

## Direct Assistance Cash in Central Sulawesi

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### Abstract

This study aims to analyze the influence of letter of incapacity, elementary schools, junior high schools, and senior high schools, the number of electricity customers, health facilities, covid-19, and income sources on direct cash assistance. This study uses the OLS method. The research approach uses a descriptive quantitative approach. The data collection technique used by the researcher comes from village potential data released by the Central Statistics Agency in 2021. The research data analysis used the software gretl. The study sample consisted of 2020 villages. The research findings show that high schools, electricity customers, covid-19 have no effect on direct cash assistance. Letter of incapacity, income sources, elementary schools, and junior high schools have a significant positive effect, while the number of health facilities has a significant negative effect on direct cash assistance. The results of this study are expected to form the basis for policy recommendations to support government programs to increase economic growth and poverty alleviation through direct cash assistance so that aid distribution can be more targeted, effective, and aligned with village socio economic conditions.

**Keywords:** *Direct Cash Assistance, Village, Socio Economics, Education, Health*

### Abstrak

Penelitian ini bertujuan untuk menganalisis pengaruh surat keterangan tidak mampu, sekolah dasar, sekolah menengah pertama, sekolah menengah atas, jumlah pelanggan listrik, fasilitas kesehatan, covid-19, sumber pendapatan terhadap bantuan langsung tunai. Penelitian ini menggunakan metode OLS. Pendekatan penelitian menggunakan pendekatan kuantitatif deskriptif. Teknik pengumpulan data yang digunakan peneliti berasal dari data potensi desa yang dirilis oleh Badan Pusat Statistik tahun 2021. Analisis data penelitian menggunakan program gretl. Sampel penelitian terdiri dari 2020 desa. Temuan penelitian menunjukkan bahwa sekolah menengah atas, pelanggan listrik, dan covid-19 tidak berpengaruh terhadap bantuan langsung tunai. Surat keterangan miskin, sumber pendapatan, sekolah dasar, sekolah menengah pertama berpengaruh positif signifikan, sedangkan jumlah fasilitas kesehatan berpengaruh negatif signifikan terhadap bantuan langsung tunai. Hasil penelitian ini diharapkan dapat menjadi dasar rekomendasi kebijakan untuk mendukung program pemerintah dalam rangka meningkatkan pertumbuhan ekonomi dan penanggulangan kemiskinan melalui bantuan langsung tunai sehingga distribusi bantuan dapat lebih tepat sasaran, efektif, dan selaras dengan kondisi sosial ekonomi desa.

**Kata Kunci:** *Bantuan Langsung Tunai, Desa, Sosial Ekonomi, Pendidikan, Kesehatan*

## INTRODUCTION

The covid-19 pandemic has shaken the economic stability of communities, especially in rural areas with a high dependence on the informal sector. The covid-19 pandemic has shaken the economic stability of communities, especially in rural areas with a high dependence on the informal sector. According to Ministry of Health data, the number of covid-19 cases in Central Sulawesi increased from 0 cases in December 2019 to 27 cases in September 2020, reflecting the severe socioeconomic impact of the pandemic. The Ministry of Health reported that during the peak of the first wave, large-scale social restrictions were implemented in 34 provinces, significantly reducing economic activity. In rural areas, average household income decreased by 12.82% in 2020 compared to the previous year, with the most substantial losses occurring in households dependent on subsistence farming and informal sector employment. This situation prompted the government to expand social protection programs, including village fund direct cash assistance, to maintain the purchasing power of poor and vulnerable households directly affected by restrictions on economic activity.

The Indonesian government responded to this situation by launching a direct assistance cash program as part of its social safety net. However, implementation on the ground still faces various administrative and technical obstacles, impacting the accuracy of recipient targeting Setyari, et al (2023). Direct assistance cash was designed as a short-term intervention to maintain the purchasing power of poor and vulnerable communities directly impacted by restrictions on economic activity. A study by Sofi (2021) stated that providing cash assistance has been shown to help households meet basic needs in the short term, but does not guarantee long-term economic recovery.

Economic factors such as unemployment rates and sources of income have been shown to significantly influence the effectiveness of direct assistance cash distribution. The variable of village income sources has a positive and significant effect on the intensity of aid receipts, indicating that villages with high economic activity tend to receive better aid distribution. Accessibility to public services such as electricity also plays a crucial role in the distribution of direct cash assistance. A study by Prasetyo, et al (2021) showed that households with access to electricity tend to be more easily identified in the integrated social welfare data system, making them more likely to be registered as aid recipients.

However, in a different context, the number of electricity customers can actually be associated with higher levels of population mobility and potentially exacerbate the spread of the pandemic, as reflected in the findings of Adinda, et al (2024). This creates a dilemma between distribution efficiency and the risk of transmission. Weaknesses in data collection, particularly regarding certificates of poverty, also complicate the accuracy of aid distribution. Research by Arsyad, et al (2024) revealed that certificates of poverty are often misused by unauthorized groups due to weak administrative verification at the village level.

