

## Tourism Management Students' Perceptions on The Use of Moodle Applications in E-Learning

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### ABSTRACT

*The choice of learning media is one of the determining factors for student interest and understanding in a learning process. This study aims to determine the perceptions and barriers of tourism students to the use of Moodle as an online learning application. Student perceptions and barriers were measured through perceived usefulness and perceived ease by using the Technology Acceptance Model (TAM) from Davis (1989). Data was collected through questionnaires to all tourism management students who took online lectures in the odd semester of 2020, using the Moodle application as a Learning Management System. This study shows that the use of the Moodle application provides benefits in terms of providing resources/materials, free time, understanding the topic, increasing independence, increasing discipline, increasing self-confidence, increasing ICT skills, and creating fun learning. Meanwhile, in terms of the ease of use of the Moodle application, students agreed that the ease was felt in terms of using technology, timing, accessing materials, navigating the features contained in Moodle, using language, instructions, assignments, and the lack of technical obstacles in using Moodle. Meanwhile, the identified barriers include: lack of motivation to learn, lack of interaction with other students and lecturers, and internet connection. This study suggests increasing student motivation to learn by designing varied learning modules and able to increase interaction between students and lecturers. This study also suggests investing in internet network supporting infrastructure, in order to provide adequate internet access for students and asynchronous forms of learning.*

### ARTICLE HISTORY

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### KEYWORDS

E-learning, Technology Acceptance Model (TAM), Perceived of Use, Perceived of Ease, Moodle

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## 1. Introduction

E-learning has become an option for learning methods in the early 20th century. This method provides space for universities to offer learning with a wider reach to students, collaborate between universities from various countries, and improve the quality of learning that is only method-based. conventional form of meetings in the classroom.

Bridging distance learning, several platforms have been designed to accommodate these needs through a Learning Management System (LMS). Some of them are Moodle, WebCT and also Blackboard. Google, as a multinational technology company, also designed a system that accommodates distance learning through Google Classroom.

Starting in 2020, the need for e-learning-based learning becomes more urgent, along with the limited access to direct communication between lecturers and students due to the CORONA 19 pandemic. Taking into account the platform that was used before the pandemic, Moodle was chosen as an application to facilitate online learning in International IPB campus, including the tourism management study program.

Many studies have shown that using technology has positive effects, one of which is in the field of education (Mafuraga & Moremi, 2017; Muhammad, et al., 2019; Rahman, et al., 2019; Junaidi, et al., 2020a; Junaidi, et al., 2020b). Students' perceptions of the use of applications in online learning affect students' interest in the learning process and also their participation in class (Lorenzi & Riley, 2000). This perception can be measured using the Technology Acceptance Model (TAM) both in terms of perceptions of the usability and ease of use of the technology, in this case Moodle.

Several studies that identify students' perceptions of technology acceptance have been carried out to improve the quality of learning. In 2018, research was conducted on the perception of students aged between 19 to 21 years towards e-learning. It was found that e-learning was felt to bring benefits and would have a positive influence on students' understanding of teaching materials (Mahajan and Kalpana, 2018). A similar study was also conducted in Iran in 2008. Virtual students' perceptions were identified using a descriptive correlative survey approach. This study found that students have a positive perception of electronic-based learning (E-learning). This perception is determined by 4 main variables, including student assessment of e-learning competencies, ease of teaching materials, use of computers and the internet and evaluation of the obstacles faced by higher education (Yaghoubi, J., et.al., nd).

This study aimed at finding out the perception of tourism management students towards the Moodle application used in online learning at the IPB International campus and identifying the obstacles encountered when using the Moodle application in online learning, so that it can be followed up in future research.

