportation to the sub-district office	0,0177129
		31	Cost per kilometer of transportation to the sub-district office	0,0280166
		32	Travel time per kilometer of transportation to the district office	0,0142172
		33	Cost per kilometer of transportation to the district office	0,0264609
Public Service (0,109)	Public health (0,040)	34	Handling extraordinary events	0,0195116
		35	Handling of malnutrition	0,0209339
	Sports (0,069)	36	Availability of sports facility	0,0334978
		37	Sports group availability	0,0351981
Administration of Village Government (0,109)	Autonomy (0,062)	38	Completeness of village governance	0,0260184
		39	Village autonomy	0,0163094
		40	Village assets	0,0198562
	Human resources quality (0,047)	41	Human resources quality of the Head of the village	0,0186415
		42	Human resources quality of Village Secretary	0,0279371

Source: Statistics Indonesia, 2019.

VDI is thus a composite weighted index comprising 42 factors that, taken collectively, substantially define the state of village development. Each indicator's contribution to the

total describes how impactful that indicator is on the dimensions and VDI. Each indicator that constructs the village development index, following the answer on the village census, will be scored from 0 to 5. The VDI value is obtained from the weighted addition of each VDI compiler indicator. The summed value is the score of each indicator that has been weighed/multiplied by the weight of each indicator. The formula for VDI calculation, as stated in the Statistics Indonesia publication (2019), is as follows.

$$VDI = (b_1 * V_1 + b_2 * V_2 + b_3 * V_3 + \dots + b_{42} * V_{42}) * 20 \quad (2.1)$$

where:

VDI is a score for each village ranging from 0 – 100,

v is the score for indicators, and

b is the weight applied for the indicator.

The 42 underlying indicators that build up the five dimensions describe how easily accessible and available services are in rural areas. The central government, local governments, and village governments can carry out development by paying attention to the various conditions described in each indicator, specifically by giving priority and selection to efforts to improve public services related to indicators that are still of low quality and deemed necessary.

The index value of VDI has a range of 0 to 100. To facilitate the interpretation, the villages are grouped into three groups categories, namely independent villages, developing villages, and underdeveloped villages (MoNDP, 2015). An Independent village is a village that has the availability and appropriate access to adequate basic services, adequate infrastructure, easy accessibility transportation, good public services, and good governance. Technically, an independent village is a village with a VDI value of more than 75. A village is considered a developing village if it has availability and access to basic services, infrastructure, accessibility transportation, public services, and adequate governance. A developing village is defined by a VDI score of more than 50 but less than or equal to 75. Disadvantaged villages are villages that have minimal availability and access to basic services, infrastructure, accessibility/transportation, public service, and governance, defined by a VDI score of less than or equal to 50.

The 2014 VDI publication maps village development by classifying 2,898 independent villages, 50,763 developing villages, and 20,432 underdeveloped villages. To find out the progress of village development from 2014 and 2018, Statistics Indonesia reduces the assumption of expansion and merger of villages. They account for village divisions and mergers from 2014 to 2018 to provide consistent data on the number of villages in those years. This yields a 2014 and 2018 panel of 73,670 villages. The results by Statistic Indonesia show that the underdeveloped villages decreased by 6,518 to 13,232 villages; the independent villages increased by 2,665 to 5,559 villages, and the remaining 54,879 are developing villages.

## 2.4. Context of Simalungun District

Simalungun District located in Nort Sumatera Province in Indonesia. It is the third largest district in the province of North Sumatra, covering an area of 4,372.5 km<sup>2</sup>. Due to its advantageous location in the province's center and its well-known tourism potential,

particularly in Parapat on the shores of Lake Toba, this area naturally has significant economic potential.

Simalungun's economic potential is primarily concentrated in the agricultural, plantation, and tourism industries. Food crops and horticulture have the potential to be significant contributors to the agricultural sector in Simalungun. As for the plantation industry, it contributed through the production of rubber, palm oil, coffee, tobacco, and tea. The area around Lake Toba, Indonesia's largest lake in Parapat-Simalungun, has a potential for tourism that is known across the world. The lack of suitable facilities and infrastructure is one of the reasons that this tourism potential has yet to be fully developed (Dinata and Hidayat, 2015).

Simalungun has 386 villages and 27 urban precincts. As a local government, every village needs enough funding for its government activities and development, just like other local governments in Indonesia, in order to carry out their duties properly and efficiently. We can see the Simalungun village's Revenue for each year from 2014 until 2018 in Table 3, and the Village Fund is an essential source of funding for village governments. After the introduction of Village Funds in 2015, the village's revenue increased three times from 2014 to 2015 and has continued to increase since then.

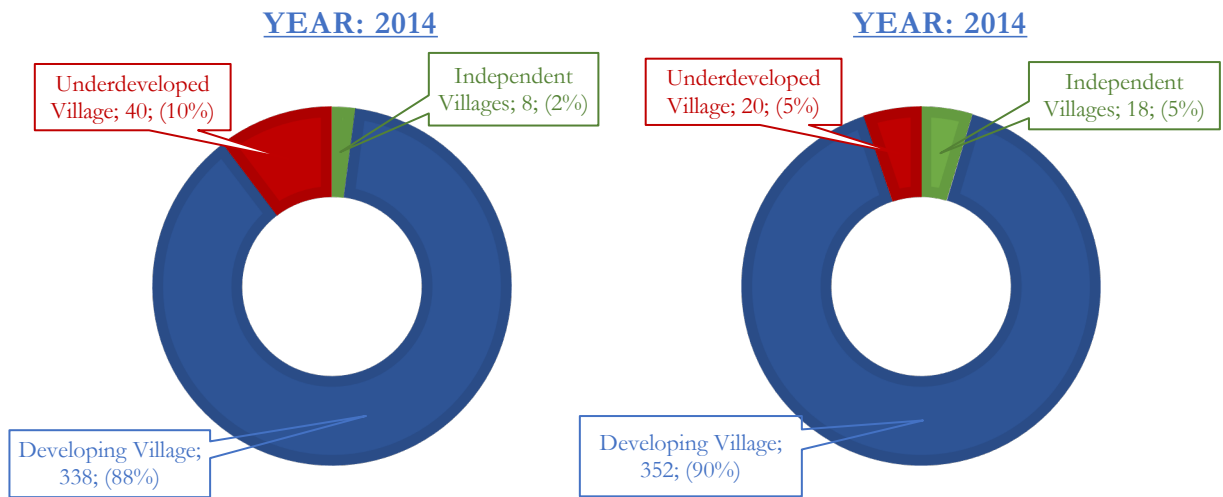
**Table 3**  
**Actual revenue of village government in Simalungun District, 2014-2018**  
**(In million IDR)**

	2014	2015	2016	2017	2018	2019
<b>REVENUE</b>	<b>42,520.61</b>	<b>150,031.68</b>	<b>311,774.20</b>	<b>409,303.45</b>	<b>380,451.78</b>	<b>419,156.23</b>
1. Original Local Gov. Revenue (PAD)	16.81	0.00	0.00	0.00	51.87	91.54
2. Transfer Revenue	42,082.90	150,031.68	311,774.20	408,426.99	377,038.23	416,512.97
2.1. Village Fund (VF)	-	102,699.81	230,404.78	294,047.54	259,242.61	294,442.20
2.2. Tax and Retribution Share (PDRB)		6,785.71	3,612.10	114,379.45	0.00	6,256.88
2.3. Village Allocation Fund (ADD)	16,294.17	19,678.10	77,104.30	0.00	117,795.62	115,587.45
2.4. Financial Assistance	25,788.73	20,868.06	653.02	0.00	0.00	226.44
3. Other Revenues	420.90	0	0	876.46	3361.68	2551.72

Source: Statistics Indonesia, various years.

