

CHAPTER IV

RESEARCH FINDINGS AND DISCUSSION

The result of the research is presented in this chapter. It contains five parts namely 1) the result of the Confirmatory Factor Analysis, 2) description of the demographic data, 3) the result of t_test / ANOVA, 4) the result of Path Analysis and 5) the models used throughout the research.

A. Research Findings Description

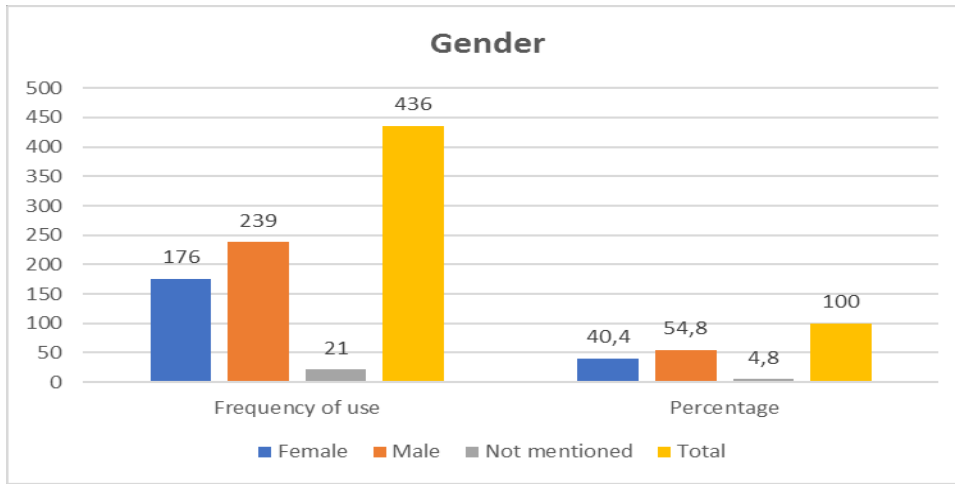
This section comprises the findings concerning the results from factor analysis, t-test and ANOVA, and path analysis. Prior to the presentations of these findings, the demographic data of the respondents is presented to provide background information to readers.

1. Demographic Variables

This section gives information by categories about male and female who participated in the survey. Further, it discusses the level of experience and frequency of use of Moodle. Also, it talks about the father's and mother's achieved education.

a. Gender

Graph 2 : Descriptive statistics for respondents' gender

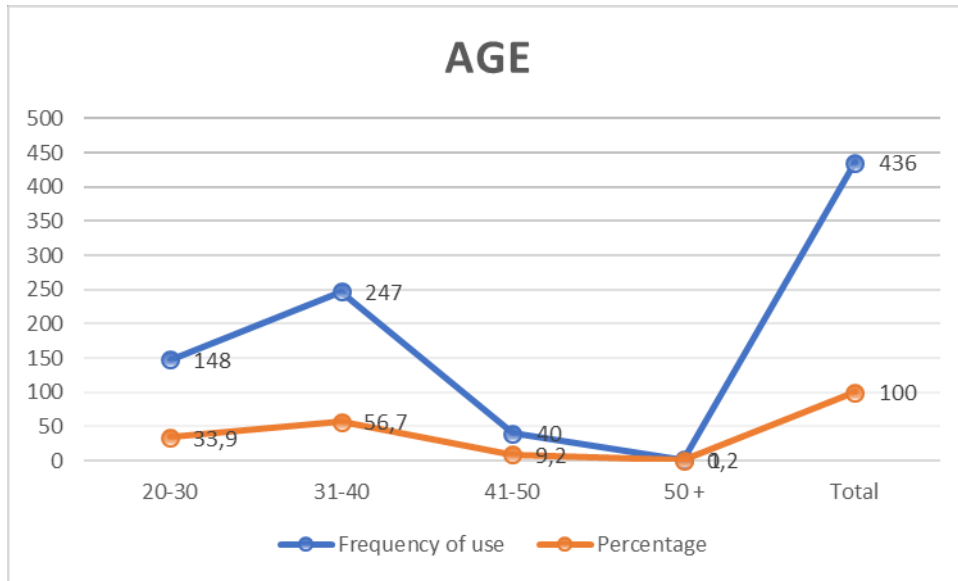


The graph above describes the gender contained in the result. There were 436 participants divided into 2 genders: female and male preservice teachers. The researcher studied the number of preservice teachers by gender who were engaged in using Moodle. The result of the study revealed that the number of male preservice teachers in the study is higher than the female one. The male preservice teachers were 239 while the female preservice teachers were 176. However, 21 of them did not mention their gender. Though, missing to say their gender did not impact the result of the findings. All the data have been analysed and interpreted statistically.

