RESEARCH ARTICLE

Support to Sustainable Development Goal No.2 - Zero Hunger: A Study from Animal Feed Sub Sector Industries.

Vanessa Michelle* & Juniati Gunawan

Faculty of Economics, University Catholic Parahyangan, Indonesia

*Corresponding author: Vanessa Michelle, Faculty of economics, University Catholic Parahyangan, Indonesia

E-mail:
6042001092@student.unpar.ac.id

Abstract: The study aims to analyze the disclosure of zero hunger SDGs in each sub-sector of livestock feed that has been listed on the Indonesian Stock Exchange. Indonesia is currently lacking to meet its food needs with only 21.6% supplies. The zero-hunger SDGs are aimed in eliminating the problem of hunger. One of the company's types of industries that can help achieve the goals of the zero-hunger SDGs is the livestock feed sub-sector, which produce high protein food levels, such as eggs, chickens, milk, and some foods from agriculture. This research is descriptive methods based on content analysis. The samples applied from four subsector livestock feed companies registered with the BEI in 2015–2022 (population), with the total sample 32 data analysis. The information was analyzed from sustainability reports, financial reports, and the company's website from 2015 to 2022. The research shows that almost all companies were at 33–48% (medium disclosure), which means that the feed subsector has not optimally supported SDGS zero hunger against 11 indicators on each report, especially on the information of stunting reduction. There are three information among 11 disclosures which are disclosed mostly by the animal feed sub sector industries, namely (1) the implementation of production techniques and technology; (2) ensuring animals generate high-quality; (3) sustainably produced food. This information is related to nutritional problems, like stunting. In contrast, there are two pieces of information which have been least disclosed, including the establishment of an area, and the size of a sustainable area.

Keywords: Sustainable Development Goal, Zero Hunger, Animal Feed Subsector

1. Introduction

Today, the globalization process is growing in the business world, which is profoundly affecting social life. One of the current effects is the widespread decline in nutrition in developing countries, including Indonesia. The prevalence of such nutrients is due to a lack of protein, especially for children growing up. That protein shortage leads to stunting. According to Hebestreit (2016) in the public health journal, proteins are the primary intake for growth, such as chicken eggs, meat, and milk. Therefore, current nutrition issues are very serious. According to World Health Organization (WHO) (2021), such undernourishment could be lowered by taking a closer look at the Sustainable Development Goals (SDGs) Zero Hunger, which discussed how to reduce malnutrition and end poverty so that it could reach international numbers in 2025.

Based on a study conducted by Aidoo et al. (2016), on the zero-hunger SDGs, the data showed that the prevalence of nutritional deficiency increased in 2013 to 19.6% due to rising food prices and geographical constraints in some regions. With the risks increasing, the World Economic Forum predicted in 2010 that many countries would be at risk of nutrient deficiency, including Indonesia. In his research, the results pointed out that it was not enough to intervene in health, but also to pay geographical attention to food.

Benjamin also succeeded in proving that there is one country that can suppress such problems by making an agricultural modernization that implements land protection systems in collaboration with the Ministry of Agriculture (MOA), improves irrigation systems, and repairs already damaged environments that will subsequently support sustainable food production methods. It is to realize one of the main goals of reducing hunger in the long term by implementing the zero hunger aspect. But, Benjamin, in revealing about the livestock sub-sector against the zero-hunger SDGs, did not look at the 11 indicators that are in the zero-hunger SDGs, while in this study, the 11 zero- hunger SDGs indicators developed by the Indonesia Government was selected to be a tool for analyze the role of the sub-livestock feed.

The Sustainable Development Goals : Zero Hunger is directly related to sustainable food. According to the World Resource Institute, to produce sustainable food, there is a need for an animal feed sub-sector in producing protein foods, which is in line with one of the goals of the zero-hunger SDGs: to grow sustainable farm animals to produce good proteins. To improve, of course, World Resource Institute would require long-term measures such as bringing down food waste by being reused to feed livestock and being able to distribute food equally to all the geographical needs of society. By these efforts, it would be predicted by 2050 that there will be no malnutrition. Therefore, the current livestock feed sub-sector needs to significantly support the zero hunger SDGs, whose performance is revealed in the corporate reports of their respective companies.