## **2. Method**

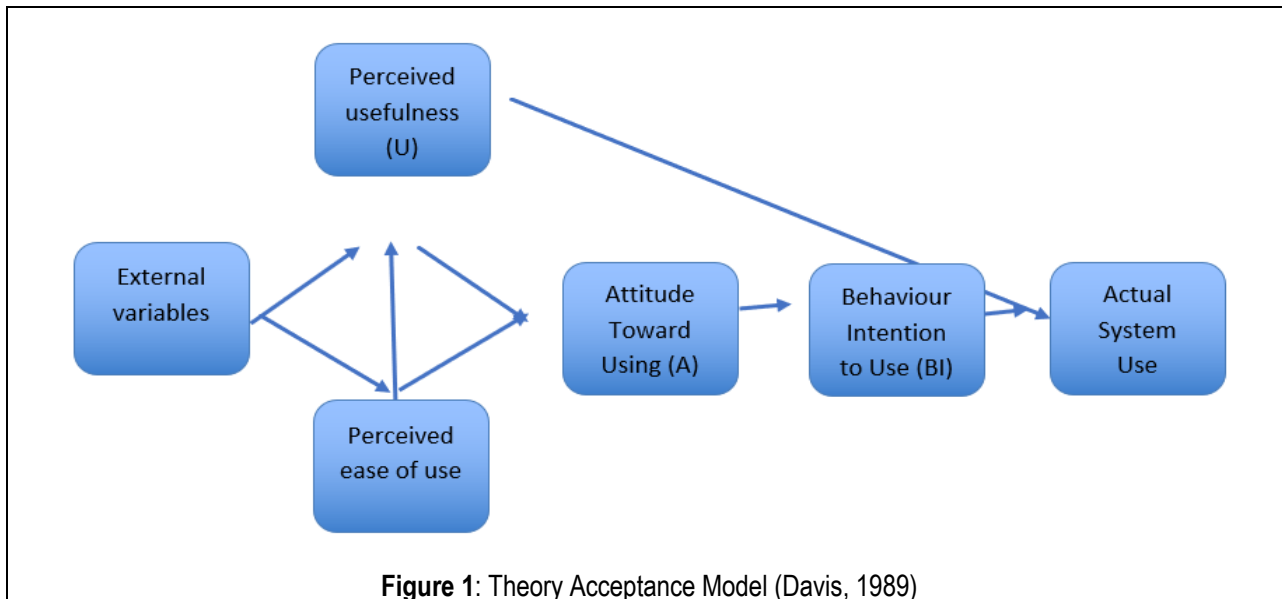
This research was conducted in International Institute of Tourism and Business (IPB Internasional) campus. Tourism Management Study Program uses the Moodle application in online learning. The population is all students in the Tourism Management study program who attend lectures in the odd semester 2020. The total population is 175 people. To obtain data, the researcher utilised a questionnaire on the perception of technology acceptance which was adopted from the model of Davis (1989). This questionnaire consists of factors perceived of use and ease of use. There are a total of 20 questions measured by a Lickert scale: SS (Strongly agree), S (agree), TS (Disagree), STS (strongly disagree). The twenty statement items include student perceptions and barriers in the availability of learning resources, understanding of the material, learning attitudes, ease of access, delivery methods, and interaction patterns.

In this study, students' perceptions were obtained from the learning process/experience they experienced, both in terms of interaction models with lecturers, interactions with other students, the availability of supporting facilities including internet networks, as well as the availability of teaching materials in the Moodle system. In a structured manner, this perception involves indicators of perceived use and ease of use.

E-learning-based learning in this study refers to the entire distance learning process that uses internet media and hardware in delivering topics or materials from teachers to students. All interactions, both synchronous and asynchronous, are carried out through the media.

MOODLE (short for Modular Object-Oriented Dynamic Learning Environment) is a software package produced for internet-based learning activities and websites that use the principles of social constructionist pedagogy. MOODLE is an application of teaching and learning concepts and mechanisms that utilize information technology, known as the concept of electronic learning or e-learning. Moodle can be used freely as an open source product (open source) under the GNU license. Moodle can be installed on any computer and operating system that can run PHP and supports SQL databases. In this study, Moodle was used as a learning management system by IPB International tourism management students.