By receiving Village Fund allocation for every Simalungun District village, it is anticipated to advance its rural development, as evidenced by the improvement of its Village Development Index. As was stated in the preceding sub-chapter, the VDI value will eventually be utilized as the foundation for categorizing village statuses into independent, developing, and undeveloped. Figure 4 depicts village classification based on its VDI in Simalungun District, which shows that developing status continues to dominate. This study aims to assess the causal relationship between the Village Fund program and the VDI score of the villages in Simalungun District.

**Figure 4**  
**Village development status in Simalungun District, 2014 and 2018**



Source: Statistics Indonesia, 2019.

## 2.5. Relevant literatures review

Numerous studies have found that community-driven development programs from the government are necessary to enhance rural community living standards and provide resilience amid hard economic times by improving infrastructure, access to education dan public consumption, as well as microcredit assistance. (Boonperm et al., 2013; Center, 2007; Chandoevvit and Ashakul, 2008; Deininger and Liu, 2009; Parajuli et al., 2012). The Village Fund program is the latest CDD program in Indonesia.

Since the distribution of Indonesia's Village Fund in 2015, one of the main concerns has been the allocation formulation. Lewis (2015) suggested that the government take into account the villages' heterogeneity and other sources of village revenue to make the distribution of the Village Fund more equal. He also emphasized the importance of a transparent public financial management system in villages, monitoring and controlling village spending and defining clear village service responsibilities.

Many previous studies assess the effect of the Village Fund program on villages' social and economic development. Good management and utilization of village funds contribute significantly to the village's development. Aziz (2016), who studied village autonomy and the effectiveness of village funds, discovered that there were obstacles in the distribution and utilization of the Village Fund, which were caused by the village government's lack of capability and human resource capacity and the village community's inactivity. A study by Arifin et al. (2020) attempted to find empirical evidence regarding the impact of the Village Fund and village-owned enterprises (BUMDes) using primary data and difference-in-difference estimation methods. They found that Village Fund implementation tends to increase the number of BUMDes. However, their research did not find any correlation



between Village Fund and BUMDes on rural employment opportunities. The latest study by Hartojo et al. (2022) discovered that the implementation of the Village Fund significantly increased rural economic growth in Indonesia's underdeveloped villages. To describe the economic growth at the village level, their research utilizes an interesting proxy, a night time light (NTL) dataset in an underdeveloped village.

Other studies analyze the relationship between the Village Fund and the state of village development. Most studies use data on the district/municipality levels in one province. The Village Fund played a favorable influence on the village status of a single sub-district or district, according to research limited to a single region (Arina et al., 2021; Gani et al., 2020; Tambunan et al., 2020). Yulitasari and Tyas (2020) discovered that an increase in the amount of the Village Fund received by communities in Central Java Province had no significant effect on changes in village status. However, Salsabelah (2020) indicated that the allocation of village finances in the province of West Java positively affected physical and non-physical village development, consequently raising the VDI score.

According to some earlier studies on the Indonesian Village Fund program, there is still little information available on how the Village Funds have affected Indonesian village development status. Indeed, the program is considered to have succeeded in increasing facilities and infrastructures that support village economies and village communities' quality of life since the distribution of the Village Fund in 2015 (Ministry of Villages Disadvantaged Areas and Transmigration, 2020). In addition, based on VDI status, the village's condition has improved from 2014 to 2018. Some research that discusses the effect of the Village Fund on the village development/progress index still has limitations regarding the sample sizes and the independent variables used. Moreover, specific studies focusing on the causal analysis of the Village Fund's impact on VDI is limited. Therefore, this research paper aims to assess the impact of the Village Fund on the development of village status using the village dataset in Simalungun District. This development is seen from the increase in the village status level, shown by the Village Development Index score.

## **2.6. Conceptual framework**

The Village Fund program is expected to affect the village's development status. It may be too early to assess the full impact of how the Village Fund has affected village development status, but there are early indicators that can determine whether the project is on track to achieve the rural development goals.

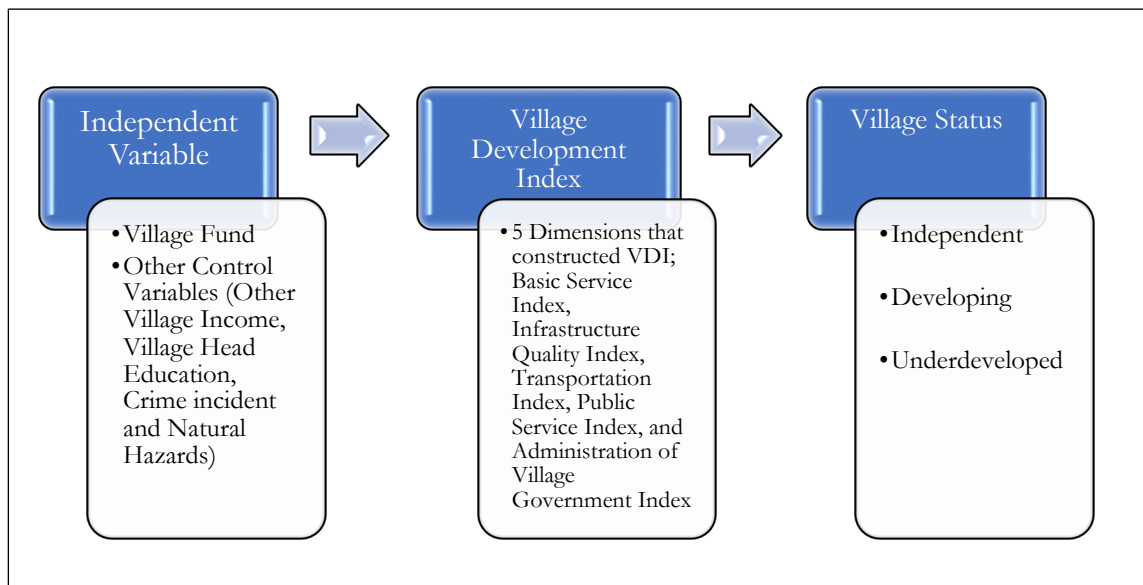
In the context of Village Law, the central government commits to acknowledging the village's autonomous status. Its implementation through the Village Fund program is a government initiative designed to promote the welfare and standard of living of people living in rural areas, thus improving village development by providing block grants to every village. One of the approaches used by the government to identify rural development is the Village Development Index published by Statistics Indonesia.

