

UNIVERSITAS TERBUKA ONLINE LEARNING STRATEGY IN THE DEMOGRAPHIC BONUS ON MADURA ISLAND

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Abstract

Indonesia has the fourth largest population in the world and has the most islands in the world (demographic bonus plus geography). This condition is a challenge for learning in Indonesia at all levels. This study was conducted to capture the strategies carried out by Universitas Terbuka as a learning reinforcement for residents in the Madura archipelago. This study is a qualitative descriptive study with a case study approach that uses data collection techniques through direct observation and in-depth Interview with informants consisting of students, alumni, village government officials, and community leaders. From the research conducted, it was found that the online learning model carried out by Universitas Terbuka is one form of learning that is suitable for the Madura archipelago because students can learn without having to come to campus, which requires large costs. It's just that the learning model that has been running, namely based on text modules, needs to be strengthened by adapting digital technology such as synchronous webinars, so that there is active interaction between teachers and students.

Keywords: Distance Education, Demographic Bonus, Madura Island

1 INTRODUCTION

Indonesia is currently known as one of the countries with the largest population in the world with a population of 277.7 million people (Annur, 2023). Indonesia is ranked fourth after China, India, and the United States. With these conditions, Indonesia will face a demographic bonus phenomenon from 2020 to 2030. In these years, the productive-age population, aged 15-64 years, is at its maximum position, when compared to the age group that is considered unproductive, namely 0-14 years old, and 65 years and over. This can also be interpreted as an increase in the number of potential workers which can generally improve the Indonesian economy (Jati, 2015).

The demographic bonus makes Indonesia potentially a prosperous country, with economic growth that exceeds other countries. However, the demographic bonus does not automatically make Indonesia a developed and prosperous country. Some conditions must be met. Among others, adequate human resources, competitive levels of education and skills, and other things

that support the economy such as the availability of jobs. The demographic bonus can be considered a double-edged sword phenomenon, where it can be a momentum to boost quality in various sectors, especially the economy. However, on the other hand, it can be an obstacle if human resources are not prepared in terms of quality (Widodo, 2016).

The quality of human resources is determined by the quality of education, unfortunately, the current condition of Indonesian education is not encouraging. Education in Indonesia is still in a bad position, including the low quality of education, low education services, as well as low quality of higher education, and low literacy skills of children. Automatically, this will have a direct impact on the graduates of basic and higher education produced (Widodo, 2016). It cannot be denied that education is a strategic issue. The government is obliged to provide services and facilities and guarantee the provision of quality education for citizens without discrimination. Efforts to improve the quality and development of the education sector are always the main policy regulated by the country. Unfortunately, this still cannot be implemented optimally (Febrianto & Sulaiman, 2014).

As part of the Republic of Indonesia, Madura Island will also face the demographic bonus phenomenon. Currently, the total population in Madura has reached 4,060,713 people. The population is spread across Bangkalan, Sampang, Pamekasan, and Sumenep. BPS, 2024). However, the availability of educational infrastructure in Madura is still considered less than the population, especially in higher education. The majority of the average education of the Madurese people is high school (SMA) or Islamic high school (MA) (Febrianto & Sulaiman, 2014).

The issue of access to education is then considered to be one of the challenges in facing the demographic bonus wave. The solution offered is the implementation of the Distance Education (Distance Learning) model. The Distance Learning model no longer requires physical support for facilities and infrastructure. Unlimited class capacity and flexibility of education services that can be accessed by anyone. The main characteristic of the Distance Learning model is the physical separation between students and instructors/teachers for almost the entire learning process (Yunus & Yuliana, 2022).

Universitas Terbuka (UT) as one of the educational institutions has implemented the Distance Learning model since its establishment. For more than 40 years, UT has conducted Distance Learning throughout Indonesia. The learning model organized by UT is carried out flexibly both offline and online. Online learning is considered to be an educational model that can reach

anyone and anywhere. The implementation of Distance Learning in the form of online learning, both synchronously and asynchronously, is expected to be a solution to the limited physical access to education. And can reduce education costs which are relatively affordable when compared to conventional forms of learning. This is the background, of whether UT's online learning can be a solution to providing access to education in facing the demographic bonus on Madura Island.