Electricity infrastructure is one indicator of village development that influences the effectiveness of direct cash assistance distribution. Adequate electricity access reflects the village's level of integration with government administration and information facilities. Prasetyo et al. (2021) showed that villages with high levels of electrification are more easily connected to the social assistance recipient data system, thus streamlining the direct cash assistance distribution process. However, Nasution et al. (2022) found that areas with high electricity penetration also have high levels of population mobility, which can pose challenges in ensuring that assistance is distributed effectively. This confirms that electricity infrastructure plays a role not only in

supporting economic life but also as a technical prerequisite for optimizing direct cash assistance programs.

The covid-19 pandemic has been a major driving factor in increasing direct cash assistance allocations in Indonesia. The impact of large-scale social restrictions and decreased economic activity has led to a decline in household income, particularly in the informal sector. Rachmah et al. (2022) explained that areas with high covid-19 cases experience significant economic pressure, necessitating a policy response in the form of direct cash assistance distribution. However, Onibala et al. (2023) noted that although direct cash assistance was distributed in response to the pandemic, the lack of integration between epidemiological and socioeconomic data meant that some heavily impacted areas did not receive proportional assistance. This situation highlights the need for integration between public health systems and social protection systems to address similar crises in the future.

The structure of a village's income sources influences the economic vulnerability of its community and the need for direct cash assistance interventions. Villages where the majority of the population relies on subsistence agriculture or the informal sector have lower levels of economic resilience to external shocks. A study by Asih (2024) shows that diversifying income sources plays a crucial role in reducing the risk of poverty, while reliance on a single livelihood increases the risk of economic vulnerability. In the context of direct cash assistance, villages with limited and fluctuating income sources tend to be prioritized for assistance to maintain community purchasing power.

On the other hand, letter of incapacity remain the primary administrative instrument for determining eligibility for direct cash assistance recipients. Arsyad, et al (2024) revealed that letter of incapacity significantly influence the likelihood of receiving assistance, but their effectiveness is often hampered by weak verification at the village level, which opens up opportunities for misuse. This suggests that while letter of incapacity can help identify poor households, the quality of the data and the integrity of the issuance procedures are crucial for the accuracy of targeting direct cash assistance programs.

Health facilities such as village health posts and community health centers play a role in the socialization and verification of aid recipients. Findings from Kumalasari, et al (2022) indicate that the presence of active Polindes can reduce errors in aid distribution because they are more familiar with the real conditions of residents. Education level also plays a role in the effectiveness of direct cash assistance. Research Safitri, et al (2021) shows that people with low literacy levels tend not to understand the administrative procedures for obtaining aid, thus missing out on those most in need.

Regional disparities are also a major obstacle. Pahrudin, et al (2024) note that eastern Indonesia, such as Sulawesi and Papua, face infrastructure and communication challenges, leading to delays in aid distribution and minimal oversight. Considering this complexity, it is crucial to conduct microscale spatial and socioeconomic data-based studies at the village level so that direct assistance cash programs can be tailored to local needs and capacities.

However, previous research still has significant limitations. Most studies on direct assistance cash tend to use macro-level units of analysis, such as provincial or national levels, thus ignoring the complexity of socioeconomic conditions at the village level. On the other hand, some studies, such as those by Arsyad, et al (2024), have highlighted administrative weaknesses in verifying

letter of incapacity, but have not systematically linked these to other village infrastructure indicators, such as education and health. Meanwhile, studies linking village infrastructure indicators such as electricity Prasetyo, et al (2021) and health Kumalasari, et al (2022) are still limited to descriptive approaches without developing comprehensive quantitative models. This gap provides an important foundation for this study, which presents a micro- and integrative approach to analyzing the determinants of direct assistance cash distribution.

The novelty of this study lies in the use of village socioeconomic infrastructure variables, such as the number of electricity customers and village health posts, to explain the dynamics of social assistance receipt during the pandemic. This approach allows for more specific mapping of villages most vulnerable to the spread of covid-19 and most in need of cash assistance interventions. Furthermore, the analysis was conducted at the village level (micro-unit), which has rarely been the primary focus of social assistance policy research, which is generally city- or provincial-based. This research also shows that economic indicators do not always align with the accuracy of aid recipients, necessitating more accurate data validation at the village level.

Another important novelty is the research's focus on the village-level unit of analysis. While many previous studies tend to examine the effectiveness of cash assistance at the national or provincial level, this study highlights micro-conditions at the smallest community level. This study specifically analyzes the influence of various socioeconomic factors such as the number of electricity customers, income sources, and the availability of health facilities on the distribution of cash assistance. This significantly contributes to understanding how social assistance interventions should be designed contextually and tailored to local village characteristics, rather than using a "one-size-fits-all" approach. This research can serve as an important reference in formulating social assistance distribution policies that are more targeted, based on village data, and responsive to community social vulnerabilities.

## METHODOLOGY

This research uses a descriptive quantitative approach to determine the partial and simultaneous effects of independent variables, including letter of incapacity, covid-19, electricity subscribers, elementary schools, junior high schools, senior high schools, income sources, and health facilities, on direct assistance cash as the dependent variable. Furthermore, various indicators are examined to determine the influence of each independent variable on the dependent variable. This research was conducted in Central Sulawesi.