Based on the importance of reducing the nutritional deficiencies needed by the livestock feed sub-sector against the zero hunger SDGs, this study took the feed sub-sector listed at the Indonesian Stock Exchange (BEI), which consists of four companies in Indonesia. Indonesia has been chosen because there is still a lot of food to meet the needs of the community, which leads to low nutrition (REFF). The under-nutrition problem is due to an increasing Indonesian population, so the demand for food continues to rise, but on the other hand, the land resources are shrinking and there are unpredictable climate changes, so the food supply to the population is falling today, leading to nutritional deficiency (Yuniastuti et al., 2018).

This study was carried out by analyzing sustainability reports, financial reports, and the company's website. This analysis is undertaken to find out the company's response to the SDGs on zero hunger, in particular, to seek the information of what the company has implemented to support zero hunger in the SDG no.2. The objective of the study is to provide empirical results of the support of the livestock feed sub-sector for the zero-hunger SDGs, by examining the disclosure based on 11 indicators of zero-hunger SDGs that were registered with the Indonesian Stock Exchange (BEI) in 2015 through 2022. This research provides insights of support for the livestock feed sub-sector of the zero-hunger SDG by evaluating disclosures in reports published on sustainability reports, financial reports, and company websites.

2. Literature Review

2.1. *Sustainability*

According to Brown et al. (1987), sustainability is seen as a goal of development and environmental management. Companies should not only pay attention to how to increase profits but also pay attention from an economic, social, and environmental point of view. According to Harared (2019), the concept of sustainability can be achieved with a strategic approach that integrates sustainability into the company. Sustainability is a way of thinking about the future of a company over the long term with social, economic, and environmental

considerations (United Nations Educational Scientific and Cultural Organization (UNESCO), 2023).

According to the World Commission on Environment and Development, sustainable development "meets the needs of the present generation without compromising the ability of future generations to meet their own needs". In meeting the needs of the present generation, it is meant that in the concept of sustainability, there is a limitation of resources, and there must be a policy for using resources with long-term priorities.

To achieve sustainability, one can do so in the livestock feed sub-sector. The cattle feed sector is an important sector for economic and social development. But the population of mankind is increasing now, so a great deal of the farmland has become a settlement for the people (Anastassia & Firnanti, 2014). According to the Global Footprint Network, the human population must be smaller than the total land because it is predicted that 40% of humans use a lot of resources but do not give priority to sustainability. Therefore, food and nutrition issues become central in the context of sustainability. Thus, companies running operations need to pay attention to sustainability, in particular in managing natural resources and supporting the SDGs of zero hunger.

2.2. Sustainability Report

A sustainability report is a report issued to the public about the economic, financial, social, and environmental performance of a financial service institution, issuer, or public company in conducting sustainable business (POJK 51/OJK/03/2007). According to Eduardus & Juniarti (2016), today's stakeholders will consider non-financial performance, such as environmental and social performance, in addition to financial performance. Therefore, the function of the sustainability report is to show economic, social, and environmental performance as proof of corporate accountability to stakeholders.

The sustainability report is used by the livestock feed sub-sector to show its performance in support of SDGs of zero hunger. The information provided in the sustainability report is expected to build the confidence of stakeholders. The management concept of stakeholders can drive the company by considering the impact through action and decision-making (Fassin, 2012). The demands of stakeholders are also a motivation for the company to communicate its performance, including its commitment to carry out business activities that are efficient and beneficial to the general public. Reliable and credible disclosure becomes one of the forms of accountability for good and transparent corporate governance practices (Tarigan, 2014).

2.3. Sustainable Development Goals (SDGs)

The SDGs are global goals that can have a positive impact on the world, such as reducing poverty, reducing inequality, and tackling extreme climate change so that by 2030 it will be a sustainable future. To that end, the SDGs set out 17 global goals, one of which is zero hunger.