However, the problem that arises in the implementation of Distance Learning is access to information technology as an indicator of the success of Distance Learning implementation. This is because access to information technology in several regions, especially island regions, is still limited due to a lack of infrastructure. The gap in the ability to understand information technology in the community also hinders the success of the Distance Learning model. In addition to the issue of information technology, the implementation of Distance Learning will face differences in the paradigm of educational concepts in society. For example, the Distance Learning model is considered foreign to some people who are accustomed to conventional learning based on face-to-face classes. The element of cultural dynamics also influences the success of Distance Learning implementation, for example, women have been regulated by their family's education level. Gender issues are still a problem in some circles of society, especially those who still maintain traditions.

The obstacles that arise are expected to improve the learning strategies carried out by UT, especially online learning to face the demographic bonus. Online learning is considered suitable for application in Madura, especially in the island region. However, learning is said to be successful if students can feel the benefits to the maximum. Therefore, UT must always adapt to environmental changes and the dynamics of the development of the era. Have the learning strategies that have been carried out so far been following the needs of the community for an effective learning model?

Implementing Distance Learning is expected to empower human resources and successfully make the demographic bonus potential for progress and development. So can be used as a reference material related to the demographic bonus, which comprehensively reviews the strategy for managing the demographic bonus. As well as a reference that enriches information and knowledge about Distance Learning. In turn, it will make it easier to map out a good and appropriate strategy to study the demographic bonus from the perspective of the availability of access to education.

2 METHODOLOGY

The qualitative descriptive approach uses the case study method as an analysis tool. The empirical case study method aims to observe the phenomena that occur during the observation in-depth (Sugiyono, 2011; Yin, 2005). The case study is a strategy in which researchers carefully investigate an event using a variety of data collection procedures (Creswell, 2014).

In this study, the data collection technique was in-depth Interviews and observations. The Interview technique was carried out to produce complete, detailed, and holistic information. (Rahardjo, 2017). As for the location the Interviews were conducted in Bangkalan Regency, Sampang Regency, Pamekasan Regency, and Sumenep Regency, East Java. The determination of informants was carried out using purposive sampling techniques, namely based on considerations so that the data obtained could be more representative. The limit on the number of informants was not determined and was considered adequate if the data was saturated (Moleong, 2018).

Interviews are conducted by visiting and meeting informants and then conducting unstructured Interviews with. This means that questions do not always refer to the list of questions that have been made but adjust to the answers given by the informant. Two types of informants are sources of information. The first is Key informants. They are informants who are directly involved and have various basic information needed. The second is supporting informants, namely those who can provide information even though they are not directly involved in social interactions.

Table 1. List of Informants

No	Initials	Attribution	Address
1	H-D	Open University Alumni	Sapeken Islands
2	W-N	Open University Alumni	Kangean Islands
3	S-N	Open University Alumni	Pamekasan Regency
4	D-M	Open University Alumni	Bangkalan Regency
5	U-A	Open University Students	Bangkalan Regency
6	A-N	Open University Students	Bangkalan Regency
7	A-C	Student Parents	Sumenep Regency
8	H-S	Student Parents	Sumenep Regency
9	M-Z	Student Parents	Bangkalan Regency
10	D-P	Education Practitioner	Bangkalan Regency
11	M-S	Village head	Arjasa District
12	S-Y	Village Secretary	Arjasa District
13	B-A	Village Secretary	Sapeken District
14	S-T	BPD Member	Sapeken District
15	A-W	Islamic Boarding School Caretaker	Sapeken District

16	S-K	Islamic Boarding School Caretaker	Arjasa District
17	A-N	Youth Figure	Sapeken District

To obtain valid data, cross-checking (triangulation) is carried out on the collected data. Triangulation is carried out in two steps, first, technical triangulation. There are two data collection techniques used, namely in-depth Interviews and observations, the data that has been successfully collected is then cross-checked. Data submitted by informants during the Interview is cross-checked with other informants who are interviewed afterward, and so on. So not all data submitted by informants is taken as research data, but only relevant data based on cross-checking is collected. Second, source triangulation of data sources from informants. The informant's Interview consist of various groups. Each group of informants consists of several informants. This is intended as a form of triangulation of data sources, namely informants.

