

Online Learning System of Learning Mathematics at SMAN 1 Kampar Kiri Hilir: Learning Difficulties Analysis Study

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Abstract. This study aims to determine the factors behind the literacy difficulties of undergraduate mathematics in online literacy at SMAN 1 Kampar Kiri Hilir. The subjects in this study were class XI wisdom students at SMAN 1 Kampar Kiri Hilir for the academic year 2021/2022 and class XI wisdom students with a population of 68 ulama consisting of 15 male and 53 female scholars. This form of exploration is descriptive qualitative. The data collection method in this study was carried out using a check system, videlicet, by distributing online questionnaires through Google Forms which were transferred via WhatsApp Group. Results show that online literacy is carried out at schools SMAN 1 Kampar. Overall, there are 50 who find it difficult in the online tutoring and literacy process. 48.53 students find it difficult in the network aspect of sharing in the online tutoring and literacy process, 41.18 students have difficulty in the high order when sharing in the online learning process. In tutoring and online literacy, 45,59 students have difficulty understanding the material guided by school teachers, 92,65 students have difficulty installing communication either in the form of laptops or androids, 80,88 students have difficulty communicating with teachers.

Keywords: *Descriptive Analysis, Learning Difficulties, Online Learning*

1. INTRODUCTION

Education is an effort to produce a literacy atmosphere and a literacy process so students can struggle to develop their skills in having religious-spiritual strength, tone control, personality, intelligence, noble character, and the ideals demanded by themselves, society, nation, and state. Based on the law, education is a need that needs to be fulfilled in the life of society, nation and state. Mathematics is one of the most important sciences in our life. Many things around us are always related to mathematics. Starting from the smallest to the big things will always be related to mathematics. At least basic calculations involving addition, subtraction, multiplication and division must be mastered perfectly. Everyone, whoever he or she must be in contact with one of the concepts above in everyday life [1]. Mathematics as one of the subjects that occupies an important part in education. So, even though it is a subject that is considered important, mathematics is considered a complicated subject by some students. Whereas mathematics learning is important to be given to students, because through mathematics learning students will be trained to think critically, creatively, analytically, and systematically [2].

Many students view mathematics as the most challenging field of study, even though everyone should need to understand and learn because mathematics can solve everything problem in life [3]. Therefore, the use of an applicable online learning model is required to help students understand mathematics. A good learning process must be complemented by

facilities and the ability of teachers to use and utilize learning conditions effectively. Teachers must be more creative and should use the facilities offered by information technology [4].

Due to Covid-19 (Corona Virus Disease) mathematical literacy is hampered and cannot meet face-to-face between teachers and students and other scholars. Online learning itself utilizes the internet network to help interact during the learning process [5]. Mathematics is to be taught in an interesting way, using real examples in everyday life, and incorporating the values of local wisdom [6]. So, due to the Covid-19 outbreak, students are asked to study at home using social media or online. As a result, many students have difficulty working on the questions that have been given by the teacher using social media. Therefore, there is a need for innovation in the online learning process so that it continues to run optimally and can achieve learning objectives [7].

The learning process is carried out using social media, because that is one way that can be used in the current epidemic conditions. In the online learning system students can take advantage of social media with various applications that exist in electronics such as mobile phones, laptops, computers, and others. There are many applications that can be used to support online learning, such as Google Classroom, Zoom Meeting Application, Youtube, Whatsapp and others. Therefore, with the era of increasingly developing technology, learning programs are directed to be able to take advantage of technology properly [8]. With rapid technological advances and bringing changes to the field of education, it is important for educators and students to learn and be able to use technology in learning [9].

Low learning outcomes are indicators of student learning difficulties in learning mathematics. Some of these indicators are 1) it is challenging to master mathematics which is characterized by low learning outcomes and students need a long time to master mathematics 2) the high gap in student learning outcomes obtained by students, 3) many students cannot achieve the minimum standards set by the school, 4) students are not interested in learning mathematics as a result of the difficulty of understanding mathematics learning [10], [11] Difficulty is a certain condition marked by the presence of obstacles in achieving goals, so it requires a harder effort to overcome them [12]. Therefore, every student must try as much as possible because by trying to overcome the difficulties that hinder the achievement of a target or goal to be achieved. Online learning is learning activities supported by the internet network and does not require face-to-face meetings because of the long distance between education and students [13]

The low self-concept is the cause of the difficulty of students learning online. The self-concepts are 1) lack of student initiative to learn independently from sharing resources and tend to wait for an explanation from the teacher, 2) lack of initiative to do homework, so they only expect help from other students without trying to complete the task., 3) the goals or targets of students' online learning for mathematics lessons are still limited to the acquisition of the grades achieved, regardless of the process and students' ability to understand the material, 4) Some students still tend to spend time on things that are not useful than completing online assignments given by the teacher, 5) students are easily

discouraged if there is a material that is not understood even students stop trying to learn or ask friends or teachers in solving the school assignments [14].