According to the United Nations, the number of people starving and suffering from hunger has steadily increased since 2014, with the onset of COVID-19 causing stunting. Stunts correlate very closely with calorie deficiencies in the body (Reutlinger & Selowsky, 1976). The current UNICEF conceptual framework used to outline the causes and risks of malnutrition has been developed and is still used to guide policy on this program (UNICEF, 1990). In Indonesia, according to the Global Hunger Index (GHI) for 2021, the hunger rate is still at level 18 in Southeast Asia, at 6.1%, while Indonesia remains at 21.6%. Therefore, the company's role becomes crucial at 21.6%, which is still well below the WHO target of less than 20%.

According to Mirza (2011), poverty, undernourishment, and hunger are closely linked. According to Sutomo et al. (2021), with such populations as Indonesia, the need for food, nutrition, and quality of life became social issues such as poverty and stunting that challenged governments. A population would be called food resistant if it had sufficient, safe, and nourishing amounts of food at any given time for all communities (Damayanti, 2018).

In SDGs of zero hunger, which is zero hunger, there are 18 indicators consisting of 5 dimensions developed by the government of Indonesia through the Ministry of National Development Planning (BAPPENAS). Of the 18 such indicators evaluated, only 11 are relevant as supports from companies, while the other 7 are commitments made by the Government. Thus, the study used only 11 indicators as an analytical tool to evaluate the support of cattle feed sub sector companies for the zero hunger SDGs.

3. Research Method and Materials

3.1. Research Methods

The method used in this research is a qualitative descriptive method performed through content analysis. The samples were taken from all the companies in the livestock feed sub-sector listed on the Indonesian Stock Exchange for a total of 4 companies (population) in 2015–2022, with the total sample observed was 32. The analytical units used are the Sustainability Report, the Annual Report, and the corporate website, which are secondary data from the respective corporate websites.

This research uses content analysis. According to Krippendorff (2022), content analysis is the investigation of social phenomena by tracing data not as physical events but as communications that are created and disseminated to be interpreted according to their meaning for the recipient. The research was conducted by conducting a content analysis of the disclosure of SDGs of zero hunger carried out by the livestock feed sub-sector and giving scores of 0, 1, 2, and 3. Assessment by giving a useful score so that the measurement will be more qualitative by analyzing the information in the sustainability report from qualitatively to quantitatively for further examination (Gunawan & Abadi, 2017).

3.1.1. Research Step

a. Search for research sources

In doing research, the first step is to find a source that matches the topic and title of the research.

b. Analyzing the Sustainability Report, Annual Report, and the company's website by giving a score

The research was carried out by analyzing sustainability reports, financial reports, and the respective corporate websites. The analysis is carried out by looking at each year's company indicator against SDG number 2. If the disclosure only reveals in a description or narrative form, then a score of 1 is given; if the revelation reveals an image and also informs the nominal value of a particular currency, a score of 2 is given; if the disclosure reveals a picture and information about a specific unit such as weight, volume, size, and clear presentation, then a score of 3 is awarded.

If there is no information disclosed, a score of 0 is given, showing that there is no disclosure of the related information and it may explain that there is no activities related to be undertaken. The total score is 33 which is awarded from the possible total score: 3 multiplying by the total indicator: 11 items.

c. Calculates the total score and the average total score disclosure

The final step is to evaluate the total score and average the total disclosure score. Total scores are obtained by summarizing the results of all indicators (per year) for each company. Once the total score is known, the average score will be calculated in the following manner: average disclosure = total score / number of indicators x maximum score. The average figure is 33%–34% considered under disclosure, 34%–66% fall into the medium disclosure category, and 66%–100% fall into the high disclosure category.

4. Results and Discussion

The study uses 11 zero-hunger SDG indicators from the total 18 indicators. There are seven indicators allocated to the government, and therefore are excluded in this study. The

evaluation of such indicators can be a benchmark for companies to measure the extent to which efforts have been made to end hunger and ensure every community has sustainable access to food. The evaluation can be seen in Figure 1.