Technology Acceptance Model (TAM) is a model that was first developed by Davis (1989). TAM can be used to measure an individual's attitude towards technology acceptance. TAM is based on Reasoned Action Theory (TRA). TRA explains that individual behavior is motivated by various behavioral goals. The purpose of the behavior is a function of the individual's attitude towards the behavior and the subjective norms in which the behavior is carried out. Apart from TRA, there is the Theory of Planned Behavior (TPB), which also underlies TAM. The TPB provides an explanation of how human behavior can be changed. Some of the factors in TAM are also found in TPB, but TPB is not specified to measure technology acceptance. This TAM measures student readiness in 2 (two) aspects, including student perceptions of the usefulness of the technology and perceptions of the ease of use of the technology. Based on the TAM theory, perceived use and ease of use are determining factors in the use of a system. Both factors are influenced by external factors. External factors, usually derived from social, cultural, and political aspects. Social aspects include language, skills, and accompanying conditions. While the political aspect includes the impact of the use of technology in the world of politics and political crises. In TAM, attitudes to use relate to user evaluations of the possibility of using certain information system applications. Meanwhile, behavioral intention is a measure of the likelihood that someone will implement it in an application.



### 3. Result and Discussion

#### 3.1 Students' Perceptions On The Use Of Moodle Applications In E- Learning

Student perceptions of Moodle technology acceptance (TAM) were measured using two elements including perceptions of the benefits of Moodle applications (perceived usefulness) and perceptions of the ease of Moodle applications (perceived ease).

There are 10 indicators for each element with a rating scale of SS (strongly agree), S (Agree), TS (Disagree), STS (Strongly Disagree). There were 91 respondents who filled out the questionnaire.

##### a. Students' Perceived Usefulness

In this section, students give their assessment of the usefulness of Moodle. The detailed data of each indicator is as follows:

**Table 1.** Moodle provides a wide and varied source of learning materials

| SS    | S     | TS    | STS | Total |
|-------|-------|-------|-----|-------|
| 17    | 59    | 15    | 0   | 91    |
| 18.7% | 64.8% | 16.5% | 0%  | 100%  |

Table 1 shows students' perceptions of providing a wide and varied source of material. A total of 59 students (64.8%) agreed that Moodle provides a wide and varied material. Furthermore, 17 (18.7%) students even stated that they strongly agreed with the statement. In addition, there were 15 students (16.5%) who did not agree with the statement, but there were no students who stated that they did not agree at all. From the table data, there is a tendency that students agree that Moodle provides access to a wide and varied source of material to support online learning.

**Table 2.** Moodle gives more time to explore learning resources

| SS    | S     | TS    | STS  | Total |
|-------|-------|-------|------|-------|
| 21    | 58    | 11    | 1    | 91    |
| 23.1% | 63.7% | 12.1% | 1.1% | 100%  |

Table 2 shows the perception of the usefulness of the Moodle application on providing study time in exploring learning resources. The data shows a tendency for students to agree with the availability of more time, when they do Moodle-based learning. The percentage of student disagreement is relatively low, considering that only 1 person (1.1%) stated the opposite, namely that Moodle did not provide enough time to access learning resources. The data shows the tendency of Moodle to provide benefits in terms of providing study time in exploring learning resources.

**Table 3** Moodle helps understanding of a topic

| SS    | S   | TS    | STS  | Total |
|-------|-----|-------|------|-------|
| 12    | 40  | 35    | 4    | 91    |
| 13.2% | 44% | 38.5% | 4.4% | 100%  |

Table 3 provides an overview of students' understanding of the topics packaged in the Moodle LMS. The data shows a greater trend in the perception of students who agree with the statement, although it has not reached 50% (44%), which is about 40 of 97 respondents. 38.5% (about 35 students) disagreed, and about 4 students (4.4%) strongly disagreed that understanding of the material was helped by the Moodle application. Overall, it can be concluded that students agree that the Moodle-based LMS helps understand the material presented online.