The purpose of the study was to determine the difficulties experienced by students when learning mathematics through an online learning system. This research has important benefits for schools, teachers and researchers, namely: 1. For schools, it can be used as data to find out the difficulties experienced by students when online learning takes place 2. For teachers, it can be used as a reference in perfecting the online learning process 3. For researchers, can train skills and add experience as a provision in carrying out teaching assignments. Based on this description, the researcher wants to conduct research to find out what difficulties are experienced by students when learning mathematics through an online learning system with the title "Analysis of Student Learning Difficulties in Mathematics Subjects Through Online Learning Systems".

2. RESEARCH METHOD

The form of this research is descriptive qualitative. Qualitative research is a naturalistic research method because the research is carried out in natural conditions [15]. This type of research will be used to describe and describe the results of the analysis of mathematics learning difficulties in online learning during the Covid-19 emergency in class XI students of SMA N 1 Kampar Kiri Hilir. With 34 students in class XI IPA1 and 34 students in XI IPA2, the total population is 68 students.

The data collection technique used by the researchers in this study is the survey method, namely by distributing online questionnaires. Questionnaires will be distributed to respondents through Google Forms sent via WhatsApp Group messages. This technique aims to obtain data related to the level of difficulty in learning mathematics with online learning during the Covid-19 emergency for class XI students of SMA N 1 Kampar Kiri Hilir.

Based on the results of interviews with mathematics students in class XI IPA SMAN 1 Kampar Kiri Hilir, students have difficulty understanding the material that has been given by the school teacher, the internet network is weak, does not have a data quota to take part in ongoing learning, besides that students also feel bored learning through the online system, because no interaction between teachers and students, students and other students, students find it difficult to cooperate with friends during online learning, the environment where students live is less supportive so students are often late in submitting assignments and some do not submit assignments.

Table 1. Questionnaire grid

No	Aspect	Indicator	Item Number
1.	technical difficulties	A. signal and quota difficulties	1, 2, 3, 4, 17
		B. The inability of students in learning mathematics through online learning systems	11, 12, 13, 14, 15, 18
2.	Learning Implementation	C. Teacher's explanation	7, 8
		D. Student participation	20, 21, 22
		E. Assignment	9, 10
3.	Difficulty External Factors (Environment, Teachers, Family, Economy)	F. economy crisis	6
		G. Support from the environment and parents	5, 16, 23, 24, 25, 26
		H. Support from school	19
NUMBER OF POINTS			26

In this study analyzed using analytical techniques that refer to the opinion of [16] [16]. Namely (1) data reduction (data reduction), (2) data display (data exposure), (3) conclusion drawing/verification (withdrawing a conclusion). Reducing data can be interpreted as summarizing data from various information, selecting basic and essential information according to the study, finding themes and patterns appropriate to the study so that a complete picture of the data is obtained.1 Kampar Kiri Hilir to the teacher as a teacher. The conclusion in this study is based on the results of the analysis of the data obtained. The conclusion is based on the donation of data which ends with the conclusion about the students' literacy difficulties in mathematics through literacy from the network (online).

3. RESULTS AND DISCUSSION

Based on previous research conducted by Sihhatul Hayat in 2021 on Online Learning Difficulties for Class X Mathematics and Natural Sciences Students in the History of Islamic Culture Subject at MAN Surabaya City. Based on the results of this study, it was

found that students' online learning difficulties include, students cannot master the subject matter, there are two factors that cause learning difficulties, namely internal factors, namely being unwell or sick, interest and talent factors are not appropriate, motivational factors. External factors, namely, family factors, whether or not the internet network is stable, and students' readiness factors before carrying out online learning. The solution is that students must maintain health, increase interests and talents, increase motivation, ask peers, teachers must complete and check equipment before conducting online learning, prepare quotas, facilitate teaching materials. This student learning difficulty questionnaire aims to find out what are the causes that prevent students from participating in mathematics lessons during online learning.