INDICATOR	YEAR							
	2015	2016	2017	2018	2019	2020	2021	2022
Reduce malnutrition	67%	67%	67%	67%	67%	50%	67%	67%
Prevelance of stunting	8%	8%	8%	17%	17%	33%	50%	50%
Food quality	67%	67%	67%	67%	67%	67%	67%	67%
Secure farmland	17%	25%	25%	50%	0%	33%	33%	50%
Sustainable food production system	42%	17%	17%	50%	33%	33%	50%	50%
Securing livestock	67%	67%	58%	67%	50%	67%	67%	67%
Establishment of a sustainable feed area	8%	17%	17%	33%	33%	17%	0%	0%
Area for sustainability	8%	8%	25%	17%	17%	0%	0%	0%
Ensure the proper functioning of food commodity markets and their proper reduction to limit extreme food price volatility.	33%	17%	17%	17%	50%	50%	75%	33%
Increase cooperation with other companies to produce quality food	67%	67%	67%	50%	0%	33%	50%	17%
Conduct technology development for feed to increase productive capacity	67%	50%	50%	50%	50%	50%	67%	67%

Figure 1. Eleven SDGs Zero Hunger Indicators
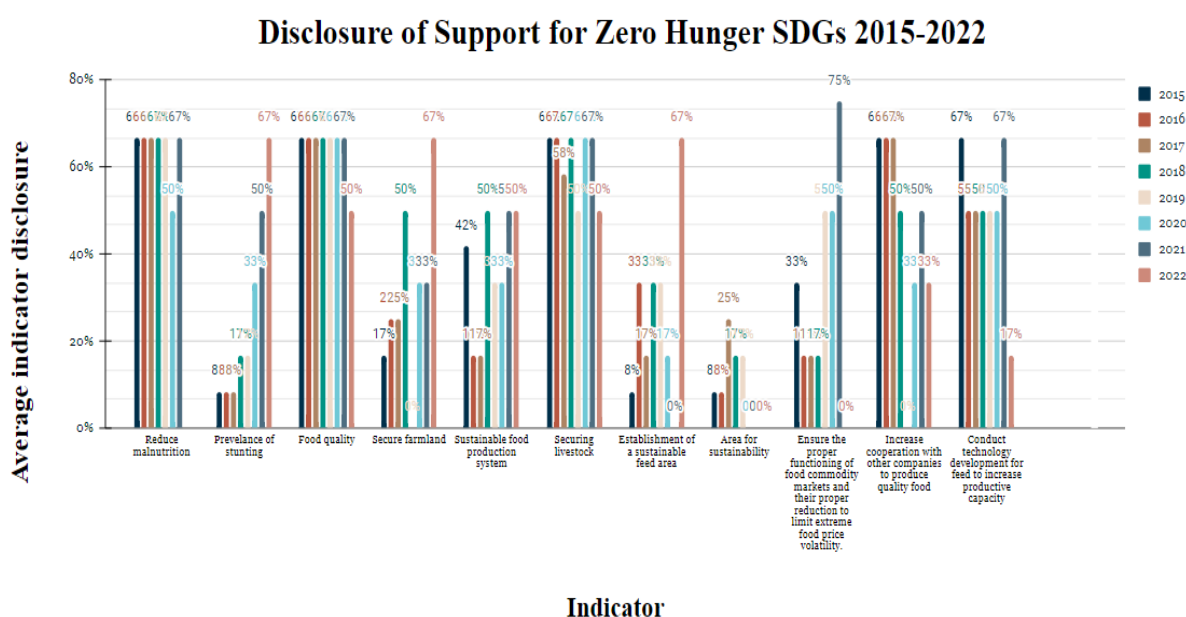

Figure 2. SDGs no. 2 Support Disclosure Chart

Based on the results of the content analysis, Figure 2 shows that the year of 2015 to 2022 stating 4 companies have disclosed indicators of decreasing malnutrition and food quality, this can be seen from the average disclosure every year in all companies, which almost reach 67% (high disclosure). Thai information may explain that the animal feed subsector provides free food to the public to reduce malnutrition or stunting. The food provided is a product of their own company that has high protein and quality, like chicken and eggs.