Correspondingly, the central, regional, and village governments can carry out development by paying attention to the various conditions described in each indicator. Specifically, they

can do this by prioritizing and choosing to improve public service efforts related to indicators that are still of low quality and deemed necessary.

Therefore, based on the explanation in the literature review, including the previous empirical evidence, the conceptual framework that shows the impact of the Village Fund program on village development status proposed in this study is as follows:

**Figure 5**  
**Conceptual framework**



Source: own identification.

The conceptual framework above depicts that the Village Fund variable and other control variables such as other village income, village head education, and geographical difficulty index affected five dimensions that construct the Village development Index (VDI). The purpose of this study is to evaluate how the Village Fund program has affected the growth of village status in Simalungun District. The term "impact" in this context denotes a causal relationship and necessitates a comparison of the observed and counterfactual results (White, 2010). The hypothesis for this research is that the Village Fund's existence has positively impacted the advancement of village development status. The outcome of interest in this development village status is the score of the Village Development index and the five dimensions that built it, namely Basic Service Index, Infrastructure Quality Index, Transportation Index, Public Service Index, and Administration of Village Government Index.

## Chapter III

### Research methodology

This research is an empirical study that tries to obtain evidence of the impact of the Village Fund on village development in Simalungun District, expressed as an increase in the Village Development Index. This chapter will describe the research methods that will be used in estimating the effect of the Village Fund on the VDI. The first sub-chapter will begin with the methodology, which includes the research model. To complete this chapter, there is a discussion of the data and variables used according to the research model in the last sub-chapter. This analytical method is quantitative by using secondary data.

#### 3.1. Methodology

Identifying changes over time in the main outcomes, such as the VDI, that can be linked to the Village Fund program is the main objective of the empirical analysis in this research paper. The main challenge to attaining that objective is that the Village Fund was not allocated randomly due to pro-poor targeting. To account for subsequent selection bias, this study employs a Difference-in-Difference (DID) approach. Between units that are participating in a program (the treatment group) and those that are not (the comparison group), DID compares the changes in outcomes over time. By doing this, we can “clean” any initial differences between the treatment and comparison groups that remain constant throughout time (Getler et al., 2016).

The DID estimation in this research compares outcomes before and after the implementation of the Village Fund program (2014 and 2018, respectively). The causal interpretation is based on the parallel trend assumption that in the absence of the program, the treatment outcome would have developed in the same way as the control group. Any changes in differences for treatment and comparison outcomes before and after the program intervention can then be attributed to the treatment effect. Since the Village Fund allocation formula is known and based on observed pre-intervention criteria, we can rule out other unobserved confounding factors, justifying the parallel trends assumption.

The second challenge is that the Village Fund is implemented in all Indonesian villages. As a result, there is no pure control group that did not receive funding. This challenge is resolved by taking Village Fund per capita. The amount received by villages is mainly determined by the Basic Allocation, which was equal across villages. Since villages differ significantly in size, this provides variation in the amount per capita that can be used for identifying the effects of the program.

This study uses panel data with the VDI score as the dependent variable. To accommodate changes in conditions relating to the implementation of the Village Fund, two time periods were considered: 2014 to reflect circumstances one year prior to the government's implementation of the Village Fund ( $t=0$ ), and 2018 to reflect the post-implementation period ( $t=1$ ).

The empirical model to estimate the development of VDI values in this research is:

$$Y_{it} = \alpha + \beta VF_{it} + \gamma X_{it} + \delta_i + \theta_t + \varepsilon_{it} \quad (3.1)$$

Where:

$Y_{it}$	= Village Development Index score
$VF_{it}$	= Village Fund allocation per capita per village
$X_{it}$	= Control Variable
$\alpha$	= Intercept
$\beta$	= Treatment effect
$\delta_i$	= Individual fixed effect
$\theta_t$	= Time fixed effect
$\varepsilon_{it}$	= Idiosyncratic error specific to individual and time
$i$	= villages in Simalungun District (386 villages)
$t$	= time (2014 and 2018)

The fixed effect reflects the source of bias from non-random targeting in equation 3.1. This is removed by first differencing the dependent and independent variables.

$$\Delta Y_{it} = \beta \Delta VF_{it} + \gamma \Delta X_{it} + \theta_{2018} + \Delta \varepsilon_{it} \quad (3.2)$$

where:

$\Delta Y_{it}$	= $Y_{i,2018} - Y_{i,2014}$
$\Delta VF_{it}$	= $VF_{i,2018} - VF_{i,2014} = VF_{i,2018}$ , where the pre-intervention $VF_{i,2014} = 0$
$\theta_{2018}$	= the “new” intercept reflecting the time trend of the control group

Model (3.2) is then estimated by the mean of OLS (with the help of the Stata/MP 15.0).

### 3.2. Data and descriptive analysis

The main benefit of using panel data with multiple years of data is that we can control for unobserved characteristics that do not change over time, which is useful for policy analysis (Wooldridge, 2016). Panel data can afterward provide more information, more variety, less collinearity, a more significant degree of freedom, and more efficiency (Gujarati, 2009).

The sources for the panel data for this study are mainly from Statistics Indonesia (BPS): The Village Census (Podes) of 2014 and 2018, the Village Development Index Books for 2014 and 2018, and the Village Government Financial Statistics from 2015 until 2019. These data can be found on Statistics Indonesia’s website at <https://bps.go.id>. Another crucial data source is the Village Fund per capita from the Ministry of Finance and the Government of Simalungun District.

The Village Fund benefits every village, and by default, every village population. Therefore, using data at the village level as the unit analysis is the optimal scenario for doing research on the Village Fund program. The unit analysis of this research contains data from all villages that received village funds for both 2014 and 2018.