To conclude, it is understood that male preservice teachers are more engaged in learning English in ENSUP with 54.8 % of involvement. Definitely, it is important to support female's education by allowing many girls to attend school because female preservice teachers contribute a lot in the country's development particularly in education.

b. Age

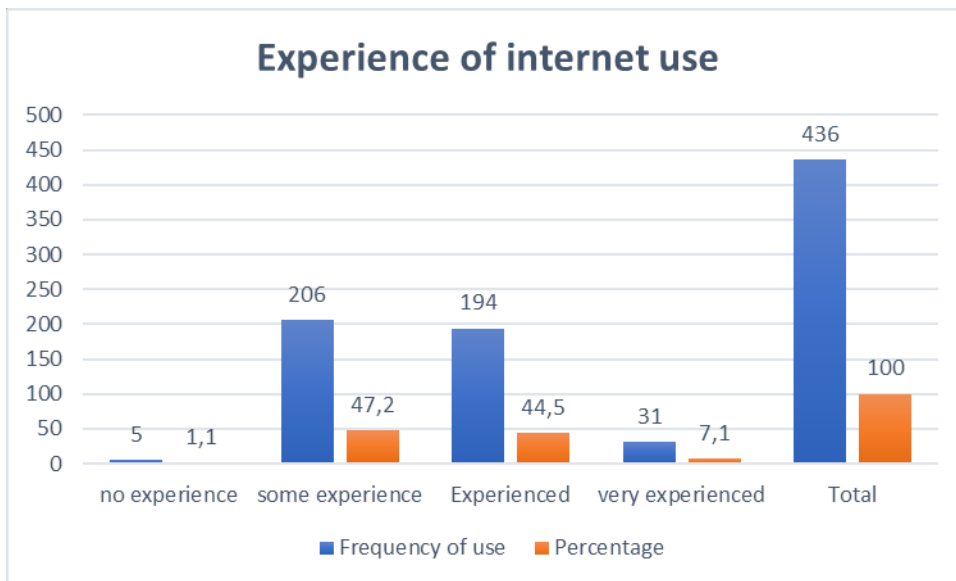
Table 3 : Descriptive statistics for respondents' age group



For the respondents' ages, the result showed that the 31-40 cohort age is more than any other group of age with 247 participant that is to say 56,7 % of involvement. That means the preservice teachers are young to use Moodle compared to the teachers with many years without experience. Moreover, except for the cohort age of 20-30, the elder the participants are, the least they use Moodle. For example, those who are 50 years old and more use it less than any other cohort group. Also, those who are older than 40 years old use it less than the youngest group that age ranges from 20 to 30.

c. Internet Experience

Graph 4: Descriptive statistics for respondents' experience on the internet



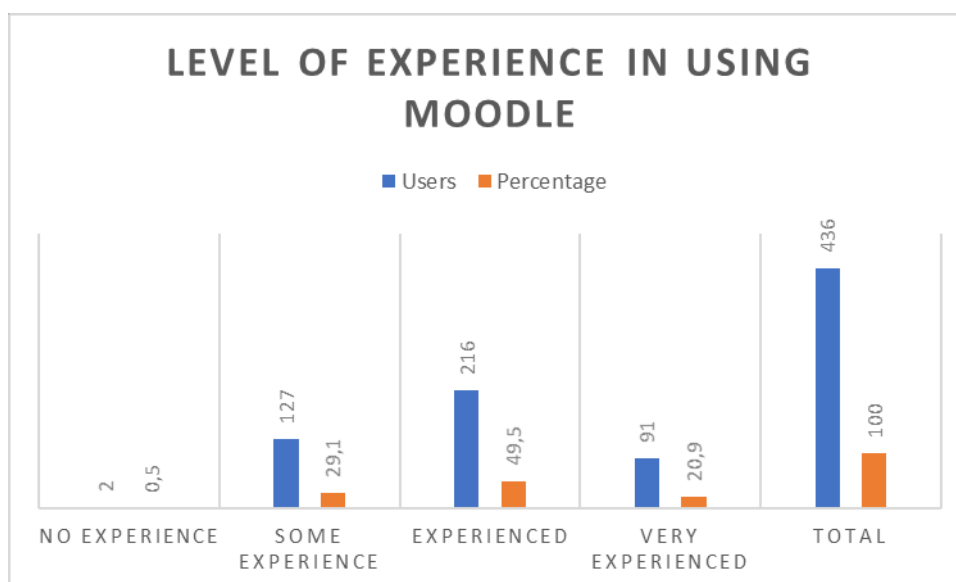
The result in this category revealed that among the preservice teachers, there are just 206 who have some experience in using the Internet. It means that the level of experience is lower than those who are very experienced that numbered only 31 with 7,1 % of the respondents. Otherwise, they have good knowledge to use it because the number of those without experience is very low with only 5 participants that is to say roughly 1,1 % of the respondents. In addition to that, we can see that the number of the different levels of experience decreases slightly from those with some experience to those with experience, and then sharply to those who are very experienced.