The last step is data analysis using Miles, Huberman, and Saldana's data analysis techniques, there are four stages of qualitative research data analysis miles (Miles et al., 2014). First, data collection from in-depth Interviews with and observations. Second, data selection, the data that has been collected is sorted and selected that is suitable for the research topic, and data that is not appropriate is set aside or discarded. Third, data presentation is in the form of text narratives, presentation of tables, and photos as an effort to strengthen the text narrative. Fourth, concluding, at the end a conclusion is drawn on the data that has been presented and reviewed or discussed.

3 FINDINGS AND DISCUSSION

Demographic bonus is a condition where the proportion of the non-productive population (<15 and >64 years) is less than the productive population. Without us realizing it, Indonesia is currently facing the phenomenon of demographic bonus, which is expected to be used as an advantage in socio-economic development. In theory, the demographic bonus is expected to peak in 2030 to 2040. Where more than 60% of the total population is the productive age population consisting of 15-65 years old (Prasarti & Prakoso, 2020). One of the characteristics of the demographic bonus can be seen through the level of dependency of the productive and non-productive age population (Islakhiyah & Yanti, 2020). The smaller the population dependency ratio, the greater the opportunities that will be obtained. The dependency ratio shows the comparison of productive age and non-productive age (Khairunnisa & Nurwati, 2021).

The success or failure of utilizing the demographic bonus depends on government policies in preparing productive human resources, as well as how effective it is in managing its economy and society. Human resources are the most important factor in the stages of growth and development of a nation. Quality human resources are a key to success in economic reform. In other words, quality human resources with skills will create competitiveness in global competition (Hasiani et al., 2015).

The utilization of demographic bonuses can be successful with the development of human resources, especially in the education and economic sectors. Both are like two sides of a coin that are interrelated and cannot be separated. The chain of poverty can be broken with proper education because the economy also increases. The increasing economy has an impact on being a way for someone to be able to get a proper education. Thus, the role of human resources in development, especially economic development, is very important.

A demographic bonus only happens once, so the opportunity must be utilized as well as possible. Demographic bonuses can turn into a demographic disaster if the availability of an abundant productive age population is not utilized properly. Demographic disaster is the impact of the absence of allocation of infrastructure and employment opportunities for the productive age population. Therefore, the government must be careful and synergize with the community, as well as all stakeholders so that our country is truly ready to face this demographic bonus (Sarmita, 2017).

Another factor in the successful utilization of the demographic bonus is the education aspect, so efforts are needed to improve access and quality of education (Ayu Wulandari et al., 2023). But the reality is that the current state of education is not encouraging and is not in a good position. Many indicators are showing this, including the low quality of education, low education services, as well as the quality and access to higher education which is still low, and low literacy skills of children. Automatically, this will have a direct impact on the quality of human resources.

The quality and access to higher education that is still low is the impact of the minimal capacity and the existence of representative educational institutions in the regions. The reason is that not all residents in Indonesia can access education services properly. Cost constraints and the location of residence that is far from the nearest higher education access are reasons for people not to continue their education from high school. A breakthrough is needed in providing higher education services that are affordable for the community, especially for people who are included

in the 3T areas. A nation will not be able to achieve a high level of development without developing the quality of human resources, and the demographic bonus will only be a disaster, not a blessing (Khairunnisa & Nurwati, 2021).