The variables used in this research are as follows:

**Table 4**  
**List of variables**

<b>Variables</b>	<b>Descriptions of Variables</b>	<b>Source</b>
<b>Dependent</b>		
Village Development Index	Index score that describes the development level of the village at a time.	Village Development Index Book
Basic Service Index	Index score specifically for basic service	Village Development Index Book
Infrastructure Quality Index	Index score specifically for Infrastructure Quality	Village Development Index Book
Transportation/ Accessibility Index	Index score specifically for Transportation Infrastructure Quality	Village Development Index Book
Public Service Index	Index score specifically for public service	Village Development Index Book
Administration of Village Government Index	Index score specifically for Village Gov. Administration.	Village Development Index Book
<b>Independent</b>		
Village Fund Allocation	Village Fund allocation per village in Simalungun District per capita (in million IDR)	Ministry of Finance and Government of Simalungun District
<b>Control variables</b>		
Other Village Revenue	Total Village Revenue other than Village Fund (in million IDR)	Village Gov. Financial Statistic and Government of Simalungun District
Village Head Education	Year of schooling of Village Head	Village Census
Crime	Number of crime incidents	Village Census
Natural Hazard	Number of natural hazards incidents	Village Census
Year	2014, 2018	
Villages	386 villages	

Source: own compilation.

The outcome variable used to describe the status of village development is the VDI score, as well as the five dimensions that make up VDI, to assess through which dimensions the Village Fund program influenced village development. Since the VDI score can capture the improvement over time in the villages, the development of village status can be observed in the increase in the VDI score.

The main independent variable in this study is the Village Fund allocation per capita for each village. By dividing the cumulative village transfer (from 2015 to 2018) received by the projected village population, the per capita amount of the village fund was calculated.

The control variables consider factors that might also influence village development, such as other village revenues, education of the village head, crime, and natural hazards. Other-village-revenue is the total village revenue apart from the Village Fund, which includes village own-source revenue, village operations-related income, the revenue sharing fund, ADD, financial assistance from province and district governments, and grants. The village government uses its revenue to finance the village government expenditure. Thus, this spending is expected to improve village development. Village revenue is expressed in millions IDR.

To support the effectiveness of village funds, it is necessary to increase the capacity of village heads. Several studies argue that the Village Fund management has been successful due to adequate management capacity (Aziz, 2016; Yulitasari and Tyas, 2020). Furthermore, Hardwickfranco (2021) argues that leaders at the village level bear the responsibility to support their communities in dealing with complex and varied impacts. The village head education variable is expressed in years of schooling based on the education level reported by the village head in the village census.

Crime incidents and natural hazard incidents will also affect village development. Some research finds that high crime rates and poor security conditions impact economic development (Detotto and Otrando, 2010; Estrada and Ndoma, 2014; United Nations, 2019; Zet, 2022). Furthermore, Kulatunga's (2010) research in Indonesia on the effects of volcanoes demonstrates the significance of minimizing catastrophe risk in rural areas for sustainable development. In this study, the crime and natural hazard variables show the number of crime and disaster incidents in each year of study.

**Table 5**  
**Summary statistics**

Variables	2014					2018				
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
<b>Dependent Variable</b>										
Village Development Index	386	60.52	8.22	31.62	83.36	386	62.49	7.38	39.49	83.86
Basic service index	386	61.39	14.63	5.63	94.83	386	61.19	14.03	4.66	91.93
Infrastructure quality index	386	49.90	9.65	23.82	78.33	386	51.32	8.88	6.15	86.32
Transportation/accessibility index	386	80.48	13.21	48.48	100	386	81.02	14.24	44.40	100
Public service index	386	48.05	11.51	19.18	100	386	50.41	13.10	21.71	100
administration of village gov. index	386	57.71	10.49	21.01	85.84	386	69.49	6.34	44.28	89.05
<b>Independent Variable</b>										

Village fund per capita in a million IDR	386	0	0	0	0	386	1.77	1.27	0.23	10.25
other village income in a million IDR	386	192.44	26.68	130.40	318	386	283.31	29.03	204	422.13
Village head education (years)	386	5.24	0.81	1	9	386	5.39	0.81	4	8
Crime incident	386	1.80	2.26	0	13	386	2.84	2.66	0	14
Natural hazard incident	386	1.19	2.62	0	20	386	1.39	3.10	0	24

Source: own identification.

As shown in table 5, the VDI increased on average from 2014 to 2018, indicating that village development improved within the study's timeframe. The average Village Fund transfers per capita were about 1.8 million IDR but varied greatly between villages in the Simalungun district (ranging from 0.2 to 10.3 million IDR). Other village income increased substantially from 2014 to 2018. The table also shows an increase in the average education of village heads, while there is also an increase in crime incidents and natural disasters.

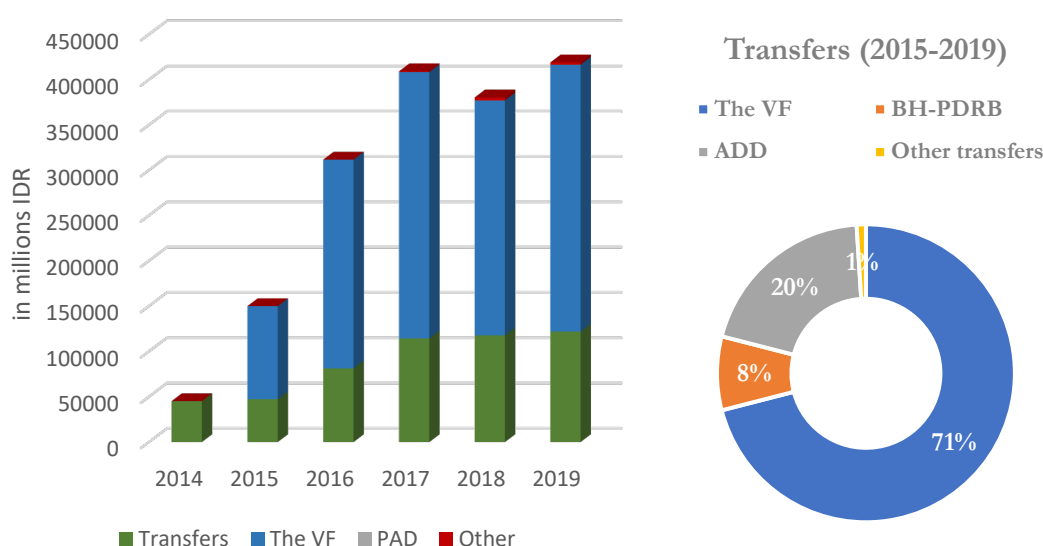
## Chapter IV

### Empirical result and discussion

#### 4.1. Trends in village income and village development in Simalungun District

Since the issuance of Village Law in 2014 and 4 years after the Village Fund implementation, there has been a substantial increase in village revenues in Simalungun (figure 6). The most intriguing aspect is that the rise in revenues relies highly on transfer funds, of which more than 70% originates from the Village Fund after 2015. The village government in Simalungun is thus highly dependent on the Village Fund for its administration and development. We can also notice that the PAD and other revenues of Simalungun's villages are negligible.