**Table 4:** Moodle improves my motivation to learn

| SS   | S     | TS    | STS  | Total |
|------|-------|-------|------|-------|
| 5    | 35    | 47    | 4    | 91    |
| 5.5% | 38.5% | 51.6% | 4.4% | 100%  |

Table 4 shows students' perceptions of increasing motivation with Moodle-based learning. Most of the students (51.6%), disagreed that the use of Moodle motivated them to study. Only 35 people (38.5%) agreed and 5 (5.5%) strongly agreed. Overall, the percentage of students who are not motivated tends to be higher than those who are motivated by the use of Moodle.

**Table 5** Moodle helps me to be more independent in learning

| SS    | S     | TS  | STS | Total |
|-------|-------|-----|-----|-------|
| 14    | 66    | 10  | 1   | 91    |
| 15.4% | 72.5% | 11% | 1%  | 100%  |

Table 5 shows the usefulness of Moodle in helping students to learn independently. The tendency of student responses to agree is 72.5% (about 66 people), even very much agree about 15.4% (14 people). Only about 10 (11%) and 1 (1%) respondent disagreed that Moodle helped their independent learning patterns. The tendency of the data illustrates that students feel more independent in doing learning with Moodle.

**Table 6.** On-line tasks improve my self-discipline

| SS    | S     | TS    | STS  | Total |
|-------|-------|-------|------|-------|
| 19    | 55    | 21    | 2    | 91    |
| 19.6% | 56.7% | 21.6% | 2.1% | 100%  |

Table 6 shows the respondents' perceptions of the benefits of Moodle in increasing respondent discipline. The data shows the tendency of respondents to agree is greater than those who disagree. The total respondents who stated that they agreed were 74 people (76.3%), while 23 people (23.7%) thought that Moodle did not make them disciplined in learning. It can be concluded that most of the respondents stated that Moodle helped them learn with discipline.

**Table 7.** Moodle increases my confidence in expressing ideas

| SS    | S   | TS    | STS | Total |
|-------|-----|-------|-----|-------|
| 18    | 51  | 22    | 0   | 91    |
| 19.8% | 56% | 24.5% | 0%  | 100%  |

Table 7 shows the tendency of students to be more confident in expressing ideas, namely 66 (75.8%) respondents (51 respondents stated agree, 18 respondents stated strongly agree), while 22 (24.5%) other respondents stated otherwise. The data shows the tendency of students to be more confident with the use of Moodle in learning.

**Table 8.** Moodle improves ICT (internet computer technology) skills

| SS | S  | TS | STS | Total |
|----|----|----|-----|-------|
| 27 | 58 | 5  | 1   | 91    |

|       |       |      |      |      |
|-------|-------|------|------|------|
| 29.7% | 63.7% | 5.5% | 1.1% | 100% |
|-------|-------|------|------|------|

Table 8 shows the respondents' perceptions of improving their ICT skills by using the Moodle LMS. The tendency of respondents to express their agreement with the statement is greater than those who disagree. The total statement of agreement (S and SS) is 85 respondents. Only a small proportion of respondents expressed their disagreement, namely 6 respondents (6.6%). The data shows that most students agree that Moodle is useful in improving ICT skills.

**Table 9** Moodle makes learning more fun

| SS    | S     | TS    | STS  | Total |
|-------|-------|-------|------|-------|
| 11    | 37    | 39    | 4    | 91    |
| 12.1% | 40.7% | 42.8% | 4.4% | 100%  |

Table 9 provides an illustration of respondents' perceptions of pleasant learning conditions with the Moodle application. In this perception, there is an insignificant difference between respondents who agree and disagree (52.8 %: 47.2%). Based on these data, it can be seen that students tend to enjoy using Moodle applications in the e-learning learning process.

**Table 10.** Moodle improves interaction with friends and lecturers

| SS   | S     | TS    | STS | Total |
|------|-------|-------|-----|-------|
| 4    | 33    | 44    | 9   | 91    |
| 4.4% | 36.7% | 48.9% | 10% | 100%  |

Table 10 shows the intensity of interaction between respondents with lecturers and classmates. The data shows that respondents tend to disagree if the interaction increases, which is 53 (58.9%) respondents. Meanwhile 37 (41.1%) respondents stated that an increase in interaction occurred with the Moodle application. The data above shows the tendency of respondents to disagree that Moodle can increase interaction with friends and lecturers.