As a result, we can say that five preservice teachers do not have enough experience to use the Internet in teaching activities. This causes a big problem in the classroom setting such as lack of progress for the

learners, lack of access to e-resources etc. Therefore, it is recommended to provide them with some Internet training sessions and allow them to participate in workshops or even conferences in the E-learning domain. In the same regard, when they master the Internet service, they become very experienced and then the teaching activities will be successful undoubtedly.

d. Moodle Experience

Graph 5: Descriptive statistics for respondents' experience on Moodle



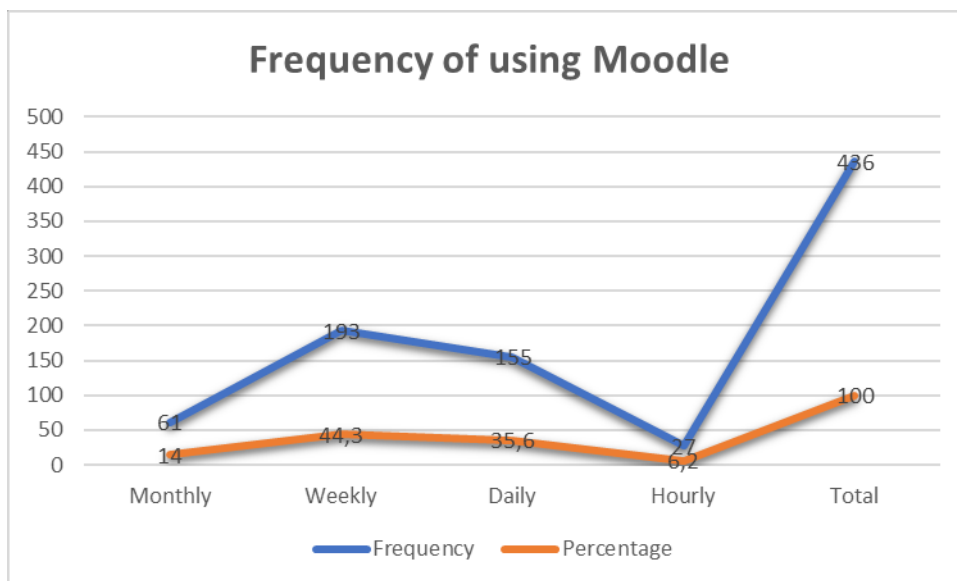
From the result presented above, we can learn that the preservice teachers who already experienced in using Moodle are more in number than the others. From the experienced participants, there are 216 of them who used Moodle in their life and only 2 who did not know how to use it. It means 49,5 % of the respondents are experienced. However, the second number is 127 with some experience in using Moodle.

Surprisingly for Moodle, the result showed that 91 participants were very experienced in using it for teaching purposes. That number is low because normally, those with a higher level of experience are wanted to take the top in number. Unfortunately, in the current study, they are low in number.