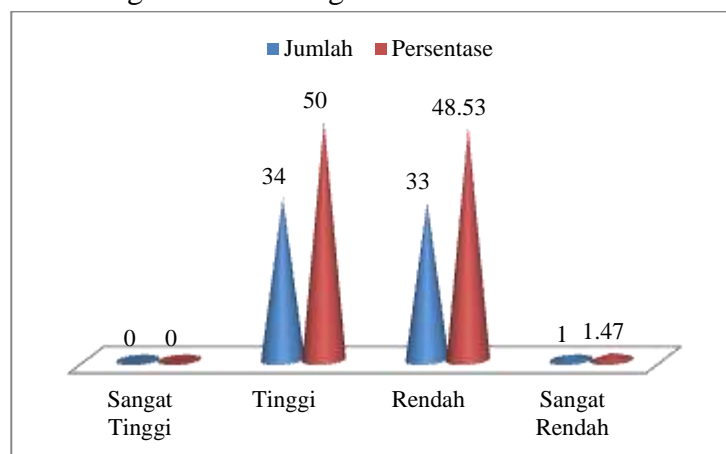


Figure 1. Graph of Student Learning Difficulties

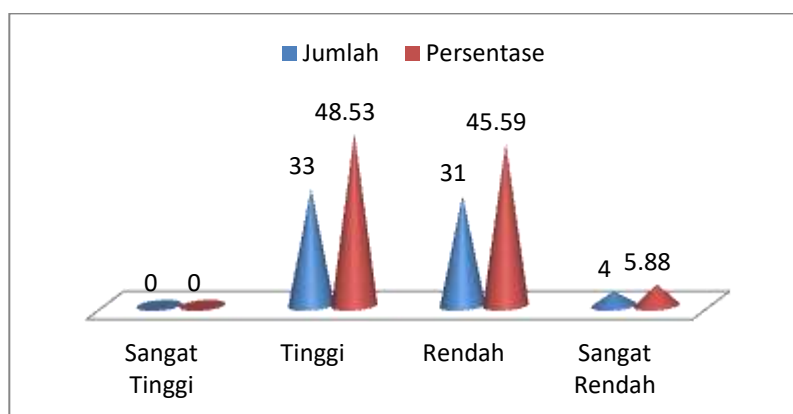


Figure 2. Graphics of Network Difficulty Indicators

The indicator of network difficulty experienced by students is quite high and almost all students have difficulty in this indicator. A total of 33 students were in the high category with a percentage of 48.53, as many as 31 students had network difficulties in the low category with a percentage of 45.59 and 4 students were in the very low category with a percentage of 5.88, so as many as 33 students had learning difficulties due to the network is not good and this really affects student learning.

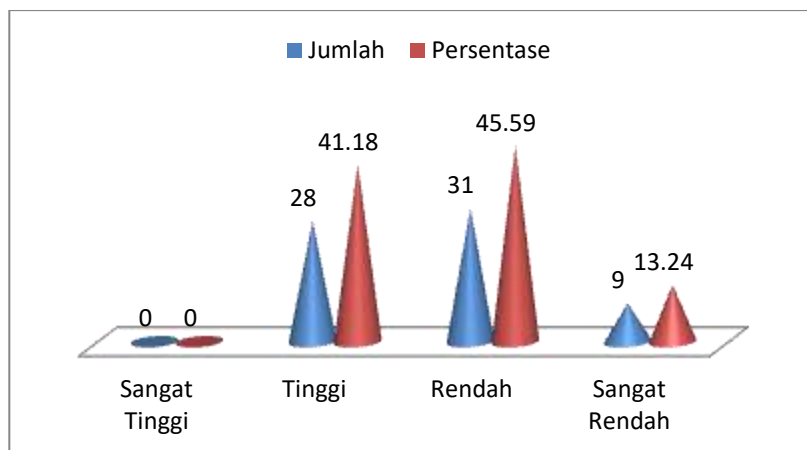


Figure 3. Graph of Economic Difficulty Indicators

Indicators of economic difficulties for students can be seen that on average students have complaints in their economy, circumstances cannot force students to buy quotas in order to be able to do online learning during the pandemic, even some students sometimes can't take lessons because they don't have quotas, and miss lessons. and late submissions. The results of this study were 21 students in the high category, meaning that 21 students felt too difficult in the economy with a percentage of 41.18, as many as 31 students were in the low category and the percentage was 45.59 and as many as 9 students were in the very low category with a percentage of 13.24.