#### b. Students' Perceived Ease of Use

In this section, respondents give their perception of the ease of using Moodle applications in online learning.

**Table 11.** Students understand technology to access Moodle-based online modules

| SS    | S     | TS   | STS | Total |
|-------|-------|------|-----|-------|
| 17    | 73    | 1    | 0   | 91    |
| 18.7% | 80.2% | 1.1% | 0 % | 100%  |

Table 11 shows the ease of accessing Moodle technology. Almost 100% of respondents agree that the technology used by Moodle tends to be easy (90 respondents or around 99.9%). Only 1(1.1%) of respondents did not agree with the statement. The data above shows the tendency of students' ease in accessing the technology used in the Moodle application.

**Table 12.** Ease of time to access Moodle-based online materials

| SS    | S     | TS   | STS | Total |
|-------|-------|------|-----|-------|
| 15    | 68    | 8    | 0   | 91    |
| 16.5% | 74.7% | 8.8% | 0 % | 100%  |

Table 12 shows the ease of time in participating in Moodle-based learning. Respondents also tend to agree that they have the convenience of time, which is 91.2%, which is 83 respondents. The data shows that only a small proportion of respondents disagree with the statement, which is 8.8%, which is a total of 8 respondents. The data above shows a tendency that students have free time in accessing Moodle in online learning.

**Table 13.** I know how to access Moodle-based materials given online by the lecturer

| SS    | S     | TS   | STS | Total |
|-------|-------|------|-----|-------|
| 19    | 66    | 6    | 0   | 91    |
| 20.9% | 72.5% | 6.6% | 0%  | 100%  |

Table 13 shows the respondent's knowledge data in order to access Moodle-based material provided online by the lecturer. The data shows that most respondents agree that they know how to access Moodle-based materials, as many

as 85 respondents, or about 93.4%. The data shows that only 6 respondents (6.6%) stated that they disagreed with the statement. The data illustrates that most respondents tend to know how to access Moodle.

**Table 14.** Students know how to navigate web-based e-learning modules

| SS    | S     | TS    | STS  | Total |
|-------|-------|-------|------|-------|
| 19    | 57    | 13    | 1    | 91    |
| 21.1% | 63.3% | 14.4% | 1.1% | 100%  |

Table 14 shows the respondents' skills in navigating the module delivered with the Moodle application. The data shows that most of the respondents, as many as 76 respondents (84.4%) know how to navigate the Moodle-based module. Only a small number of respondents, namely around 14 respondents (15.5%) stated that they did not know how to navigate Moodle. The data shows the tendency of students to agree that they are able to navigate the Moodle application.

**Table 15.** Languages Moodle-based modules are easy to understand

| SS    | S     | TS   | STS  | Total |
|-------|-------|------|------|-------|
| 18    | 65    | 8    | 1    | 91    |
| 19.6% | 70.7% | 8.7% | 1.1% | 100%  |

Table 15 shows data about verbal delivery of material in Moodle. This indicator aims to find out whether the language used in the Moodle module is easily understood by respondents. The data shows that 90.3%, or about 83 respondents stated that the language in the Moodle module is easy to understand. The data also shows that only a small number of respondents stated that the language used in the module in Moodle was not easy to understand, which was around 9 respondents (9.8%).

**Table 16.** The teacher's online instructions are easy to understand

| SS    | S     | TS    | STS  | Total |
|-------|-------|-------|------|-------|
| 10    | 56    | 22    | 2    | 91    |
| 11.1% | 62.2% | 24.4% | 2.2% | 100%  |

Table 16 shows data about the ease of respondents in understanding online instructions. There were 66 respondents (73.3%) who stated that the lecturer's online instructions were easy to understand. Only a small number of respondents, namely a number of 24 respondents (26.6%) did not agree.