As a solution, the school administrators should give the preservice teachers a lot of encouragements for using it. Also, they should supply Moodle services in every single class at the university. Moreover, they should be trained intensively and extensively regarding the utilities of Moodle in order that they can start working with it.

e. Frequency of Moodle Use

Table 6: Descriptive statistics for respondents' frequency of Moodle use



The figures showed that almost the majority of the participants were using it on a weekly basis with 44,3 % of use. Then, the number decreases slightly to 35,6 % for the preservice teachers who use it on a

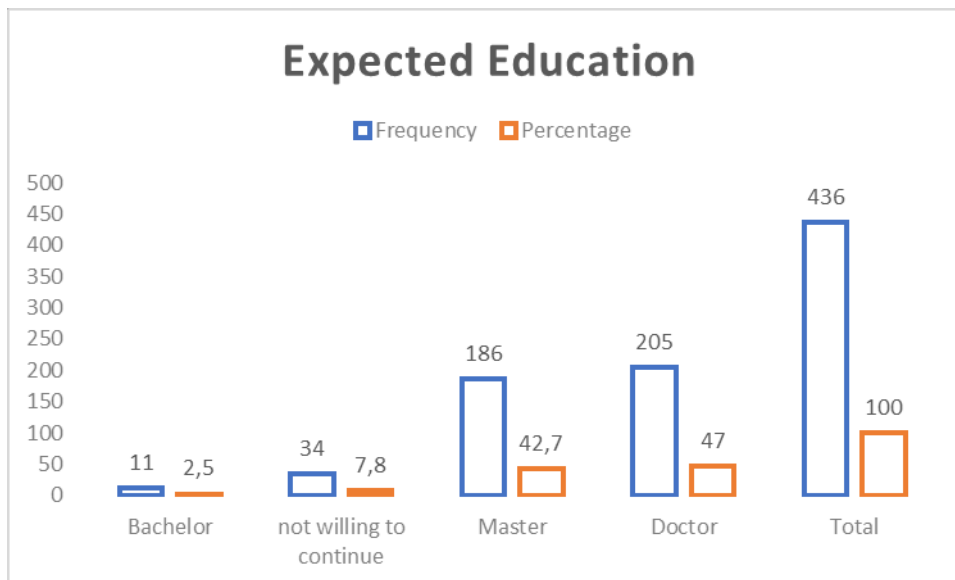
daily basis. The frequency decreased considerably to 14 % for a monthly basis and only 6,2 % of them use it every hour.

From that result, we can conclude that the frequency of Moodle use is very low with just 6,2 % for those who use it in every hour. Normally, Moodle should be used regularly like every hour. That frequency increases the knowledge of the preservice teachers to become Moodlers. The more we practise, the better we become: practice makes perfect!

Therefore, we should involve them to access Moodle as many times as possible. They need to increase from 6,2 to a higher frequency of use. This problem could be the reason why they have problems at school concerning using ICT for educational purposes.

f. Expected Education

Graph 7 : Descriptive statistics for respondents' expected education



From the graph above, the result showed that the respondents' expected education varies from one to another. The most important figure

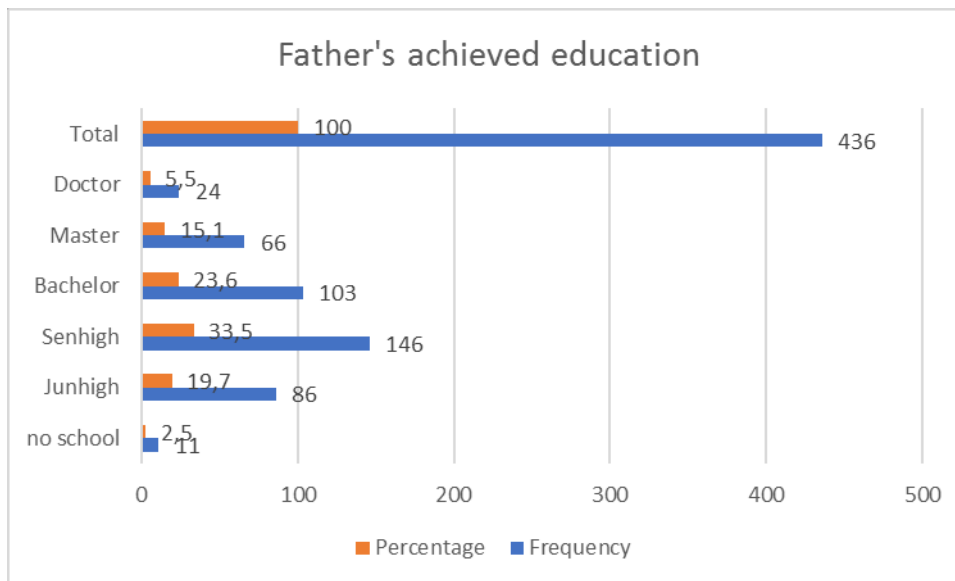
is those who plan to do a doctoral degree. They are 205 with the highest percentage of 47%. This says that they have a goodwill to advance in their professions by strengthening the educational background through more advanced levels.