According to the National Nutrition Status Survey (SSGN), the number of stunting in Indonesia is still at 21.6%, which means Indonesia needs to improve the quality of food and society lifes to reduce stunting which should be lower than 20% (based on WHO). Therefore, the government needs cooperation with companies and community bonds related to nutrition, one of which is livestock feed companies.

Figure 2 also demonstrates the prevalence of stunting in 2015–2019 is quite low; it is in the range of 8%–17%. There are 3 companies that do not provide this information about stunting,

which in fact, in 2015, it was recorded that the number of stunting in Indonesia was at the level of 37%.

According to the Gizi Survey of Balita Indonesia, the government has already made Integrated Healthcare Centers in some areas, especially in remote areas, and the economic conditions of Indonesia are declining at the time. This may be the reason which has led the three companies for not disclosing information about stunting as they may think that the Government has looked after the community. Further, the declining economic condition may also affect the companies to focus more on the business side, rather than helping the community. Therefore, this stunting information is absent in the sustainability reports from 2015 to 2019.

The correlation of economic condition and SDGs is also supported by Khan et al. (2021), who states that the financial economy has a significant negative impact on social support. Many companies, especially stakeholders, are more focused on how to improve the company's economy to survive in times of crisis. However, according to Partiwi & Herawati (2022), the SDGs are concerned that social improvement is becoming a very important target for companies to reduce social risk problems. Hence, it is suggested that regardless of the economic performances, supporting SDGs needs to be considered.

On the other hand, the support for prevalence of stunting has increased by 33%–50% (medium disclosure), which may explain that companies have started disclosing information about stunting prevalence to support the zero hunger SDGs in 2020–2022. This effort is also identified as responses from companies to obey the health minister announcement which asked companies to support reducing stunting and the Government will check these supports starting in 2020. Currently, all companies have long-term strategies that will continue to contribute to reducing stunting to the government's target of 14% by 2024.

NO	ANIMAL FEED SUB-SECTOR	AVERAGE DISCLOSURE (PER YEAR)							
		2015	2016	2017	2018	2019	2020	2021	2022
1	COMPANY 1	58%	48%	48%	55%	42%	48%	55%	48%
2	COMPANY 2	39%	42%	48%	55%	36%	24%	36%	36%
3	COMPANY 3	36%	39%	30%	42%	36%	61%	55%	55%
4	COMPANY 4	30%	24%	24%	24%	18%	24%	45%	30%
	TOTAL (PER YEAR)	41%	39%	38%	44%	33%	39%	48%	42%

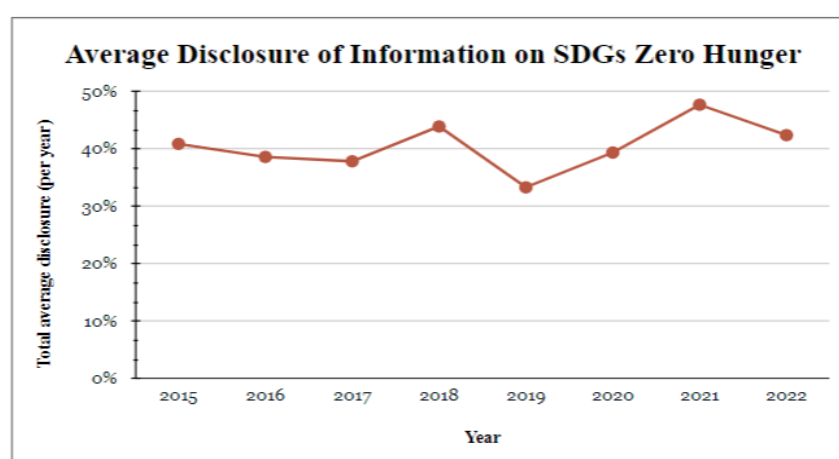**Figure 3**. Total Average Disclosure of All Companies