**Table 17.** Easy to do my task with e-learning module with web-based moodle

| SS    | S   | TS    | STS  | Total |
|-------|-----|-------|------|-------|
| 14    | 61  | 13    | 3    | 91    |
| 15.4% | 67% | 14.3% | 3.3% | 100%  |

Table 17 shows the data on the ease of respondents in completing tasks with Moodle. There were 75 respondents (82.4%), who stated that the tasks given through Moodle were easy to complete. Meanwhile, 16 respondents (17.6%) stated that they did not agree with the ease of completing the tasks presented in the Moodle. The data shows the tendency of students to be able to complete assignments with the Moodle application easily.

**Table 18.** Internet connection is not a problem

| SS   | S     | TS    | STS   | Total |
|------|-------|-------|-------|-------|
| 6    | 31    | 31    | 23    | 91    |
| 6.6% | 34.1% | 34.1% | 25.2% | 100%  |

Table 18 shows data regarding internet connection in facilitating Moodle. The data shows the tendency of respondents to have problems with internet connections. There were 37 respondents who did not encounter internet connection problems, while 54 people had problems with internet connection.

**Table 19.** Online forums make it easier for me to interact with classmates and teachers

| SS   | S     | TS    | STS  | Total |
|------|-------|-------|------|-------|
| 5    | 46    | 32    | 8    | 91    |
| 5.5% | 50.5% | 35.2% | 8.8% | 100%  |

Table 19 shows data on the convenience of online forums as a means of interaction with classmates and lecturers. There were 51 respondents who stated that they found it easy to manage interactions with lecturers and fellow students in the course. Meanwhile, 40 other respondents stated that they had difficulties in using online forums.

**Table 20** I often encounter technical problems with the web-based Moodle e-learning module.

| SS   | S     | TS    | STS  | Total |
|------|-------|-------|------|-------|
| 28   | 48    | 13    | 2    | 91    |
| 3.8% | 52.7% | 14.3% | 2.2% | 100%  |

Table 20 shows the technical problems encountered in using Moodle. The data shows that 76 respondents (56.5%) agree that they find technical problems in accessing the module in Moodle. Meanwhile, respondents who disagreed that there were no technical problems were 15 (16.5%). The data shows the tendency of students not to encounter technical barriers in accessing Moodle-based modules. The respondents' perceptions of the benefits of using Moodle can be presented in the summary below:

**Table 21** Respondents' perceptions of the benefits of using the Moodle application in online learning

| Agree                               | Disagree  |
|-------------------------------------|---|
| 1. provision of resources/materials | 1. Motivate learning                                    |
| 2. time flexibility                 | 2. increased interaction between students and lecturers |
| 3. understanding of the topic       |   |
| 4. increase independence            |   |
| 5. improve discipline               |   |
| 6. increase self-confidence         |   |
| 7. ICT skill improvement            |   |
| 8. LMS Moodle is fun                |   |

Broadly speaking, it can be presented that the perception of respondents agrees that online learning based on moodlle provides benefits in: 1) providing resources/materials, 2) flexibility in time, 3) understanding the topic, 4) increasing independence, 5) increasing discipline, 6) increasing self-confidence, 7) ICT skills improvement, and 8) learning becomes fun. On the other hand, respondents did not get these benefits in terms of: 1) increased motivation to learn and 2) increased interaction between students and lecturers.

Meanwhile, on the aspect of ease of use of Moodle application technology in online learning, respondents agreed that the convenience they received in terms of: 1) the technology applied in Moodle technology, 2) timing, 3) accessing materials, 4) navigating the features in the moodle application, 5) The language used in the delivery, 6) instructions, 7) assignments, 8) technical problems encountered in accessing the module. On the other hand, most of the respondents tend to think that the internet connection still faces obstacles. The illustration can be seen in the following table 4.22:

**Table 22** Respondents' Perceptions of the ease of Moodle application in online learning

| Agree   | Disagree               |
|---|------------------------|
| 1. technology is easy to understand<br>1. internet connection | 1. Internet Connection |
| 2. time convenience   |                        |
| 3. easy access to materials                                   |                        |
| 4. Ease of navigating the app                                 |                        |
| 5. Ease of understanding the language in the instructions     |                        |
| 6. understand the instructions                                |                        |

7. Ease of interaction between friends and with lecturers
8. find technical problems

### **c. Barriers experienced by respondents in using the Moodle application for online Learning**

Moodle is a new application that is accessed by students, since the issuance of the online class implementation policy. The obstacles experienced were derived from the statement of the questionnaire items, the two elements of ease of use and the benefits of applications in online learning.