3.1 Distance Education Opportunities Facing Demographic Bonus

Madura Island is an island separate from Java Island, but administratively it is part of East Java Province. Administratively, Madura Island consists of four districts, namely Bangkalan, Sampang, Pamekasan, and Sumenep. The geographical location of Madura Island is in the east of Java Island and is separated by the Madura Strait. The eastern part of Madura Island is an inhabited archipelago that is administratively part of Sumenep Regency. In 2009, Madura Island and Java Island were connected by the Suramadu Bridge. The 5.4-kilometer-long bridge makes mobility between Java Island and Madura Island faster.

In 2023, the total population of Madura Island will reach 4,060,713 people spread across four regions, namely Bangkalan Regency, Sampang Regency, Pamekasan Regency, and Sumenep Regency. Based on the composition of the total population on Madura Island, the ratio of the productive age population (15-64 years) is much higher than the non-productive age population (<15 and >64 years), namely 2,758,305 people or around 67.9% of the total population of Madura Island (BPS, 2024).

Table 2. The Population

NO	Regency	Population
1	Bangkalan	1,047,306
2	Sampang	988,360
3	Pamekasan	882,837
4	Sumenep	1,142,210
Total Population		4,060,713

Based on the percentage of population according to age group, Madura Island will experience the peak of the demographic bonus in 5 to 10 years. The demographic bonus on Madura Island can be an opportunity if human resource development is carried out properly, especially in the education sector and the economic sector. Especially in the higher education sector because the total population that has received higher education is only around 14.9% of the total population on Madura Island and the surrounding islands. Access to education is one of the challenges in facing the demographic bonus wave (BPS, 2024).

Table 3. Population Number by Age Group

NO	Age Group	Population	Percentage
1	0–4	301597	7.4%
2	5–9	342180	8.4%
3	10–14	320384	7.9%
4	15–19	247628	6.1%
5	20–24	333330	8.2%
6	25–29	321690	7.9%
7	30–34	300721	7.4%
8	35–39	307645	7.6%
9	40–44	302291	7.4%
10	45–49	280108	6.9%
11	50–54	256189	6.3%
12	55–59	219316	5.4%
13	60–64	189387	4.7%
14	65–69	132510	3.3%
15	70–74	92606	2.3%
16	75+	113131	2.8%
Total Population		4,060,713	100%

Based on data processed from various sources, currently, there are at least 14 higher education institutions on Madura Island, consisting of universities, institutes, colleges, and polytechnics, spread across four districts on Madura Island. Of these, there are several that have state status which attracts the interest of people outside Madura Island to study in Madura. This phenomenon has given rise to competition through various entrance selections, the impact of which is that the quota capacity is increasingly limited, especially for the Madurese community. Limited access to adequate education is a reason for Madurese people to migrate, especially for those who live on islands outside the mainland of Madura Island. Unfortunately, when they finish their education, most graduates are reluctant to return to Madura Island and choose to settle and work in other areas, so the hope of returning to develop their home region is in vain. The issue of the availability of access to education is important in facing the demographic bonus. Access to education must be able to reach all levels of society so that interest in continuing studies is higher. Unfortunately, the obstacles that arise are the problem of uneven educational infrastructure and tend to be centered in certain areas. In addition, the face-to-face or conventional learning model makes some people reluctant to continue their studies because they have to leave their homes. Another impact is the problem of education costs which are added to the cost of living if you go abroad.

To overcome these problems, the government has introduced a Distance Learning Education model. In the Distance Learning model, physical educational infrastructure such as classrooms is no longer needed. Distance Learning utilizes technological developments in its teaching and learning activities. The flexibility of educational access is one of the characteristics of the implementation of the Distance Learning model where educational services can be accessed by anyone and anywhere. Another characteristic of the Distance Learning model is the physical, spatial, and time separation between students and instructors/teachers for almost the entire learning process and has a significant proportion of teaching (Anam et al., 2020; Yunus & Yuliana, 2022).

In the learning process, Distance Learning Model Maximizing the use of information technology is what makes teachers and students have no time and space limitations. The development of technology also makes the delivery of educational materials flexible so that students can access learning more easily. Distance education has now also developed into an alternative to meeting the need for educational availability, especially at the higher education level (Nugraheni, 2009).