From that figure, we can see in the graph that the level of willingness to continue to the higher education decreases from 186 for the master level to 11 for bachelor level. Though, those who selected for bachelor level did not give a true answer. Also, there were 34 of them who really did not have the will to continue their studies anymore.

As a result, we can conclude that the preservice teachers have good career plans if they receive support from their families and the government. It is very satisfactory to see the doctoral degree as the last destination for the majority of the preservice teachers. Therefore, an important consideration is necessary to these people, because only through advance studies a country can build its educational system.

g. Fathers' Achieved Education

Graph 8: Descriptive statistics for respondents' fathers achieved education



In the graph above, the result showed that the respondents' fathers achieved a certain level of education. Among them, there were just 146 who attended senior high school. And the figure decreased strongly to 86 for those who attended junior high school. More importantly, the figure rose again to 103 for those who attended the undergraduate level and then slightly decreased to 66 for graduate-level and only 24 for postgraduate level.

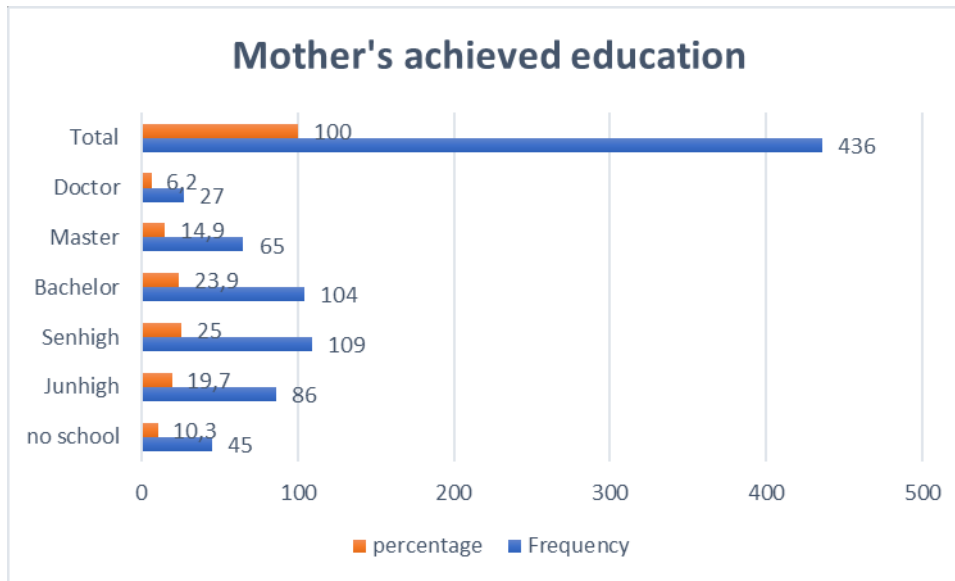
The graph shows then the fluctuation of fathers' attendance at school. Also, the result showed that only 24 fathers attended the doctoral level which is the highest level of education in the study. That is to say, the more the level is important, the least the attendees are.

To increase the level and the number of fathers, the government should increase the rate of access to school. It should promote education as

the key factor of a country's development. If parents are well educated with a high level of degrees, they can easily follow-up their children to continue their education to a higher level.

h. Mothers' Achieved Education

Graph 9: Descriptive statistics for respondents' mothers achieved education



The study revealed that mothers who achieved senior high school with 25% are more than on any other level. Besides, there was 104 mothers who received bachelor degrees which are close to the senior high school attendees. From that figure, the percentage of attendance varies from 14,9 of per centage for those who obtained master degrees to 6,2 % for mothers who obtained a doctoral degree.