**Figure 6**  
Village revenue proportion in Simalungun District, 2014-2019- in millions IDR



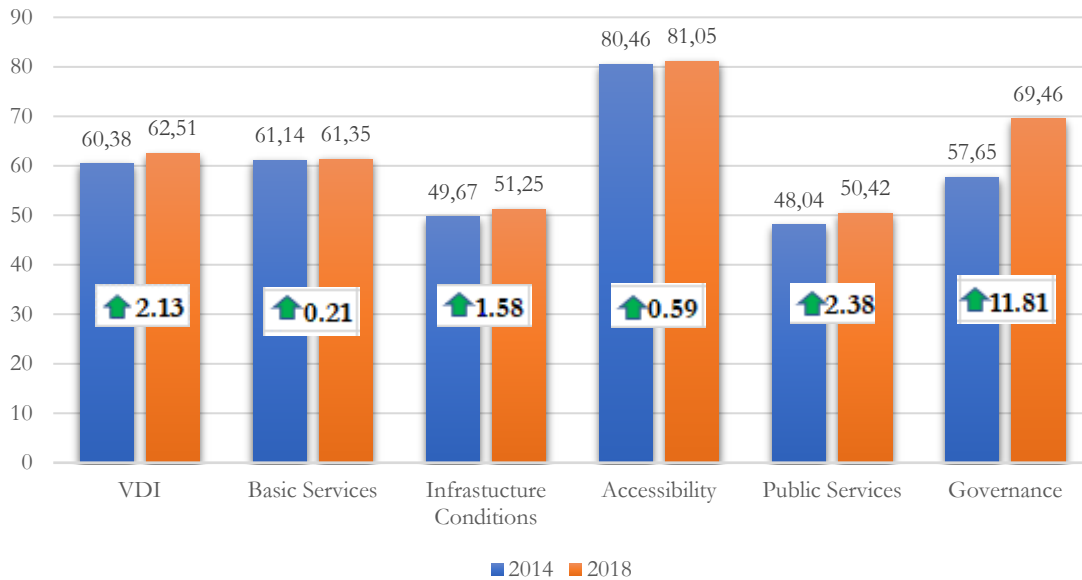
Source: Village Government Financial Statistics, 2014-2019.

The VDI is calculated for all 386 villages in Simalungun based on the village census for 2014 and 2018. The average VDI is shown in Figure 7, together with the underlying indices for the Basic Services, Infrastructure Conditions, Accessibility/Transportation, Public Services, and Administration of Village Governance dimensions. In 2018, all components of the VDI showed an increase compared to 2014, with the greatest increase (in absolute and relative terms) for the Administration of Village Government Index. According to the Simalungun District Village Development Index book for 2018, the Human Resources Quality of the Village Secretary, Village Autonomy, and Completeness of Village Governance have substantially grown in this dimension. The trend in these three indicators reflects the rise in (i) the existence of the village secretary and the highest level of education they have attained, (ii) the sources of village revenue and the proportion of PAD to total village revenue, and (iii)



the existence of the Village Council and the village head's office, respectively. In contrast, the smallest increase is observed for the Basic Services dimension, which holds the most significant weight in the overall VDI (0.326).

**Figure 7**  
**VDI and its dimensions in Simalungun District, 2014 and 2018**



Source: Statistics Indonesia, 2019

#### 4.2. Impact of Village Fund on village development

Before examining the impact of the Village Fund on village development, we assess the application of the Village Fund targeting formula. As previously described in Chapter 2, the formula for distributing village funds takes population size, the number of poor people, geographical challenges, and the level of village development into account. Villages with a relatively larger population, a greater proportion of poor residents, a higher index of geographical difficulties, and a lower degree of village development are supposed to receive relatively more funding. This would imply that less developed villages with a relatively low VDI score should receive more funding. This is evaluated by regressing the VDI score for 2014 on the per capita Village Fund transfers received in 2018 (Table 6). The negative and significant sign of the coefficient confirms that, on average, villages with a higher VDI score indeed receive less funding than less developed (and presumably poorer) villages. This is consistent with the formula for allocating the Village Fund and the government's aim of targeting the worse-off villages. Furthermore, the result justifies the difference-in-difference approach because the allocation is not random.

**Table 6**  
**Village Fund targeting relative to Pre-intervention VDI**

	Village Development Index 2014
VF per capita in 2018 (in millions IDR)	-3.753*** (0.268)
Constant	67.17*** (0.584)
Observations	386
R <sup>2</sup>	0.339

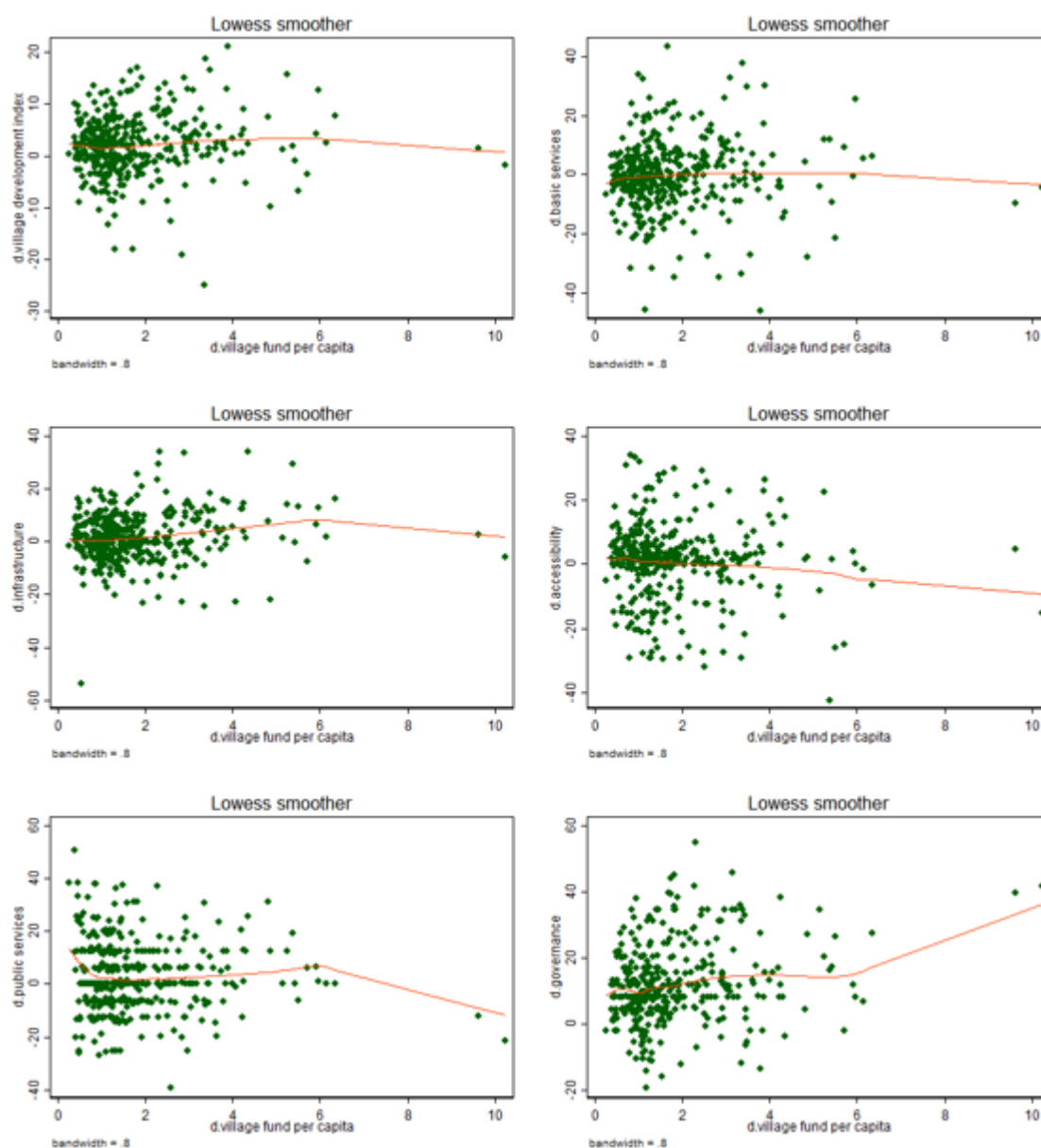
Statistical significance: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