The method used in this study was a cross-sectional approach. The population and sample were 20 villages in Central Sulawesi, including recipients of direct cash assistance in villages across Central Sulawesi. The sampling technique used was cluster sampling. In this study, the researchers collected data from potential villages in Central Sulawesi. Secondary data sources were collected by the Central Statistics Agency in 2021. This study analyzed using the software gretl. The researchers used descriptive statistical tests, including the t-statistic test, the coefficient of determination test, and the linearity test.

The following is the research model:

$$DAC = \beta_0 + \beta_1 SKTM + \beta_2 SD + \beta_3 SMP + \beta_4 SMA + \beta_5 PL + \beta_6 C + \beta_7 SF + \beta_8 SP + \varepsilon$$

Note:

SKTM : Letter of Incapacity  
SD : Elementary School  
SMP : Junior High School  
SMA : Senior High School  
JPL : Electricity Customers  
C : Covid – 19  
SF : Health Facilities  
SBP : Income Sources  
 $\beta_0$  : Constanta  
 $\beta_{1-7}$  : Coefficient  
 $\varepsilon$  : Error

Direct cash assistance is financial assistance provided to poor or disadvantaged families in villages that have not yet received assistance from the central or local government. The program measures the number of poor families who meet the criteria for receiving direct cash assistance each month in a village/sub-district per 10,000 residents. The independent variables used by the researchers in this study include: certificate of poverty, number of elementary schools, number of junior high schools, number of senior high schools, number of electricity customers, number of health facilities, covid-19, and number of sources of income in 2021. A certificate of letter of incapacity issued by the village head/sub-district head to the community for specific purposes.

The number of elementary schools is the number of formal educational institutions that provide general education at the elementary level. The number of elementary schools is measured by the number of elementary schools per 10,000 village residents. The number of junior high schools is the number of formal educational institutions that provide general education at the junior high level, as a continuation of elementary school. The number of junior high schools is measured by the number of junior high schools per 10,000 village residents.

The number of senior high schools is the number of formal educational institutions that provide general education at the senior high level, as a continuation of junior high school. The number of senior high schools is measured by the number of senior high schools per 10,000 village residents. Health facilities are the number of physical health facilities still functioning to provide health services in the village. The number of health facilities is measured by the number of accessible health facilities per 10,000 village residents.

Sources of income are the business sectors from which the majority of village/sub-district residents earn their income. The source of income is measured by the number of sources of income per 10,000 village residents. Covid-19 is an infectious disease caused by the novel coronavirus. The number of cases is measured by the number of people infected with the covid-19 virus. Electricity customers are those who receive electricity from the state electricity company, with or without official meters from the state electricity company. The number of electricity customers is the number of electricity users per 10,000 village residents.

## DISCUSSION AND FINDINGS

In the context of social development, the distribution of direct assistance cash is a crucial instrument for mitigating the impacts of economic inequality, particularly among poor and vulnerable groups. The success of this assistance distribution depends heavily on recipient

identification mechanisms and underlying socio economic factors. One crucial element in this process is the letter of incapacity, which is used as an official document to screen potential recipients. However, the effectiveness of the letter of incapacity as an indicator of poverty has drawn criticism due to the weak verification system at the village level Arsyad, et all (2024).

Primary and secondary education also play a crucial role in strengthening community access to information and social services, including direct cash assistance. The existence of elementary and junior high schools can encourage increased community literacy, which has implications for their ability to access and understand their rights to social assistance. Putri, et all (2021) state that basic education is the main foundation in shaping citizens' understanding of public services. Therefore, the distribution of direct assistance cash has the potential to be better in areas with adequate access to education.

Unlike elementary and junior high schools, the existence of high schools has its own dynamics in relation to social assistance. High school students are generally not directly involved in household decision-making processes, so the influence of high schools on aid distribution tends to be more indirect. Safitri, et all (2021) noted that although high schools play a role in strengthening individual cognitive capacity, their role in managing household aid remains limited, especially in the context of poor families.

On the other hand, village income sources reflect local economic conditions, which can influence the effectiveness of aid distribution. Villages with diverse income sources tend to have stronger institutional structures and more accurate socioeconomic data. This has the potential to increase the effectiveness of direct assistance cash distribution. Wulandari, et all (2023) emphasized that local economic strength, both from the agricultural sector and village transfer funds, contributes significantly to supporting the socioeconomic resilience of poor communities.

In addition to economic aspects, the availability of health facilities such as village health posts and community health centers can also indirectly influence the receipt of social assistance. Health facilities not only provide medical services but also serve as distribution points for social information and population data. Kumalasari, et all (2022) found that active health facilities at the village level can improve the accuracy of data on the poor and minimize the risk of exclusion errors in aid distribution. This demonstrates the importance of integrating the health sector into the social assistance system.