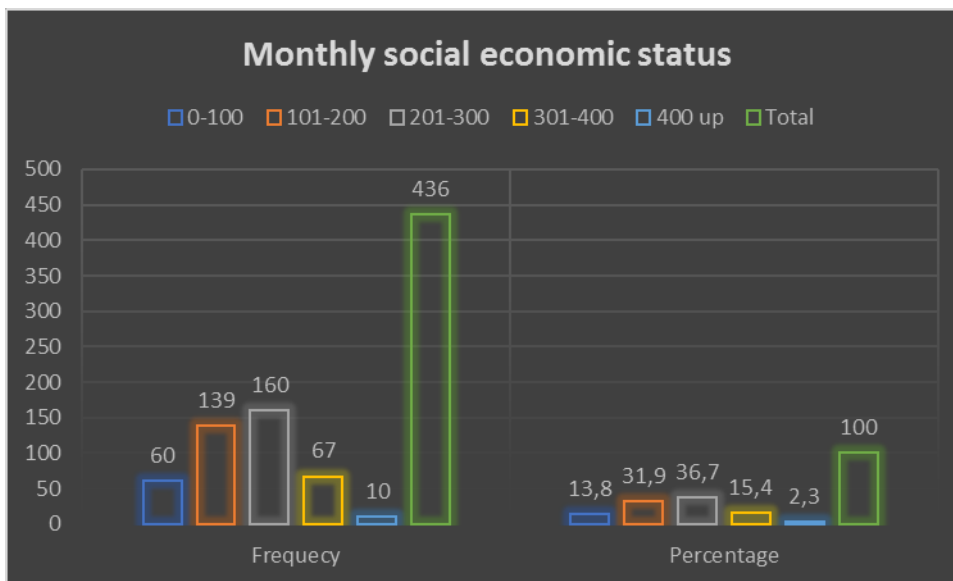
That means there is still fluctuation of mothers' attendance to school. It is important to understand that the possibilities to access education should be facilitated so we can have more advanced degree holders in the future. Lack of parents advanced level of education impacts

their children as well as we can see in the previous results that the majority of the participants are willing to attend the doctoral level even though the lowest rate of attendance to that level by parents are significantly low.

As a result, the rate of access to school must be taken at the best care by the government of Mali. today's children are the parents of tomorrow, therefore, allowing them to attend school by providing them with all the necessities is a big step to overcome the past losses in terms of education.

i. Social Economic Status

Graph 10 : Descriptive statistics for respondents' Social Economic Status



The participants' social-economic status is presented in the table above. The result revealed that many respondents were making money ranging from 201 to 300 USD per month. In contrast, just a few of them which means 10 participants were capable to earn up to 400 USD per

month. Additionally, only 67 participants could earn 301-400 USD per month.

That result means just the minority of the 436 preservice teachers which is 2,3 % of them who could make sufficient money per month compared to the others. Throughout the results presented in the result of this study, we can see that money is the key number one for any educational progress. Because we cannot attend school if we do not have enough money. That could be the reason why the majority of the parents did not attend the highest level of education, doctoral-level for example.

In this regard, the government and international organizations need to facilitate grants that allow easy access to education for all. Grants may vary from building more schools, equipping the libraries, proving more teachers training, offering scholarships or even opening large job opportunities for parents so that they can earn money and then enrol their children at school.

2. Results of the Confirmatory Factor Analysis

In the present study, the confirmatory factor analysis was conducted with Mplus 7.2. The result of the confirmatory factor analysis is reported as follows:

Table 11: Standardized Model Results: Standardization

| Two-Tailed | | | | |
|-------------------|-----------------|-------------|------------------|----------------|
| | Estimate | S.E. | Est./S.E. | P-Value |
| F1 BY | | | | |
| V10 | 0.356 | 0.066 | 5.357 | 0.000 |
| V12 | 0.466 | 0.058 | 7.997 | 0.000 |
| V13 | 0.419 | 0.063 | 6.659 | 0.000 |
| V14 | 0.558 | 0.049 | 11.291 | 0.000 |
| V15 | 0.451 | 0.058 | 7.736 | 0.000 |
| F3 BY | | | | |
| V21 | 0.383 | 0.067 | 5.681 | 0.000 |
| V22 | 0.574 | 0.076 | 7.604 | 0.000 |
| V23 | 0.381 | 0.066 | 5.772 | 0.000 |
| V24 | 0.363 | 0.068 | 5.295 | 0.000 |
| F6 BY | | | | |
| V36 | 0.332 | 0.068 | 4.860 | 0.000 |
| V38 | 0.423 | 0.070 | 6.007 | 0.000 |
| V40 | 0.408 | 0.073 | 5.606 | 0.000 |
| V42 | 0.304 | 0.067 | 4.539 | 0.000 |
| F7 BY | | | | |
| V46 | 0.474 | 0.068 | 6.918 | 0.000 |
| V47 | 0.575 | 0.081 | 7.072 | 0.000 |
| V48 | 0.325 | 0.068 | 4.771 | 0.000 |
| F8 BY | | | | |
| V50 | 0.335 | 0.070 | 4.762 | 0.000 |
| V51 | 0.679 | 0.084 | 8.092 | 0.000 |
| V52 | 0.465 | 0.068 | 6.815 | 0.000 |
| F9 BY | | | | |
| V55 | 0.372 | 0.075 | 4.950 | 0.000 |
| V56 | 0.458 | 0.083 | 5.522 | 0.000 |
| V59 | 0.315 | 0.078 | 4.039 | 0.000 |