Figure 4. SDGs no. 2 Total Average Disclosures

The Figure 4 shows that the average annual disclosure of information is the lowest among other years, due to a decline in disclosures regarding the area designation and the size of the sustainable area, resulting in a figure of 33% (low disclosure). This lacking of information was

due to a decrease in disclosures regarding the area designation and the size of the sustainable area, resulting in a figure of 33% (low disclosure). Analysis of these figures is informed in the annual report and sustainability report. As a result of this analysis, two companies do not disclose land indicators, and the fourth company only has an annual report, so support for the zero hunger SDGs is measly. In the fourth annual report, the company generally discloses financial performance, so the disclosure of the SDGs is not visible, unlike the other companies, whose annual reports are accompanied by disclosures of the MDGs. The first is due to the contract to borrow one of the farms for only five years, which expired in 2019, and the company has extended the contract.

In addition, 2019 saw a decline in the indicators of raising the farm because four companies did not reveal them, hence when viewed in table 1, the figure was 0%. This is because almost all of the company's land does not belong to the company's assets, but the company gets loans from other companies, so the company does not disclose that it guarantees farmland. Although the company does not have personal assets, it should continue to maintain maintenance continuously, reporting to the SDGS in full detail since indicators in the SDGS will become critical to long-term stakeholders (REFF). Juwita & Hariyanto (2016) stated that in order to improve sustainable livestock feed land, companies should support and maintain the land properly and be detailed in the sustainability report on the farm land.

On the average disclosure table for the zero hunger SDGs, there are no significant changes. The average disclosure of SDG zero hunger is at a medium disclosure level that is in the range of 38%–48% in 2015–2018 and 2020–2022, while in 2019 it is at a low disclosure level of 33%. The increased trend from 2019 to 2020–2022, reinforced by technical advancement, is due to the fact that businesses have made significant disclosures about how to eliminate nutritional deficiencies, ensure livestock, and guarantee food quality. Additionally, the company has started to detail the prevalence of stunting (Sukmawati et al., 2023). The location of the cattle and the size of the sustainable area, however, are the two things that are revealed the least.

5. Conclusion

The results of this study shows that there are four companies with a total average disclosure of 38%–48% (medium disclosure), less than 50% in doing publicity to support the zero hunger SDGs. This is due to the fact that no corporation discloses much information. There are 33% (low medium), which means there is one company that is less supportive of SDG zero hunger because there is no sustainable reporting, so there is limited information. Three other companies have already started supporting the zero hunger SDGs in their sustainability reports or in their annual reports, such as through strategies to reduce malnutrition. Nowadays, such disclosure is becoming a very important matter for the public and, in the judgment of stakeholders, for a long-term strategy.

According to the discussions and the conclusions that have been presented, some suggestions in the bog-food sector play a rather closely related role in the social life of producing food. The companies should be more aware of the current issue, including nutritional deficiency caused by protein deficiency. According to the Ministry of National Development Planning (BAPPENAS), companies making disclosures related to the issue can use the benchmarks of the 11 SDG zero hunger indicators, mainly related to sustainable land, large sustainable areas, and guaranteeing farmland. It also helps stakeholders see the company's commitment to business activities, especially in the social sphere.

For the government, it is expected to be able to work with several companies in realizing the zero hunger SDGs, especially those that produce food and monitor undernourished communities, such as free and refining and education. With the prevalence rate of stunting based on the nutritionists' index, it is expected that the Government should consider which region is most in need, which is also beneficial for long-term strategy planning.

For future studies, it is expected to conduct interviews with companies and government, especially for those who will do the same research in conducting analysis on other sectors that have influence, such as the community or students, to support the zero hunger SDGs in the sustainability report using 11 indicators and can convey benefits from such performance.