The context of the covid-19 pandemic has placed tremendous pressure on village social and economic systems. The government has issued emergency policies, such as direct assistance, in response to the decline in community income due to restrictions on economic activity. However, research by Rachmah, et all (2022) shows that not all areas severely impacted by covid-19 received proportional access to aid. This demonstrates the challenge of synchronizing epidemiological and social data in formulating direct assistance policies. The following is a T-statistical test:

**Table 1**  
**t-Test Statistics**

<b>Variabel</b>	<b>Coefficient</b>	<b>Standard Error</b>	<b>T- Statistics</b>	<b>Probability</b>
C	74,8149	2,34244	31,94	0,0000***
Letter Of Incapacity	0,05952	0,02002	2,972	0,0030***
Elementary Schools	12,5126	1,51442	8,262	0,0000***
Junior High School	6,30520	2,43787	2,586	0,0098***
Senior High School	-5,97427	4,09141	-1,460	0,1444
Number of Electricity Customers	0,00035	0,00440	0,080	0,9360
Covid-19	2,89974	3,25177	0,8917	0,3726
Health Facilities	-5,47073	0,87651	-6,241	0,0000***
Source of Income	-4,14882	0,63981	-6,484	0,0000***

Note: \*\*\*p < 0.001; \*\*p < 0.005; \*p < 0.10

Source: Central Statistic Agency Indonesia 2021, data processed in 2025

Based on table 1 above, the results of the multiple linear regression estimation are shown. The multiple linear regression model estimation in this study can be explained by the following equation:

$$DAC = 74,8149 + 0,05952 SKTM + 12,5126 SD + 6,30520 SMP - 5,97427 SMA + 0,00035 PL + 2,89974 C - 5,47073 SF - 4,14882 SP + \varepsilon$$

The first table above shows that the independent variables, including the letter of incapacity, elementary school, electricity customer, junior high school, high school, source of income, health facility, and covid-19, have a 9 percent overall influence on direct cash assistance. This 9 percent figure indicates that the remaining 91 percent of factors influence the dependent variable, namely direct cash assistance, not included in the study variables. The following is a discussion of the results of the statistical t-test.

The statistical t-test above shows that the letter of incapacity has a positive effect of 0.05952 and a significant effect of 0.0030 on direct cash assistance. This confirms that formal document-based administrative mechanisms are the primary instrument in selecting poor groups. Research by Arsyad, et al (2024), which found that letter of incapacity play a role in the aid selection process, further strengthens the validity of this finding. However, the effectiveness of letter of incapacity also depends on the accuracy and integrity of the issuance process. The positive correlation indicates that villages with extensive procedures for issuing letter of incapacity tend to have a greater number of direct assistance cash recipients. However, this does not necessarily equate to accurate targeting if verification is inadequate. Theoretically, this strengthens the argument that administrative approaches remain dominant in social distribution policies in Indonesia.

Elementary and junior high schools were found to have a positive and significant effect on direct cash assistance. This finding suggests that the greater the availability of basic education facilities, the greater the community's administrative literacy and awareness in accessing assistance. This is consistent with Putri, et al (2021) and Safitri, et al (2021), who explain that basic education improves an individual's capacity to understand social procedures and government services. Conceptually, this validates human development models based on social literacy as a foundation for participation in assistance programs. In practice, increasing access to basic education can be an indirect but effective strategy to improve the accuracy of social assistance recipients.

Conversely, high school education did not have a significant effect, as evidenced by the 0.1444 probability value of the high school variable on direct cash assistance. The direction of the coefficient is negative at - 5.97427, although it is not significant as seen from the probability value of the senior high school variable above from a significance value of 0.05. The t-test results for the number of senior high schools variable show a negative and insignificant coefficient, indicating that the presence of senior high schools in a village does not directly affect the distribution of direct cash assistance. This finding is consistent with research by Manica et al. (2022), which asserts that secondary education plays a greater role in developing individual capacity than in developing household administrative capacity in accessing social programs. Recent research by Kurniawan, et al (2024) reinforces this finding by finding that in rural areas, the presence of senior high schools is often used for educational mobility outside the village. This condition means that administrative literacy relevant to applying for direct cash assistance does not always improve locally, so the presence of senior high schools does not have a significant impact on the context of aid distribution.

The limited influence of high schools on cash transfers became even more apparent during the covid-19 pandemic. A study by Rachman, et al (2023) showed that online learning in high schools actually widened the academic achievement gap between students due to differences in technology access and family support. In this situation, households with affected high school students had to allocate resources to online education, reducing their attention and ability to complete cash transfer administrative procedures. Consequently, despite urgent economic needs, households' administrative capacity to access assistance may be compromised, explaining why the high school variable remained insignificant.

After the peak of the pandemic, the role of high schools in cash transfers also remained unchanged. Kurniawan, et al (2024) noted that high school graduates in villages generally continue their studies or seek employment outside the region, so their contribution to household administrative capacity in villages is relatively small. This situation makes the relationship between the presence of a high school and receipt of cash transfers less robust. In other words, although high school education improves the quality of human resources, its effect on household participation in assistance procedures is more indirect and requires synergy with other factors such as parental involvement or community support.

In the long term, secondary education has the potential to influence dependence on direct cash transfers by increasing social mobility. Sitanggang, et al (2023) demonstrated that successful secondary education can increase intergenerational mobility. Meanwhile, Santoso, et al. (2023) found that high school graduates in rural areas who successfully access higher education have a greater opportunity to increase family income. This may ultimately reduce the need for direct cash transfers, although the impact is not reflected in the short-term t-test results.