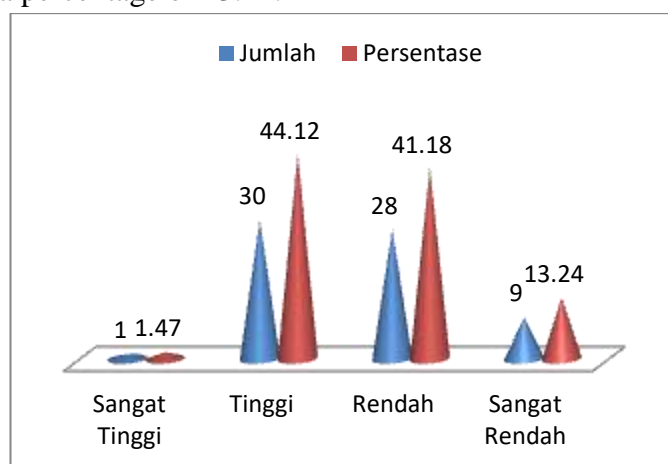


Figure 4. Graphics of Students' Difficulty in Understanding the Material

The indicator of students' difficulty in understanding the material is very high and can affect students' knowledge. As many as 1 student in the very high category of difficulty in understanding the material with a percentage of 1.47, as many as 30 students in the high category with a percentage of 44.12, 28 students in the low category with a percentage of 41.18 and 9 students in the very low category with a percentage of 13.24. From the results of this study, it can be concluded that almost all of the subject population have difficulty in understanding the material.

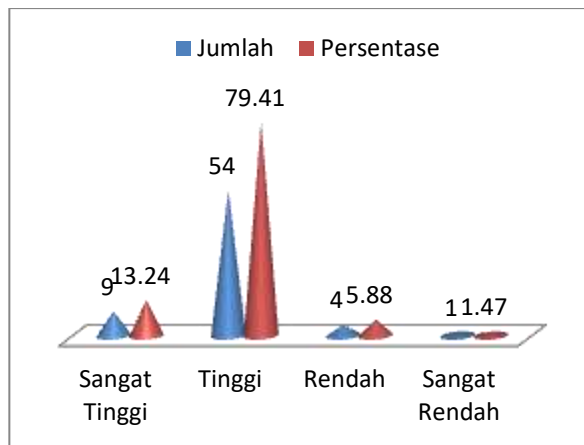


Figure 5. Graphics of indicators that do not have the means to participate in learning

A total of 54 students in the high category with a percentage of 79.41, as many as 9 students in the very high category with a percentage of 13.24, as many as 4 students in the low category with a percentage of 5.88 and as many as 1 student in the very low category with a percentage of 1.47. This means that the number of students who have learning difficulties is because they do not have mobile phones or laptops, if the pandemic continues and students always study online, many generations will have difficulty understanding lessons.

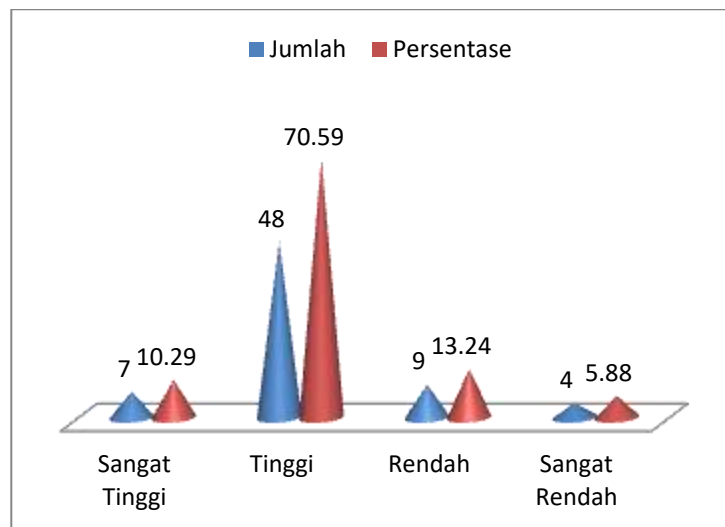


Figure 6. Graph of the difficulty of students communicating with teachers

Indicators of students' difficulty communicating with teachers the number of students who have difficulty is in the high category, as many as 48 students find it difficult to communicate with teachers with a percentage of difficulty 70.59. this is due to online learning during the pandemic, so many students find it difficult to understand the material and have little time online.