Based on the information data in the discussion of the data, it can be concluded that the obstacles encountered by the respondents included: 1) lack of motivation to learn in online learning, 2) interaction with other respondents and lecturers in learning, and 3) internet connection.

The results of interviews with respondents also confirmed 'agree' to the results of the questionnaire. The first thing that was stated by the respondents was the lack of motivation in attending lectures with the Moodle application. This is because they are more accustomed to the offline lecture method, which gives them space to discuss and interact with their peers in conventional classes. Meanwhile, online learning based on Moodle is considered less accommodating, so that the motivation to attend online lectures tends to be low. This is due to the geographical conditions of the respondents who live outside the region. During the pandemic, considering that there is no obligation to go to a campus located in the middle of the city, they prefer to live in their respective areas, which sometimes affects the quality of the internet network. Meanwhile, the lack of interaction stated by the respondent, because the respondent tends to only do the given task. They also stated that they were more free to communicate with conventional face-to-face, where they could observe the responses of lecturers or other respondents directly. They are also less accustomed to expressing their ideas in formal forums in writing.

## **4. Conclusion**

The perception of tourism management students on the use of Moodle applications in online learning is measured by the Technology Acceptance Model with 2 (two) elements, namely: 1) perceived usefulness and 2) perceived ease. Perceived of usefulness observes the respondent's perception of the usefulness of the Moodle application, while perceived of easy describes the respondent's perception of the ease of use of the application.

The data shows that tourism management students tend to feel the benefits of using the Moodle application in: 1) providing resources/materials, 2) free time, 3) understanding the topic, 4) increasing independence, 5) increasing discipline, 6) increasing self-confidence, 7) improvement of ICT skills, and 8) learning becomes fun. On the other hand, respondents did not get these benefits in terms of: 1) increased motivation to learn and 2) increased interaction between students and lecturers.

On the aspect of ease of use of Moodle application technology in online learning, respondents agreed that the convenience they received in terms of: 1) the technology applied in Moodle technology, 2) timing, 3) accessing materials, 4) navigating the features in the Moodle application, 5) The language used in the delivery, 6) instructions, 7) assignments, 8) technical problems encountered in accessing the module. On the other hand, respondents tend to think that internet connection is still facing obstacles.

Furthermore, obstacles encountered by tourism management students include: 1) lack of motivation to learn in online learning, 2) interaction with other respondents and lecturers in learning, and 3) internet connection.

Referring to the obstacles encountered in using the Moodle application, some suggestions can be recommended as follows:

- a. Lack of motivation to learn in the use of the Moodle application.

Learning motivation can be influenced by students' intrinsic and extrinsic factors. The connection with the application used is assumed to lead to learning methods and lecture materials. The two aspects that influence this motivation can then be investigated further to find more conical recommendations.

- b. Limited interaction with students and lecturers.



In the preparation of modules with Moodle-based applications, it is necessary to consider an interaction model with a larger portion, both between students and with lecturers. In addition to choosing a learning strategy design that is in accordance with the needs of the interaction, it is also necessary to consider the form of activities that can be accommodated by Moodle. In this case, it is recommended to conduct further development studies on strategies that provide a composition of activities that involve more intense interactions.

c. Internet connection.

Internet connection is indeed one of the variables that become obstacles in using Moodle applications. It is recommended to improve the supporting infrastructure of the internet network both on campus and where each student accesses Moodle. It can also be suggested to design forms of teaching activities that can be carried out asynchronously so that if there are connection problems, students can still attend lectures outside of the lecture time

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