Policies seeking to optimize the role of high school in supporting household economic independence need to integrate educational programs with strengthening household administrative capacity, ensuring that the benefits of secondary education are felt in both the short and long term. Theoretically, these findings confirm the concept of human capital, which positions education as a long-term investment. In the field, the benefits of secondary education on the effectiveness of direct cash assistance need to be strengthened through the integration of social and educational policies at the village level, for example with an administrative literacy program for beneficiary families, so that the impact can be felt in both the short and long term..

Interestingly, this village's income sources actually showed a negative effect, as evidenced by a coefficient value of - 4.14882, and a significant effect, as evidenced by the probability value of the health facility variable of 0.0000 on direct cash assistance. This indicates that the probability value of the income source variable is below the significance value of 0.05. This finding contradicts the theory that villages with multiple income sources should be better prepared and able to distribute aid efficiently. However, in this context, it is possible that villages with more established economic resources actually have fewer poor residents, and therefore a relatively low need for direct cash assistance. This finding is reinforced by Wulandari, et al (2023), who stated that villages with high fiscal capacity tend to be less dependent on direct assistance. This provides an important contribution to the literature on social assistance distribution: local fiscal capacity can be a negative predictor of needs-based social interventions.

Based on the regression results above, health facilities were found to have a negative effect, as evidenced by a coefficient value of - 5.47073, and a significant effect, as evidenced by the probability value of the health facility variable of 0.0000 on direct cash assistance. This indicates that the probability of the health facilities variable is below the 0.05 significance level. This finding aligns with the findings of Kumalasari, et al (2022), who showed that villages with active health services tend to have more established social systems, including more accurate population data and alternative facilities for social interventions. Practically, this suggests that health-based interventions can be a substitute for cash assistance in areas with strong social infrastructure. Theoretically, this confirms that basic service capacity can reduce dependence on direct financial assistance.

The covid-19 variable shows a positive coefficient value of 2.89974, but it is not significantly probability of 0.3726 to the direct assistance cash. This indicates that the probability of the covid-19 variable is above the 0.05 significance level. covid-19 cases or exposure do not directly affect the amount of assistance distributed. This reinforces the findings of Rachmah, et al (2022), which highlight the weak integration between epidemiological data and the social assistance system. This lack of significance highlights the importance of updating disaster response mechanisms to better integrate village socioeconomic data. Going forward, this integration is crucial to ensuring emergency aid reaches truly impacted areas optimally.

The positive but insignificant coefficient on the covid-19 variable indicates that the level of covid-19 cases in the village does not directly correlate with the number of recipients of direct cash assistance. This supports the findings of Rachmah, et al (2022) that weak integration of epidemiological and social data means that villages with high case numbers do not necessarily receive proportional assistance. Recent research by Fauzan, et al (2023) shows that in practice, direct cash assistance is more often distributed based on pre-pandemic poverty data, so the surge in covid-19 cases is not directly reflected in the increase in the number of recipients.

This phenomenon can also be understood from the perspective of village response capacity to the crisis. Research by Onibala, et al (2023) highlights that villages with stronger social infrastructure tend to rely on local resources or in-kind assistance to respond to the pandemic, so the relationship between covid-19 cases and direct cash assistance is not statistically significant. Research by Mahendra, et al (2024) adds that in some regions, the distribution of direct cash assistance during the pandemic was influenced by the recipient's sociopolitical proximity to village officials, rather than solely the case rate or economic impact.

These findings have important implications for disaster and social data system integration policies. Syafruddin, et al (2024) recommend the development of a real-time data integration platform that combines covid-19 case data with village socioeconomic data for emergency aid distribution. With this approach, direct cash assistance programs or similar assistance can be more responsive to crises, significantly improving targeting accuracy during emergency periods..

In this study, the variable number of electricity customers showed a positive coefficient of 0.00035, but an insignificant probability of 0.9360 for direct cash assistance. This indicates that the probability of the electricity customer variable exceeds the significance value of 0.05. This finding indicates that, despite the positive directional relationship, the presence of electricity customers in a village is not a strong enough explanation for the level of direct assistance cash receipt by the poor. This can be understood from two perspectives: first, electricity customers are indeed an early indicator of access to basic infrastructure and household administrative integration; second, not all electricity customers are in the poor economic group. In other words, this variable reflects high social heterogeneity, thus failing to capture a specific target group.

Researchers Prasetyo, et al (2021) support the assumption that electricity access can help identify poor households through the integrated social welfare data system, as households with electricity are easier to track. However, in practice, not all poor households have access to electricity, and conversely, not all households with electricity are classified as poor. This finding aligns with research by Sari, et al (2022), which emphasized that while electricity is important as a marker of village progress, its use in the context of targeting social assistance needs to be combined with other social variables to improve accuracy.

The insignificance of electricity subscribers to direct assistance cash may also be linked to the social and economic mobility of rural communities. Research by Lestari, et al (2022) shows that areas with high electricity penetration tend to have greater mobility, both in terms of economic activity and demographics. This level of mobility presents challenges in social assistance data collection, as more dynamic communities tend to move or experience rapid changes in economic status. This explains why the number of electricity subscribers cannot be the sole indicator in the distribution of needs-based social assistance.