The result presented in graph above explains the overall factors analyzed by Mplus. In total, there are six factors emerged from the CFA, i.e., Teachers' perception on the use of Moodle, teachers' Teachers' Teachers' belief about

Moodle as a teaching and learning tool, teachers' confidence in using Moodle, teachers' attitude in using Moodle, usefulness component of Moodle and control of using Moodle (self-efficacy in using Moodle).

a. Factor one: Teacher perception on the use of Moodle.

This factor describes how do teachers who use Moodle perceive it as a teaching tool. It consists of 5 items (#V10, #V12, #V13, #V14 and #V15). The item #V10 shows teachers can learn new techniques of teaching. The item #V12 means the teachers' trialability to learn more and more by using Moodle. The item #V13 refers to the renewal development of the teachers' profession when they use Moodle. The item #V14 explains that Moodle helps teachers in sharing knowledge with their colleagues, and also between students. And the last item #V15 shows how fast Moodle can grow teachers' knowledge. The items are listed in the following way:

#V10 : I learned new teaching techniques from Moodle

#V12 : I try new things in my teaching using Moodle

#V13 : Moodle renewed my enthusiasm for teaching

#V14 : Moodle encourages me to share my knowledge with colleagues

#V15 : Moodle updated my professional knowledge

The factor loading ranged from .558 (V14) to .356 (V10).

b. Factor three: Teachers' beliefs about Moodle as a teaching and learning tool.

This factor demonstrates the degree to which teachers believe in using Moodle for teaching. It comprised of 4 items. They are (#V21, #V22, #V23 and #V24). Item #V21 deals with the preservice teachers' sources of beliefs,

i.e. where they do find beliefs. The next item concerns with Moodle use as a teaching and learning tools by teachers. The third item is about preservice teachers' beliefs to integrate Moodle in schools. The last item is about preservice teachers' beliefs about Moodle in the educational process. The items are the following:

#V21: I believe that Moodle is a useful tool for teaching

#V22: I believe that Moodle is useful only for teachers

#V23: Moodle cannot contribute much in my teaching

#V24: I believe that Moodle can activate students to learn

The factor loadings ranged from .574 (V22) to .363 (V24).

c. Factor Six: Teachers' confidence in using Moodle.

The third factor emerged in this study is Teachers' confidence in using Moodle, i.e., how they are confident when they use Moodle as a teaching tool. It comprises four items namely (#V36, #V38, #V40 and #V42). The first item says how well teachers are when they use Moodle in teaching. The second item is about teachers' duration to master using Moodle, i.e., how much time do they need to learn completely Moodle. The third item is about teachers who use Moodle, i.e., they are not afraid to use Moodle as being a new tool to them. And the last item deals with teachers who want to know how other teachers use Moodle comfortably. It means, they want to know if every user of Moodle enjoys using it in the classroom activities. Here are the items:

#V36: I have less troubles to use Moodle

#V38: It takes me a long time to understand Moodle

#V40: I find using Moodle frightening

#V42: I don't understand how some people enjoy very much on Moodle

The factor loading ranged from .423 (V38) to .304(V42).

d. Factor Seven: Teachers' attitude in using Moodle.

This factor is about teachers' attitude when they use Moodle, i.e., how they feel or how they behave when they use it. It consists of three items namely, i.e., (#46, #47 and #48). The item #V46 shows that teachers who use Moodle are not afraid of it even though the model is new to them. So, they use it as they want. The item #V47 explains the opposite attitude to the previous item. It tries to show that teachers who use Moodle are not comfortable. And the item #V48 explains the boldness of the teachers who use it in class. As a result, they are fine to use Moodle in all circumstances despite their newness to them. These items are written below:

#V46: I do not feel worried about using Moodle

#V47: Moodle does not make me feel comfortable

#V48: Using Moodle does not frighten me at all

The factor loading ranged from .575 (V47) to .325 (V48).

e. Factor Eight: Usefulness component of Moodle.