The Distance Learning model is considered capable of overcoming the limited access that occurs in facing the demographic bonus, where the number of productive ages who need access to education is quite significant. The Distance Learning model is considered to have advantages in student capacity and reach. Communities in island areas can be reached with the Distance Learning model, they no longer need to leave their homes. The Distance Learning system is also able to reach more participants who are not accommodated in conventional institutions that have limited face-to-face class quotas. The absence of living costs that must be incurred if traveling makes the Distance Learning model accessible at a relatively affordable cost.

The Distance Learning model can be an opportunity for developing countries to catch up on the quality of education of their population, especially the uneven distribution of educational infrastructure. This is the background that the Distance Learning model is considered capable of being a solution to providing access to education in facing the demographic bonus. And can be a method for empowering human resources. The hope is success in making the demographic bonus potential for Madura Island to advance and develop.

3.2 Distance Learning Model of Open University

The Distance Education Model or PJJ has been introduced by the government through the Distance Higher Education (PTJJ) model organized by the Open University (UT). Since its inception in 1980, UT has conducted distance learning. The open university has implemented PJJ for more than 40 years in various forms of flexible lectures, especially online along with technological developments. For 4 decades, UT has graduated millions of alumni spread throughout the country. The quality of graduates from the distance learning model is also able to compete with graduates from conventional institutions. This is evidenced by the high absorption of UT graduates who have entered the world of work and entrepreneurship.

Distance Learning model held by UT is a distance and open learning using a guided independent learning system for all students. The term distance learning means that learning is not done conventionally in face-to-face classes, but rather using media, both print media (BMP/Modules) and non-print (audio/video, computers/internet, radio broadcasts, and television). In the UT PJJ model, student registration is done openly, the meaning of open is that there are no restrictions on age, year of diploma, study period, registration time, and frequency of taking exams. The only limitation is that every UT student must have completed high school (SMA or equivalent). Currently, there are two learning characteristics in the UT Distance Learning model, the first is *Asynchronous* and the second is *Synchronous*. *Synchronous* is direct interaction at the same time, while *asynchronous* is the opposite, namely interaction that does not occur in real-time. Both have their advantages and disadvantages to suit learning needs. The implementation of PJJ both synchronously and asynchronously is expected to be a solution to the limited physical access to education. And able to reduce the cost of education which is relatively quite large if carried out in the form of conventional education. The reason is that in the concept of conventional education, in addition to the cost of education itself, there is a component of living costs that must be borne by students including transportation costs for mobility.

Since its inception, the PJJ model has given birth to several generations of technology, namely 1) the correspondence model, 2) the multimedia model, 3) telelearning model (learning through communication networks or computers), 4) flexible learning model, and 5) intelligent flexible learning model. The fifth generation of PJJ has been going on since the internet existed until now, marked by the start of online learning or internet-based learning (Rahayu, 2023).

The main problem that arises in the implementation of PJJ is the paradigm shift in the concept of education in society. The majority of people are still groping for what the PJJ model is, they

will compare it with the conventional education model. There are still opinions that assume that learning must be done face-to-face. However, this opinion has slowly been changed thanks to the adaptation of changes in the Indonesian education model during and after the COVID-19 Pandemic.

Another issue is access to technology which is one of the factors for the success of PJJ implementation. This is because PJJ interactions need to be assisted by communication technology, information, and other media. It is undeniable that there are various obstacles in accessing technology, such as the level of technology use skills by the community or the quality of the internet network which is still less than optimal in reaching several regions in Indonesia, especially the archipelago.

Although in the concept of PJJ the learning process organized by UT mostly uses technology. However, some activities such as tutorials and practicums are carried out face-to-face as in the conventional education system. The Blended approach is used to address the need for real learning experience needs, namely combining conventional laboratory practices with learning through electronic media. Non-manual skills are taught virtually, while manual skills are trained through actual laboratory experiences (Nugraheni, 2009).