Standard errors are in parentheses.

Source: own calculation.

Figure 8 considers the correlation between the Village Fund and the Village Development Index (overall as well as for the five dimensions) using scatter plots and locally weighted regressions. In line with the first difference method, Figure 8 depicts the changes in the variables. Figure 8 shows a slight positive relationship between changes in Village Funds transfers per capita and changes in the VDI, Basic Services, Infrastructure, and Administration of Village Government indices. In contrast, it is inversely correlated with changes in Public Service and Transportation/Accessibility indexes.

**Figure 8**  
**Local Linear Smooth plots**



Source: own calculation.

The First Difference estimation results for the impact of Village Fund on changes in VDI, along with the five dimensions, are presented in Table 7.

**Table 7**  
**Impact of Village Fund allocation on changes in VDI from 2014 to 2018**

Independent Variable	(1) Changes in VDI Score	(2) Changes in the Infrastructure Index	(3) Changes in Government Index	(4) Changes in Basic Service Index	(5) Changes in Accessibility Index	(6) Changes in Public Service Index
VF percapita (in millions IDR)	0.356 (0.232)	1.047** (0.368)	2.077*** (0.449)	0.268 (0.468)	-0.769 (0.460)	-0.539 (0.525)
Constant	1.336** (0.505)	-0.427 (0.803)	8.106*** (0.980)	-0.678 (1.022)	1.905 (1.002)	3.311** (1.144)
Observations	386	386	386	386	386	386
R <sup>2</sup>	0.006	0.021	0.053	0.001	0.007	0.003

Statistical significance: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

Standard errors are in parentheses.

Source: own calculation.

The results show a positive coefficient for the effect of the Village Fund per capita on changes in the VDI score, but this is not statistically significant. If we look at the VDI dimensions, the Village Fund has a positive and statistically significant effect on two dimensions of VDI, namely Infrastructure and Administration of Village Government, but not on Basic Service, Accessibility, and Public Service. The coefficients in columns 2 and 3 of the table indicate that for every 1 million IDR increase in Village Fund per capita, the indices for Infrastructure and Government Administration increase by 1.047 and 2.077 points, respectively. This is an expected result because: (i) Since the introduction of the Village Funds program in 2015, this fund has been utilized more for infrastructure development. This is confirmed by KOMPAK and the Ministry of National Development Planning (2017); across the nation, 84% of the Village Fund is used for infrastructure; (ii) Referring to information on Village Census publication, one of the essential elements in the Administration of Village Government Index is the increase in village revenue. The presence of VF doubled or even tripled the village's income, increasing the index. Improving the scores of the other three indices, namely Basic Services, Accessibility/Transportation, and Public Services, is complicated. One of the reasons is that unlike village infrastructure and village government administration, which the village government itself can do, the other three dimensions require the involvement of many stakeholders, such as programs from central and district governments regarding road and education/health infrastructures or third parties' grant to support public service improvement. We assume that to improve the other three indices, Village Funds must be supported by other programs.

The estimated constants in the first difference model reflect the time trend. These suggest that even without the Village Fund program, the overall VDI score and the Government Administration and Public Services indices would have increased between 2014 and 2018 by 1.336, 8.106, and 3.311 points, respectively. The interpretation of this intercept value is that there are various other factors besides the Village Fund that can support village development.

In addition to the basic first difference regressions, we add some control variables to assess the sensitivity to other factors, such as other village income, village head education, the

number of crime incidents, and the number of natural hazard incidents (Table 8). The estimated coefficient signs and statistical significance change very little and remain consistent with those in Table 7. Regarding the regression results with the control variable, two aspects stand out. First, the increase in the education of the village head has a positive and statistically significant effect on the Administration of Village Government index. This could reflect improved human resource quality of the village head. Second, there is no effect of other village income on VDI and its five underlying dimensions. This could mean that among several villages' income sources, the Village Fund is the dominant source of income that is substantial enough to affect bottom-up village development. Figure 6 confirms this.

Moreover, the results in Table 8 also support the parallel trend assumption. Even though this assumption cannot be directly tested, the fact that the impact estimates are very robust to observed time-variant variables would suggest that it is also unlikely that unobserved variables cause the estimates to be biased.

**Table 8**  
**Estimation result - with control variables**

Independent Variables	(1) Changes in VDI Score	(2) Changes in the Infrastructure Dimension	(3) Changes in Government Dimension	(4) Changes in Basic Service Dimension	(5) Changes in Accessibility Dimension	(6) Changes in Public Service Dimension
Changes in VF per capita (in millions IDR)	0.435 (0.241)	1.177** (0.384)	2.026*** (0.455)	0.455 (0.488)	-0.844 (0.479)	-0.465 (0.546)
Changes in Other village income (in millions IDR)	0.00433 (0.0240)	0.00336 (0.0382)	0.0245 (0.0453)	0.0374 (0.0486)	-0.0606 (0.0477)	0.0182 (0.0544)
Changes in village head education	0.263 (0.305)	-0.352 (0.486)	2.788*** (0.576)	0.0389 (0.618)	0.151 (0.607)	-0.546 (0.691)
Changes in the number of Crime incident	0.116 (0.0992)	0.128 (0.158)	0.157 (0.187)	0.203 (0.201)	-0.0599 (0.197)	0.200 (0.224)
Changes in the number of Natural Hazard incident	0.0578 (0.0863)	0.0956 (0.137)	-0.0432 (0.163)	0.152 (0.175)	-0.0187 (0.172)	-0.277 (0.195)
Constant	0.631 (2.270)	-1.061 (3.614)	5.399 (4.282)	-4.653 (4.590)	7.590 (4.510)	1.454 (5.137)
Observations	386	386	386	386	386	386
R <sup>2</sup>	0.015	0.025	0.112	0.009	0.012	0.011

Statistical significance: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

Standard errors are in parentheses.