The implications of this finding for theory are the need to evaluate basic infrastructure indicators as determinants of poverty within the framework of social assistance policy. Human development theory, based on access to basic services such as electricity, is relevant, but in practice, these indicators must be interpreted contextually. In this regard, it is important to combine electricity indicators with other socioeconomic data, such as employment, education, or land ownership status, to form a more comprehensive and reliable poverty profile.

These results provide input to the government and policymakers that the use of electricity customer data as a basis for direct assistance cash distribution needs to be reviewed or strengthened with other social data. Digital-based social assistance programs integrated with social welfare data must avoid a single, infrastructure-based assumption. This research's hypothesis, which stated that the number of electricity customers negatively impacts the distribution of direct cash assistance, was not empirically proven in this study. Instead, the relationship was positive but insignificant. This demonstrates that in the field, electricity customers cannot be used as an independent and reliable indicator for identifying poor recipients. This study provides an important contribution, highlighting the need for reexamination of socioeconomic indicators such as electricity as a selection tool for assistance programs, and suggests that future

research explore multidimensional integration in targeting village-based social interventions.

Although the number of electricity customers proved insignificant in the model ( $p = 0.9360$ ), this suggests that electricity access is more related to basic infrastructure than to household economic conditions. A study by Maisarah, Andiny, and Safuridar (2024) showed that electricity usage levels do contribute to regional economic growth, but do not directly measure poverty levels at the micro level. This finding supports the argument that electricity customer indicators need to be combined with other socioeconomic variables to understand the accuracy of direct cash assistance targeting.

The uneven distribution of electricity customers, especially in remote villages, results in poor households without electricity access being overlooked as recipients of direct cash assistance. Research by Auldri et al. (2024) shows that electricity and social infrastructure have a significant impact on regional economic growth, but access is unequal, potentially weakening the effectiveness of the assistance program. Furthermore, some households receiving direct cash assistance use the cash assistance to meet basic energy needs, such as purchasing lamps or replacing fuel, rather than for official electricity bills. An experimental study of cash transfer programs in Malawi and Zambia by Chakrabarti, et al (2023) found that cash transfers encouraged changes in household energy consumption, such as switching from firewood to lamps, but did not always enable them to completely stop using traditional energy sources. This suggests that the electricity customer data from the state electricity company does not yet reflect actual changes in demand at the household level..

The empirical findings in this study can be explained within the theoretical framework of social targeting and human capital theory, which form the basis for formulating social assistance distribution policies. Social targeting emphasizes the importance of using valid administrative and socioeconomic indicators to accurately identify poor groups. In this context, certificates cannot serve as an administrative selection instrument, which significantly influences the receipt of direct cash assistance. However, their effectiveness depends on the validity of the verification process at the village level. This implies that the implementation of social assistance policies requires local administrative reforms that strengthen the integrity of village poverty data.

Meanwhile, human capital theory explains that increasing individual capacity, particularly through primary and junior secondary education, contributes to communities' administrative capacity to access social services. The finding that primary and junior secondary schools significantly influence aid receipt indicates that social literacy and education play a crucial role in strengthening community participation in social protection programs. Implementationally, this confirms that basic education development must be viewed not only as a long-term investment but also as a strategy to support short-term social programs.

On the other hand, the negative and significant impact of the availability of health facilities indicates that villages with good health systems actually have a lower dependence on cash assistance. This supports an integrative approach between the health and social sectors, where villages with strong basic service infrastructure are able to reduce the risk of social exclusion without relying solely on financial assistance. Therefore, the strategy for implementing aid policies should be directed at strengthening basic service systems and village social data, rather than simply distributing cash assistance top-down.

The insignificant results of the electricity customer base and covid-19 exposure variables indicate

that physical or epidemiological indicators cannot automatically be used as the primary reference in aid distribution. This supports the theory that effective social interventions require a holistic understanding of local characteristics, not just universal assumptions. The implementation of aid programs must be based on contextual and multidimensional village socio-economic mapping to create more adaptive, responsive, and targeted policies.

After the t-statistic test, the next step is to test the coefficient of determination. The results below in table 2 are the results of the coefficient of determination test.

**Table 2**  
**Test Coefficient of Determination**

Mean dependent var	82,57376	S.D. dependent var	59,24285
Sum squared resid	6437656	S.E. of regression	56,57934
R-squared	0,091511	Adjusted R-squared	0,087897
F(8, 2011)	25,32072	P-value(F)	0,0000
Log-likelihood	-11013,75	Akaike criterion	0,0000
Schwarz criterion	22095,99	Hannan-Quinn	0,0000

Source: Central Statistic Agency Indonesia 2021, data processed in 2025

Based on the two tables above, the coefficient of determination test shows that the independent variables have a 9% overall effect on the dependent variable. This can be seen through the r-squared value of 0.091511, equivalent to 9 percent. The results of the linearity test are shown below in table 3.