3.3 UT's Distance Learning Model for the Madurese Community

Madura Island can be said to be divided into two the mainland of Madura Island and island areas such as Kangean and Sapeken. Based on the results of Interview withs and observations of informants from the island area, it was agreed that the Open University online learning model is suitable for people in the island area. Students from the island area do not need to come to the city where the campus or college is located. Students or learners can attend lectures while remaining in the island area. On the one hand, this learning model makes college cheaper, there is no need to pay for renting a boarding house, and there is no need for transportation expenses. Food and drink needs can also be met together with other families. The components of expenses for bringing a boarding house, food, and transportation are the same as or can be greater than the expenses for paying tuition fees.

This helps parents in the island region, who generally have low incomes. A-C, who is an entrepreneur, one of the parents of a student whose child is currently studying at Universitas Terbuka, admitted that he was grateful that he could still send his child to college, even though his economic condition was not very fortunate.

"I want my child to go to college in a big city like Surabaya or Yogya, but because I don't have the money, I just send him to college at UT, because there's no need to leave the island, especially since the campus is still a state campus." (Interview with A-C, May 2024).

H-S, a guardian of a student whose child is currently studying at the Open University, said the same thing. H-S, who is a retiree from the sub-district office, feels helped by studying at Universitas Terbuka. H-S admitted that if the funds spent to finance his child's studies can be managed, namely to pay for tuition fees, there is no need for other unexpected costs, such as if his child were studying in the city directly, such as room rent, food, gasoline, pocket money, and other needs.

"Luckily there is UT, so my child can still go to college, but also stay with us at home. He is a child who cannot be far from his mother, and he is also close to his younger siblings, taking care of his younger siblings every day." (Interview with H-S, May 2024).

In addition to the cost, H-S is one of the many parents who are worried if their children are in a big city, in a condition where there is no close family or people they know. So according to him, studying with the model at the Open University is one solution that is quite reassuring for parents like him. Even though they are still at home, when the lecture time is over, their children can graduate as bachelors at state universities.

S-Y, one of the village secretaries in the Sapeken Islands, Sumenep Regency, Madura, was once visited by an officer from UT who offered and invited alumni of his local high school to enter college at UT.

"I have long been visited by officers from UT who asked me to help the village government convey it to the community, and recently I got information from a friend in the Sapeken District, that there were already 16 people who registered. This is indeed quite good for the islanders." (Interview with S-Y, June 2024).

Meanwhile, for parents who have the ability, they prefer to send their children to school in the city. As admitted by M-S, one of the village heads in the Kangean Islands, Sumenep Regency. M-S admitted that he preferred to send his child to school in Surabaya because he was more confident that his child would be able to follow the learning better and optimally. Even so, MS still admitted to being anxious and worried, afraid that his child would mix with the wrong people in the big city.

"I do give my child the choice to study any major and anywhere, as long as I am able, I will follow it, as long as he wants to go to college, rather than staying in the village and not wanting to go to college." (Interview with M-S, May 2024).

Not only for people in the island region just like that but a similar thing was also conveyed by M-Z, a guardian of a student from Burneh District, Bangkalan Regency. M-Z admitted that he was greatly helped by the existence of UT so that his child could continue his studies. M-Z said that the distance factor had been an obstacle to allowing his child to go to college.

"Apart from the cost issue, I can't bear it when my child has to go to college outside the area. The state universities here have difficult selections and many competitors. I am grateful that my child can be independent by studying while working at a notary's office to meet his own needs." (Interview with M-Z, August 2024).

D-M who is an Alumni of PG-PAUD UT said that at UT he was able to continue his studies through the RPL program because he had previously studied D2 PGTK. The reason D-P chose UT was because of its status as a PTN and many of his colleagues recommended it because the majority were also graduates of UT.

"Studying at UT is very helpful because it suits my busy schedule as an educator, so by studying at UT I can balance my work and education" (Interview with D-M, September 2024).