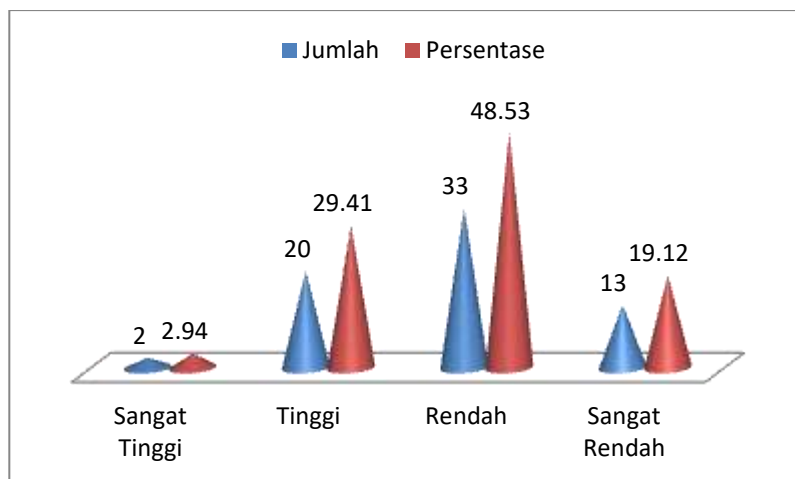


Figure 7. Graph of Difficulty Communicating With Friends

Difficulty communicating with friends is one of the causes of student difficulties in learning. A total of 20 students experienced high learning difficulties due to the absence of friends to exchange ideas with a percentage of 29.41. This means that in learning there is also cooperative learning so that cooperative methods can also help students in learning, while during the pandemic students learn independently.

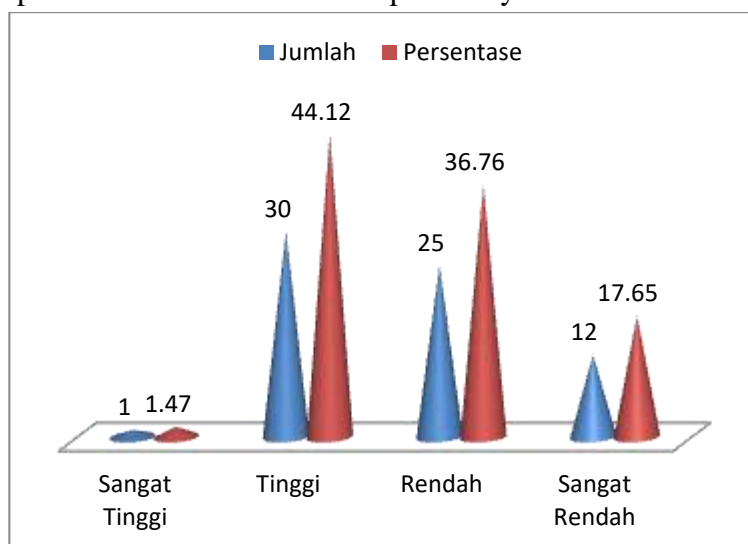


Figure 8. Graph of Student Difficulty Asking Parents for Help

This indicator is one of the causes of students' learning difficulties, as many as 30 students have difficulty asking for help from parents because their parents work and also parents feel they don't really understand math. Based on the survey, as many as 36.8% of parents' education level was junior high school and 32.4% mother's education level was elementary school. This means that communication difficulties are the causes that affect student learning.

4. CONCLUSION

Based on the results of the research above, it can be concluded that online learning carried out during this pandemic is face-to-face online learning, but the obstacle in

participating in online learning is not only the problem of space and time, but the many factors and causes experienced by students in learning difficulties. Based on the results of research and surveys conducted by researchers, it can be concluded that: Overall, there are 50% feel difficulties in the online teaching and learning process. There are 48.3% students find it difficult in the high category in the network aspect in participating in the online teaching and learning process. There are 41.18% of students have difficulty in the high category when participating in the online teaching and learning process. As many as 45.59% of students find it difficult to understand the material taught by the teacher. As many as 92.65% of students have difficulties in terms of communication facilities, both in the form of laptops and Androids. As many as 80.88% of students have difficulty communicating with teachers. As many as 32.35% of students have difficulty communicating with friends. As many as 45.59% of students have difficulty communicating with parents to ask for help in completing assignments.