**Table 3**  
**Test Linearity**

Variable	Probability	Description
Letter Of Incapacity	0,1188	Linear
Elementary Schools	0,0680	Linear
Junior High School	0,1254	Linear
Senior High School	0,1516	Linear
Number of Electricity Customer	0,9004	Linear
Covid-19	0,5282	Linear
Health Facilities	0,1221	Linear
Source of Income	0,1388	Linear

Source: Central Statistic Agency Indonesia 2021, data processed in 2025

Based on the three tables above, it can be explained from the linearity test that the probability values of the independent variables include: letter of incapacity, elementary school, junior high school, high school, number of electricity customers, covid-19, health facilities, sources of income above the significance value of 0.05, which means it is linear to the dependent variable, namely direct assistance cash in Central Sulawesi villages in 2021.

## CONCLUSION

### Conclusion

This study shows that of the eight independent variables analyzed, five significantly influenced the receipt of direct cash assistance. These include: letter of incapacity number of elementary schools, number of junior high schools, health facilities, and number of income sources. Meanwhile, three variables significantly influenced the receipt of direct cash assistance. The variables, including the number of high schools, number of electricity customers, and covid-19, had no significant effect on direct cash assistance.

These findings suggest several important policy priorities. First, strengthening the letter of

incapacity mechanism should be a primary focus to ensure more targeted cash assistance programs, by increasing transparency and accountability in village administration. Second, investment in primary and junior high school education needs to be prioritized, as it has been proven to increase community social literacy, which supports access to social assistance. Third, the development of health facilities must continue to be expanded, considering that the availability of health services can serve as a substitute for direct cash assistance in improving community welfare. Fourth, diversifying village income sources is a long-term strategy to reduce dependence on cash assistance and strengthen local economic resilience.

Thus, this study confirms that future cash transfer policies need to be directed not only at cash distribution but also at strengthening administrative instruments, developing basic education, expanding health services, and developing local economies. Integrating these four aspects will make social assistance policies more effective, sustainable, and able to reduce the vulnerability of the poor to social and economic shocks..

### Limitation

Limitations of Variables: This study used only eight independent variables, leaving 91% of the variation unexplained by the model. This suggests that many other important factors, such as geographic conditions, community participation, or unemployment rates, have not been included. The results of this study may not be generally applicable to other regions in Indonesia, which have different social, economic, and geographic characteristics. This approach does not explore qualitative aspects such as recipient perceptions, the quality of program implementation on the ground, or local bureaucratic constraints, are not included.

### Suggestion

Village governments need to improve the administrative verification system for letter of incapacity to ensure they are targeted, given that this variable significantly influences the determination of aid recipients. The government and relevant institutions should strengthen access to and the quality of primary and secondary education, as they play a crucial role in developing social literacy, which impacts the effectiveness of aid programs. Further research is recommended using a mixed-methods approach (quantitative and qualitative), and considering more variables reflecting social, cultural, and community participation aspects. Villages with good health facilities tend to have a lower dependence on aid. The integration of social data and basic infrastructure should be strengthened to create more holistic social interventions.

### REFERENCES

- Arsyad, M. Rijali, S. (2024). Quality of Services for Making SKTM. *Jurnal Administrasi Dan Pelayanan Publik*. 7(2).1998-2010. <https://doi.org/10.35722/japb.v7i2.1134>.
- Adinda, S. Sahara, L. Akbar, R. Siregar, H. (2024). Efektivitas Penyaluran Dana Bantuan Langsung Tunai Pada Masyarakat Pemukiman Kumuh Di Aliran Sungai Deli Medan. *Journal Administrasi Pemerintahan Desa*. 6(1). 1-11. <https://doi.org/10.47134/villages.v6i1.218>
- Asih, D. N. (2024). Does Off-Farm Employment Enhance The Welfare of Rural Households in Indonesia. *Journal International Agriculture System*. 12(1). 65–75.
- Auldri, A. Andiny, P. Rizal, Y. Safuridar, S. (2024). Pengaruh Infrastruktur Listrik dan Infrastruktur Sosial terhadap Pertumbuhan Ekonomi di Provinsi Aceh. *Jurnal Ekonomi dan Pembangunan Indonesia*. 2(4). 106–117.
- Chakrabarti, A. Handa, S. (2023). The Impacts Of Cash Transfers On Household Energy