References

Aidoo, B., Boateng, S. K., Kissi, P. S., & Ofori, I. (2016). Effect of Problem-Based Learning on Students' Achievement in Chemistry. *Journal of Education and Practice*, *7*(33), 103–108.

Anastassia, & Firnanti, F. (2014). Faktor-Faktor Yang Mempengaruhi Volatilitas Harga Saham Pada Perusahaan Publik Nonkeuangan. *Jurnal Bisnis Dan Akuntansi*, *16*(2), 95–102.

Eduardus, E., & Juniarti, D. (2016). Kinerja Sosial Perusahaan dan Kinerja Keuangan Perusahaan yang Diukur Menggunakan Tobin's q. *Business Accounting Review*, *4*(1), 517–528.

Fassin yves.fassin@vlerick.com, Y. (2012). Stakeholder Management, Reciprocity and Stakeholder Responsibility. *Journal of Business Ethics*, *109*(1), 83–96.

Gunawan, J., & Abadi, K. (2017). Content analysis method: A proposed scoring for quantitative and qualitative disclosures. *Handbook of Research Methods in Corporate Social Responsibility*, 349–363. https://doi.org/10.4337/9781784710927.00028

Hebestreit. (2016). Cross sextional and longitudinal association energy intake and BMI Z Score In European Children. *International Journal of Behavioral Nutrition Anh Physian 13*.

Juwita, I., & Hariyanto, O. I. B. (2016). Pengaruh Daya Tarik Wisata Terhadap Keputusan Berkunjung Wisatawan Nusantara. *Jurnal Pariwisata*, *3*(1), 20–28.

Khan, M., Syed F, A., Hamad Z, A., Muhammad N, T., Saif, S., KHan, M., & Khan, S. T. (2021). Epidemiology and Progress So Far. *Moléculas*, *26 (1)*, 1–25.

Krippendorff, K. (2022). Content Analysis: An Introduction to Its Methodology. *Content Analysis: An Introduction to Its Methodology*. https://doi.org/10.4135/9781071878781

Mirza, D. S. (2011). Pengaruh Kemiskinan, Pertumbuhan Ekonomi, dan Belanja Modal Terhadap IPM Jawa Tengah. *JEJAK: Jurnal Ekonomi Dan Kebijakan*, *4*(2), 102–113.

Partiwi, R., & Herawati, H. (2022). Pengaruh Kepemilikan Institusional, Leverage Dan Ukuran Perusahaan Terhadap Kinerja Perusahaan. *Jurnal Kajian Akuntansi Dan Auditing*, *17*(1), 29–38. https://doi.org/10.37301/jkaa.v17i1.76

Sukmawati, E., Marzuki, K., Batubara, A., Afifah Harahap, N., & Weraman, P. (2023). The Effectiveness of Early Childhood Nutrition Health Education on Reducing the Incidence of Stunting. *Jurnal Pendidikan Anak Usia Dini*, *7*(4), 4002–4012. https://doi.org/10.31004/obsesi.v7i4.4846

Sutomo, Hasanah, N., Arnida, & Sriyono, A. (2021). *Standardisasi Simplisia Dan Ekstrak*. *8*, 101–110.

Tarigan, J. dan H. S. (2014). Pengungkapan Sustainability Report dan Kinerja Keuangan. *Jurnal Akuntansi Dan Keuangan*, *Vol. 16, N*, Hal 88-101.

United Nations Educational Scientific and Cultural Organization (UNESCO). (2023). *Global education monitoring report 2020: Inclusion and education: All means all*.

World Health Organization (WHO). (2021). Asthma Fact Sheets. *Asthma Fact Sheets*.

Yuniastuti, E., Anggita, A., Nandariyah, & Sukaya. (2018). Local durian (Durio zibethinus murr.) exploration for potentially superior tree as parents in Ngrambe District, Ngawi. *IOP Conference Series: Earth and Environmental Science*, *142*(1). https://doi.org/10.1088/1755-1315/142/1/012029