3.4 Challenges of Implementing UT Distance Learning in Madura

Based on the data collected, the number of UT students in Madura currently reaches approximately 2123 people. When compared to the population of Madura Island which is 4,060,713, the number of UT students is only 0.052% of the total population. When compared to the population of the productive age of Madura Island, the number of UT students is only 0.077% of the total of 2,758,305 people of productive age. This should be a potential for UT to introduce the PJJ model more widely in Madura. However, apart from the opportunities, there are also several challenges in implementing PJJ.

One of the challenges that can still hinder the online learning process in some areas of Madura Island is the less-than-optimal availability of infrastructure and facilities such as electricity and data networks. Especially in the Madura Islands, many islands are still not optimally supplied with electricity. Even if there are islands that have electricity, they are not optimally lit for 24 hours. Likewise, cellular data networks, not all islands in the region are well covered by the internet network.

Many people living in the island region have to move to another island that has a cellular data network. This was conveyed by B-A, the village secretary in the Sapeken archipelago, Sumenep, Madura.

"The main problem for our island community is that electricity and internet networks are still not normal and not stable like those in the city, they go out more often than they turn on. I think that is the obstacle to online learning models in the island region." (Interview with B-A, June 2024).

S-D, a member of the Village Representative Committee (BPD) in one of the villages in Sapeken District, confirmed that electricity and cellular telephone network problems are one of the main obstacles in the island region.

"The main obstacles in the islands are electricity and data networks, if these can be overcome, it will not be difficult to carry out distance learning activities, including for students on our island." (S-D Interview with, May 2024).

Meanwhile, the mainland area of Madura Island tends to be well covered by the internet network. Likewise with the electricity that is on for 24 hours. It can be said that the conditions on the mainland are very different from the island areas, so the learning process on the mainland is more conducive. This was told by U-A, a student of the UT PG-PAUD study program who lives in Bangkalan Regency. For him, UT's online lecture system, especially the Tutorial Webinar, can be followed without any problems.

"The process of technological development in my area is developing rapidly, almost all people have gadgets, electricity is connected in all areas, the cellular network has also expanded and almost most houses have installed wifi." (Interview with U-A, September 2024).

In addition to the physical obstacles described above, another challenge that occurs is the customs of the community and local culture. Madura Island can be said to be one of the areas that still adhere to its cultural customs from generation to generation. In some ways, this tends to be an obstacle to equalizing access to higher education. N-A, a student from the Law Study Program who comes from Bangkalan, said that some of his colleagues chose to migrate to earn a living rather than continue their studies.

"There is a small part of the community who do not prioritize education, education up to high school is considered sufficient. The family environment tends to facilitate the intention to migrate." (Interview with N-A, August 2024)

D-P, an education practitioner in Bangkalan Regency, said that although lectures at UT are more flexible in terms of lecture time and can reach many people with the Distance Learning model. However, cultural aspects are sometimes an obstacle, such as gender issues that still occur in Madura. Madurese society is also a society with a high level of religiosity. Islamic boarding school-based schools are widely spread in Madura.

"The community is already technologically literate, it's just that they are still bound by culture in terms of marriage, they have the view that education for women does not need to be required to go to college." (D-P Interview with, September 2024).

In addition to infrastructure constraints and cultural challenges, another aspect that needs to be considered is the public's perspective on the UT learning system. So far, the learning process of study programs at Universitas Terbuka has been mostly carried out asynchronously without face-to-face meetings. The Main Material Book (BMP) as the main source of material must be read by students. Lecture assignments are done by students through the e-learning page. Likewise, lecturers correct and give grades to assignments submitted by accessing the e-learning page. This means that the learning process is carried out through an intermediary media, namely the e-learning page. This model is a reflection of the concept of independent learning applied by students.

S-N, one of UT's alumni from Pamekasan Regency, who is currently teaching at an elementary school in Sumenep Regency, believes that the learning model needs to be adjusted to technological advances. The hope is to make the learning process more interactive and real-time. Lecturers or tutors and students can be directly involved in discussions so that there is a take-and-give process between lecturers and students in learning even though it is online.