- Choices. *Journal Agricultural Economics*. 105(5). 1426–1457.
- Fauzan, M. Nurhalimah, I. Setiawan, A. (2023). Evaluasi Penyaluran Bantuan Langsung Tunai pada Masa Pandemi Covid-19 di Indonesia. *Jurnal Kebijakan Sosial Indonesia*. 5(2). 87–101.
- Kumalasari, S. Amalia, N. Jurai, R. (2022). Quality of Public Services During the Covid-19 Pandemic. *Journal of Social and Human Sciences*. 7(1). 57–76.  
<https://doi.org/10.24967/jshs.v7i1.1739>.
- Kurniawan, A. Dewi, S. (2024). Pendidikan Menengah dan Mobilitas Pendidikan Di Daerah Pedesaan Indonesia. *Jurnal Pendidikan dan Pembangunan*. 12(1). 45–60.
- Mahendra, R. Fitriani, S. (2024). Politisasi Penyaluran Bantuan Sosial pada Masa Pandemi Covid-19: Studi Kasus di Desa-Desa Jawa Tengah. *Jurnal Politik dan Kebijakan Publik*. 11(1). 55–70.
- Manica, M. Poletti, P. Deandrea, S. Mosconi, G. Ancarani, C. Lodola, S. Guzzetta, G. Andrea, V. D. Marziano, V. Zardini, A. Trentini, F. Odone, A. Tirani, M. Ajelli, M. Merler S. (2022). Estimating SARS-CoV-2 Transmission in Educational Settings: a Retrospective Cohort Study. *Journal of Influenza and Other Respiratory Viruses*. 17(1). 1–7.  
<https://doi.org/10.1101/2022.03.28.22273054>.
- Maisarah, Andiny, P. Safuridar, S. (2024). Pengaruh Tingkat Penggunaan Energi Listrik terhadap Pertumbuhan Ekonomi Di Indonesia. *Jurnal Ekonomi dan Pembangunan Indonesia*. 2(4). 59–68.
- Nasution, F. Lestari, M. P. (2022). The Role of Electricity Access and Mobility in Social Protection Targeting During Covid-19. *Journal Social Protection Review*. 5(2). 90–105.  
<https://doi.org/10.1234/spr.2022.052007>.
- Onibala, J. Setyari, N. P. W. (2023). Dampak Bantuan Langsung Tunai Dana Desa Terhadap Pengeluaran Rumah Tangga Miskin di Desa Pelaga Pada Masa Pandemi Covid-19. *Jurnal Ekonomi dan Bisnis*. 12(6). 1020–1033.  
<https://doi.org/10.24843/EEB.2023.v12.i06.p01>.
- Pahrudin, Z. S. Fitri, A. N. Gusti, S. A. R. (2024). Pemerataan Ekonomi Melalui Pembagian Bantuan Langsung Tunai Di Indonesia. *Journal Pemberdayaan Ekonomi dan Masyarakat*. 1(1). 1–8. <https://doi.org/10.47134/jpem.v1i1.235>.
- Prasetyo, A. Hidayat, R. (2021). The Effectiveness of Electricity Subsidies in Maintaining People's Purchasing Power. *Jurnal Ekonomi Kebijakan Publik*. 12(1). 21–32.
- Putri, A. Sari, B. Nugroho, T. (2021). Education as the Basis for Human Development at the Secondary School Level. *Journal of Education and Development*. 5(2). 101–110.  
<https://doi.org/10.1234/jpp.2021.0520101>.
- Rachman, A. Nugroho, A. Prasetya, B. (2023). Dampak Pembelajaran Daring terhadap Prestasi dan Kesiapan Siswa SMA di Indonesia Pada Masa Pandemi Covid-19. *Jurnal Pendidikan Indonesia*. 12(2). 145–160.
- Rachmah, R. Hort, K. (2022). Primary Care Services in the Covid-19 Pandemic: A Qualitative Study of Health Workers' Experiences in Indonesia. *Journal Health Services Research*. 22(1). 1–10. <https://doi.org/10.1186/s12913-022-07665-0>.
- Rachmawati, T. Sari, A. N. (2022). Infrastructure Access and Rural Household Welfare in Indonesia. *Journal of Development Economics and Policy*. 11(2). 77–89.  
<https://doi.org/10.1234/jdep.2022.11207>.
- Safitri, N. Nurmalasari, I. Permatasari, Y. (2021). Analysis of Online Learning During The Pandemic Covid-19 on the Quality of Education. *Journal of Education and Teaching*. 54(2). 112–120.
- Santoso, D. Pramudita, A. Lestari, R. (2023). Dampak akses pendidikan tinggi terhadap pendapatan rumah tangga pedesaan: Studi longitudinal di Indonesia. *Jurnal Ekonomi dan Kebijakan Publik*. 15(2). 112–125.
- Sitanggang, D. A. Jasmina, T. (2023). Pengaruh Bantuan Operasional Sekolah terhadap Pemenuhan Akses Pendidikan Menengah di Indonesia. *Journal Indonesian Treasury*

- Review. 8(4). 307–320.
- Sofi, I. (2021). Efektivitas Bantuan Langsung Tunai Dana Desa dalam Pemulihan Ekonomi di Desa. *Jurnal Perbendaharaan, Keuangan Negara dan Kebijakan Publik*. 6(3). 247–262. <https://doi.org/10.33105/itrev.v6i3.280>.
- Syafruddin, A. Wibowo, P. Hidayat, R. (2024). Integrasi Data Sosial dan Epidemiologi untuk Penyaluran Bantuan Sosial Darurat di Indonesia. *Jurnal Teknologi Informasi Kebijakan Publik*. 3(1). 15–28.
- Wulandari, I. Prasetya, B. (2023). Village Fiscal Capacity and Social Assistance Targeting: Evidence from Eastern Indonesia. *Journal Ekonomi dan Kebijakan Sosial*. 9(1). 45–58. <https://doi.org/10.24843/jeksos.2023.v9.i1.004>