Source: own calculation.

The estimation results in Tables 7 and 8 that indicate an insignificant effect of the Village Fund on VDI are consistent with the study by Yulitasari and Tias (2020) on the relationship between the Village Fund and village status in the province of Central Java. They argue that village development status can change more due to factors other than village funds. However, research by Salsabelah (2020) gives different findings. Their study, which used

district/city data in West Java, found that the Village Fund increases growth in the VDI of 64.4% of districts and municipalities. Variations in the units of analysis, observational data, study periods, and the indicators used to assess village development may result in differences in the research findings.

## Chapter V

### Conclusion

This research paper presents an empirical assessment of the effect of Indonesia's Village Funds, introduced in 2015 and prioritizing poor villages, on village development in the Simalungun District. The level of village development is indicated by changes in the Village Development Index and its five dimensions for all 386 villages in Simalungun district between 2014 and 2018. The empirical strategy uses a difference-in-difference approach.

This study first establishes that the Village Fund is indeed targeted to the worse-off villages. This finding is in line with the Village Law's objectives to reduce the gap between poor and wealthier villages. However, the central and district governments should continue to improve the effectiveness of budgeting and the utilization of the Village Fund, for example, by improving the allocation formula or building local government officials' capacity.

Subsequently, this research finds positive impacts of the Village Fund on village development status. Although the effect on the overall VDI is not statistically significant, there are positive and significant impacts on the VDI dimensions of Infrastructure and Administration of Village Government. The results indicate that the use of village funds in Simalungun villages prioritizes improving the quality of infrastructure and enhancing village government administration. To have a more significant impact on dimensions other than infrastructure and government administration indices, the village governments in Simalungun could consider using the Village Fund for other expenditures regarding the VDI dimension's underlying indicators only if the existing infrastructure quality is still maintained. Increasing access to health and education are two further initiatives that might be considered. Nevertheless, it cannot be denied that it is highly likely that increasing the score of the other three indices is complicated. One of the reasons is that unlike the village's infrastructure and government administration, in which the village government alone can make improvements, the other three dimensions require the involvement of many stakeholders.

Furthermore, the estimated time trends for the control group suggest that the overall VDI and Village Government Administration and Public Service would have continued to increase from 2014 to 2018, even in the absence of the Village Fund program. These results imply that there are various other factors that can achieve improved village development, for example, the community's quality or the socio-economic conditions in the village.

The main limitation of this research is the focus on village development in Simalungun District. It is challenging to claim external validity, given the regional differences in local economies and institutions across Indonesia. Subsequent research could increase the scope to a national level and over a more extended period while also considering other relevant and contributive factors that determine the Village Fund impacts.

## References

- Antolöv, H., Waterberg, A. and Darmawan, L. (2016) 'Village Governance, Community Life, and the 2014 Village Law in Indonesia', *Bulletin of Indonesian Economic Studies*, 52(2), pp.161–183.
- Arifin, B., Wicaksono, E., Tenrini, R. H., Wardhana, I. W., Setiawan, H., Damayanty, S. A., Solikin, A., Suhendra, M., et al (2020) 'Village fund, village-owned enterprises, and employment: Evidence from Indonesia', *Journal of Rural Studies*, 79, pp.382-394.
- Arina, I.S.A., Masinambow, V. and Walewangko, E.N. (2021) 'Pengaruh Dana Desa dan Alokasi Dana Desa terhadap Indeks Desa Membangun di Kabupaten Minahasa Utara', *Jurnal Pembangunan Ekonomi dan Keuangan Daerah*, Vol.22, No.3, pp.22-41.
- Azis, N.L.L (2016) 'Otonomi Desa dan Efektifitas Dana Desa', *Jurnal Penelitian Politik*, 13(2), pp.193-211.
- Boonperm, J., Haughton, J. and Khander, S.R. (2013) 'Does the Village Fund Matter in Thailand? Evaluating the impact on incomes and spending', *Journal of Asian Economics*, 25, pp.3-16.
- Candoevrit, W. and Ashakul, B. (2008) 'The Impact of the Village Fund on Rural Households', *TDRI Quarterly Review*, 10(2), pp.9-16.
- Center, A.P.P. (2007) 'Tracking Progress towards Community Empowerment and Welfare (Midterm Survey for the Impact Evaluation of the KalahiCIDSS)'. *Asian Pacific Policy Center*, Manila.
- Deininger, K., and Liu, Y. (2009) 'Longer-term Economic Impacts of Self-help Groups in India', *The World Bank*.
- Detotto, C. and Otrando, E. (2010) 'Does Crime Affect Economic Growth', *KYKLOS*, Vol.63(3), pp.330-345.
- Dinata, R.J. and Hidayat. P. (2015) 'Analisis Daya Saing Ekonomi Kabupaten Simalungun Sumatera Utara', *Jurnal Ekonomi dan Keuangan*, Vol. 3. No.1, pp. 1-14.
- Dongier, P., Domelen, J.V., Ostrom, E., Ryan, A., Wakeman, W., Bebbington, A., Alkire, A., Esmail, T. et al (2003) 'Community Driven Development', *PRSP Sourcebook*, World Bank, Washington, pp. 301-331.
- Estrada, M.A.R. and Ndoma, I. (2014) 'How crime affects economic performance: The case of Guatemala', *Journal of Policy Modeling*, 36, pp.867-882.
- Gani, A.O. and Arief, M. (2020) 'Pengaruh Penggunaan Dana Desa terhadap Indikator Ketahanan Sosial, Ekonomi dan Ekologi Desa Tertinggal Kecamatan Bulukumpa Kabupaten Bulukumba', *PARADOKS : Jurnal Ilmu Ekonomi*. 3(1), pp.78-88.
- Getler, J.P, Martinez, S, Premand, P. Rawlings, L.B., and Vermeersch, M.J. (2016) *Impact Evaluation in Practice, Second Edition*. Washington: The World Bank.
- Gujarati, D.N., and Porter, D.N. (2009) *Basic econometric, Fifth Edition*. Singapore: MacGraw-Hill Book Co.
- Fisher, R.C. (2007) *State & Local Public Finance. 3rd ed*. Ohio: Thomson South-Western.