According to S-N, the learning method at Universitas Terbuka has tended to be monotonous, students are in a position to only study and do assignments which are then submitted to lecturers.

"We cannot interact with lecturers, cannot discuss directly with lecturers or with other students. Even though digital technology is already available cheaply and for free, Zoom for example. If Zoom is used as a learning tool, it will be even better, so that the learning process is more interactive." (Interview with SN, June 2024).

The same thing was expressed by H-D, an alumnus of Universitas Terbuka from Sapeken District, Sumenep, Madura who is currently working as a companion for government assistance programs in Sumenep Regency. According to H-D, in the past, learning used to use BMP was

still suitable for students, but after the development of digital technology, the modular learning model is not enough, there needs to be development along with the presence of digital technology.

"I hope that UT can use Zoom or Google Meet as a learning tool, lecturers can present and explain the lecture material clearly, then students give responses and discuss. Other students can also respond. This will complement our reading of the modules that have been read previously. " (Interview with H-D, June 2024).

Another Open University alumni, W-N, who was a construction entrepreneur in the archipelago, admitted that studying at the Open University was a convenience for students in the archipelago. However, he considered that the learning model that only relied on BMP is no longer relevant to the current situation and conditions.

"We hope that the learning process can be more interactive between lecturers and fellow students. In our daily activities, we are used to doing this, so why can't it be done during lectures? Students are also used to using Zoom and Google Meet for various purposes, meetings, and others, so it is not difficult to do." (Interview with W-N, May 2024).

A different thing was expressed by A-N, a UT student from Bangkalan Regency. The student of the Law study program who is currently working at the Notary Office said that he was quite comfortable with UT's online learning model. Learning activities can be followed in between busy schedules without disrupting other activities.

"Compared to other universities, lectures at UT tend to be much more relaxed. However, communicating with tutors about assignments or materials is indeed a bit difficult, it can only be done through the chat facility on the tutoring page. And, it takes quite a long time to respond" (Interview with A-N, August 2024)

4 CONCLUSION

This article highlights the complexity of learning challenges in Indonesia, especially in an archipelago like Madura. The unique geographical conditions, coupled with a large population and demographic bonuses, demand innovation in the education system to reach all levels of society. The demographic bonus can be an opportunity for sustainable development if it is utilized properly. One of them is the ease of access to education through a distance education strategy.

The Open University case study shows that online learning is a promising approach to overcome the distance and cost constraints often faced by communities in the island region. The flexibility

of online learning allows students to study at their own pace, without being tied to conventional lecture times and places, and without having to leave their homes. In addition, affordable tuition fees increasingly provide space to continue studies according to the needs and abilities of the community.

However, this study also identified room for improvement. The media-based online learning model currently implemented by Universitas Terbuka needs to be enriched with more interactive digital technology. The need for different learning experiences among students can be a reference for adapting learning model strategies. This aims to improve the quality of interaction between teachers and students so that the learning experience becomes more meaningful and effective.

The results of this study have broad implications for the development of the education system in Indonesia, especially in remote and island areas. Some implications that can be drawn are the importance of technological adaptation, universities need to continue to innovate and adopt digital technology to support distance learning. Strengthening social interaction, although online learning offers flexibility, social interaction between students and teachers remains important to maintain learning motivation and build a learning community. Development of quality learning content and learning materials must be designed to be attractive relevant, and relevant to technological developments, needs, and characteristics of students. Infrastructure support, the government needs to provide adequate technological infrastructure in remote areas to support the implementation of online learning.

Based on the results of the study in the article, several recommendations can be put forward including the need for further research to explore other factors that influence the success of online learning in the island region. Developing a more interactive online curriculum needs to be enriched with various interesting and engaging learning media. Empowering the community actively in the learning process as participants and facilitators. The last is a continuous effort to improve the quality and relevance of online learning to provide optimal benefits to the community.

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