REFERENCE

- [1] Ariesandi Setyono, *Mathemagics*. Jakarta: Gramedia Pustaka Utama, 2010.
- [2] H. Retnawati, "Student Mathematical Connection Ability in Representing Multiplication at the Elementary School," in *Journal of Physics: Conference Series*, 2019, vol. 1254, no. 1, p. 12080.
- [3] mulyono abdurrahman, *Pendidikan Bagi Anak Berkesulitan Belajar*. jakarta: Rineka Cipta, 2010.
- [4] Suripah, "Mengembangkan Keterampilan Mengajar Berbasis ICT Bagi Calon Guru Abad XXI," *Pros. KMP Educ. Res. Comference*, pp. 676–684, 2017.
- [5] A. Aholongan, S. Suripah, S. Amelia, and F. Yolanda, "Minat Peserta Didik Terhadap Penggunaan Software Algebrator Sebagai Media dalam Proses Pembelajaran Daring pada Materi Bilangan," *J. Cendekia J. Pendidik. Mat.*, vol. 5, no. 2, pp. 1834–1841, 2021, doi: 10.31004/cendekia.v5i2.736.
- [6] N. S. Suprpto, "ISSN 2615-3939 IAIN Kudus <http://journal.stainkudus.ac.id/index.php/jmtk>," *J. Pendidik. Mat.*, vol. 2, no. 2, 2019.
- [7] W. D. Susanti and Suripah, "Efektivitas Website sebagai Media Pembelajaran Matematika Selama Masa Pembelajaran Daring," *Edumatica J. Pendidik. Mat.*, vol. 11, no. 1, pp. 73–83, 2021, doi: 10.22437/edumatica.v11i01.12225.
- [8] K. Adila and Y. Harisah, "Persepsi Siswa Kelas x MIPA SMA Negeri 1 Bojong Terhadap Pembelajaran Online pada Pelajaran Matematika," *Semin. Nas. Pendidik. Mat.*, pp. 401–406, 2020.
- [9] Z. Zetriuslita, N. Nofriyandi, and E. Istikomah, "the Effect of Geogebra-Assisted Direct Instruction on Students' Self-Efficacy and Self-Regulation," *Infin. J.*, vol. 9, no. 1, p. 41, 2020, doi: 10.22460/infinity.v9i1.p41-48.
- [10] Zainal Arifin, *Evaluasi Pembelajaran*. Bandung: PT rosda karya, 2012.
- [11] S. Hadi and D. Andrian, "Detecting Teacher Difficulties in Implementing the Local Curriculum Developed by the Local Government," *New Educ. Rev.*, vol. 53, no. 3, pp. 250–260, 2018.
- [12] Slameto, *Belajar dan Faktor – Faktor Yang Mempengaruhinya*. jakarta: Rineka Cipta, 2010.
- [13] A. Sadikin and A. Hamidah, "Pembelajaran Daring di Tengah Wabah Covid-19,"

- Biodik J. Ilm. Pendidik. Biol.*, vol. 6, no. 2, pp. 109–119, 2020, doi: 10.22437/bio.v6i2.9759.
- [14] I. B. Yulia and A. Putra, “Kesulitan Siswa Dalam Pembelajaran Matematika Secara Daring,” *Refleks. Pembelajaran Inov. Vol. 2, No. 2, 2020*, vol. 2, no. 2, pp. 327–335, 2020.
- [15] A. Fauzy and P. Nurfauziah, “Kesulitan Pembelajaran Daring Matematika Pada Masa Pandemi COVID-19 di SMP Muslimin Cililin,” *J. Cendekia J. Pendidik. Mat.*, vol. 5, no. 1, pp. 551–561, 2021, doi: 10.31004/cendekia.v5i1.514.
- [16] Sugiyono, *Metode Penelitian Kuantitatif Kualitatif dan R & D*. Bandung: Alfabeta., 2012.