- Hardwick-Franco, K. G. (2021) 'Revisioning theories of rurality and rural educational leadership: Rural cotexts and rural school principals in Eyre Peninsula, South Australia', Thesis: Flinders University.
- Hartojo, N., Ikhsan, M., Dartanto, T. and Sumarto, S. (2022) 'A Growing Light in the Lagging Region in Indonesia: The Impact of Village Fund on Rural Economic Growth', *Economies*, 10: 217. Available at <https://doi.org/10.3390/economies10090217> (Accessed: 10 October 2022)
- KOMPAK and Bappenas (2017) Dana Desa and Poverty Alleviation. Retrieved from [http://kompak.or.id/userfiles/publication/download/Feb2017\\_brief-dana-desa-EN-Final.pdf](http://kompak.or.id/userfiles/publication/download/Feb2017_brief-dana-desa-EN-Final.pdf).
- Kulutunga, U. (2010) 'Impact of Culture towards Disaster Risk Reduction', *International Journal of Strategic Property Management*, 14:4, pp.304-313, Available at <https://doi.org/10.3846/ijspm.2010.23> (Accessed: 10 October 2022).
- Kuncoro, B., Nugraha, J. T. and Ahsani, R. D. (2019) 'Pengembangan Potensi Destinasi Wisata Menggunakan Indeks Pembangunan Desa di Balesari Kecamatan Windusari Kabupaten Magelang', *Journal of Public Administration and Local Governance JPALG*, 3 (2), pp.2614- 4433.
- Lewis, B. D. (2015) 'Decentralising to Villages in Indonesia: Money (and Other) Mistakes', *Public Administration and Development*, 35.5, pp.347-359
- Mansuri, G. and Rao, V. (2004) 'Community-Based and -Driven Development: A Critical Review', *The World Bank Research Observer*, 19(1), pp.1-39.
- Maulana, A. and Suryaningrum, N. (2019) 'Efektivitas Dana Desa di Kabupaten Hulu Sungai Tengah', *KINERJA*, 16(2), pp.139-146.
- Ministry of Finance (2017) *Buku Saku Dana Desa. Dana Desa untuk Kesejahteraan Rakyat*. Jakarta.
- Ministry of Finance (2019) *Buku Pintar Dana Desa*. 2<sup>nd</sup> edition. Jakarta..
- Ministry of Finance (various years) *Peraturan Menteri Keuangan tentang Rincian Dana Desa* [Minister of Finance Regulation on Village Fund]. Jakarta: Kementerian Keuangan Republik Indonesia, various years.
- Ministry of National Development Planning and Statistics Indonesia (2015) Village Development Index of 2014-Challenges in Meeting the Village Minimum Service Standard. Bapenas and BPS, Jakarta.
- Ministry of National Development Planning (2014) 'Rencana Pembangunan Jangka Menengah Nasional (RPJMN) 2015-2019. Kementerian Perencanaan Pembangunan Nasional, Jakarta.
- Ministry of Villages Disadvantaged Areas and Transmigration (2020) 'Capaian output Dana Desa 2015-2019'. Jakarta.
- Oates, W. E. (1993) 'Fiscal decentralization and economic development', *National Tax Journal*, pp.237-243.

- Pal, S. and Wahhaj, Z. (2017) 'Fiscal decentralization, local institutions, and public good provision: evidence from Indonesia', *Journal of Comparative Economics*, 45, pp.383–409.
- Parajuli, D., Acharya, G., Chaudhury, N., Thapa, B.B. (2012) 'Impact of Social Fund on the Welfare of Rural Households: Evidence from the Nepal Poverty Alleviation Fund. *World Bank*.
- Rondinelli, D.A., Nellis, J.R. and Cheema, G.S. (1983). 'Decentralization in Developing Countries: A Review of Recent Experience', Working Paper No.581. World Bank, Washington, D.C.
- Rosen, H.S. and Gayer, T. (2014) *Public Finance, Tenth Edition*. New York: McGraw-Hill.
- Shalsabellah, G. (2020) 'Dampak Pengalokasian Dana Desa Dalam Pencapaian Kinerja Indeks Pembangunan Desa (IPD) di Provinsi Jawa Barat Tahun 2015-2018', Undergraduate Thesis. Universitas Pendidikan Indonesia.
- Statistics Indonesia (2014) *Statistics of Village Government Report (Statistik Keuangan Pemerintah Desa 2014)*.
- Statistics Indonesia (2015) *Statistics of Village Government Report (Statistik Keuangan Pemerintah Desa) 2015*.
- Statistics Indonesia (2016) *Statistics of Village Government Report Statistik Keuangan Pemerintah Desa 2016*.
- Statistics Indonesia (2017) *Statistics of Village Government Report Statistik Keuangan Pemerintah Desa 2017*.
- Statistics Indonesia (2018) *Statistics of Village Government Report Statistik Keuangan Pemerintah Desa 2018*.
- Statistics Indonesia (2019) *Statistics of Village Government Report (Statistik Keuangan Pemerintah Desa) 2019*.
- Statistics Indonesia (2019) *Hasil Pendataan Potensi Desa (Podes) 2018 Berita Resmi Statistik No.04/04/12/Thn.XXII*.
- Statistics Indonesia (2019) *Simalungun Regency in Figures 2018*. Siantar: BPS Kabupaten Simalungun.
- Tambunan, B.H., Sihombing, M., and Harahap, R.H. (2020) 'Peranan Dana Desa dalam Pengembangan Indeks Desa Membangun di Kecamatan Sibolangit Kabupaten Deli Serdang Provinsi Sumatera Utara. *PERSPEKTIF*, 9(2), pp. 32-40.
- The World Bank, (2020) *Indonesian Village Governance under the new Village Law (2015-2018)*, Washington DC: World Bank.
- Undang-Undang Nomor 6 Tahun 2014 Tentang Desa(Village Law).
- United Nations (2019) *The Sustainable Development Goals Report 2019*.
- White, H. (2010) 'A contribution to current debates in impact evaluation', *Evaluation*, 16(2), pp. 153-164.

- Wooldridge, J. M. (2016) *Introductory econometrics: A modern approach, Sixth Edition*. Nelson Education.
- Yulitasari, Y. and Tyas, W. P. (2020) 'Dana Desa dan Status Desa di Provinsi Jawa Tengah', *Journal of Regional and Rural Development Planning (Jurnal Perencanaan Pembangunan Wilayah Dan Perdesaan)*, 4(2), pp.74-83.
- Zet, L. (2022) 'The Effect of Crime and the Social Culture of the Community on Rural Development', *The Indonesian Journal of Development Planning*, VI(2), pp.173-185. Available at <https://doi.org/10.36574/jpp.v6i2.338> (Accessed: 10 Oktober 2022).