This factor determines what Moodle can be useful for teachers. It consists of three items (#V50, #V51 and #V52). Item #V50 explains how teachers benefit help from using Moodle. It helped them to do a lot of work in

teaching. Item #V51 means that teachers who use Moodle can do much more things beyond teaching. Finally, item #V52 shows that Moodle reinforces teachers' professional development. That is to say, using Moodle strengthens their teaching techniques. The items are classified below:

#V50: Moodle helps me to do more imaginative work

#V51: I can do many things with Moodle

#V52: Moodle can enhance my work of teaching

The factor loading ranged from .679 (V51) to .335(V50).

f. Factor Nine: Control of using Moodle (self-efficacy in using Moodle).

This factor describes teachers' controllability of Moodle, i., e., teachers have a good command of using the Moodle platform when teaching. The factor consists of three items (#V55, #V56, and #V59). The first item is showing that teachers who use Moodle do whatever they want Moodle to perform for them. So, they control the command of using Moodle. The second item explains how teachers master Moodle. That means even if they face some technical difficulties while using it, they can arrange it so that it works without calling an expert to solve the problem for them. The items are here:

#V55: I can make Moodle do what I want

#V56: If I get problems using Moodle, I can solve them myself

#V59: I do not need someone to tell me the best way to use Moodle

The factor loading ranged from .458 (V59) to .315(V56).

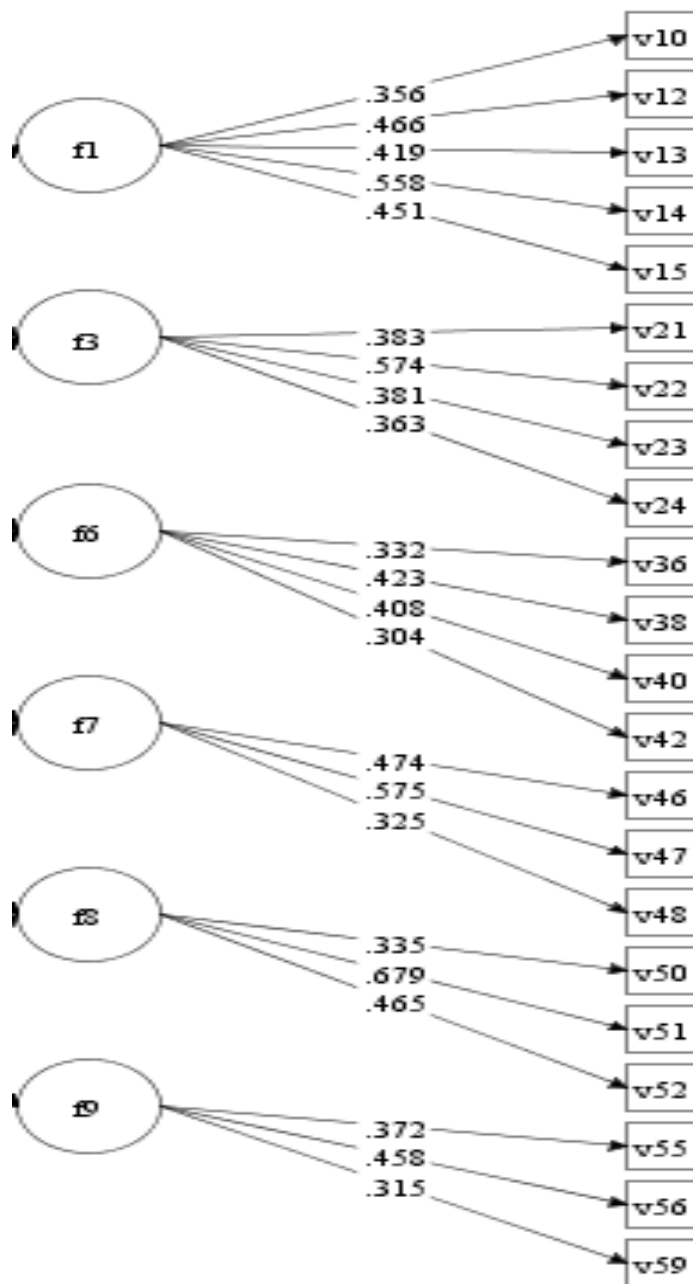


Figure 1 Factors model

Table 12: Summary and criteria of the fit indices

| Types of Fit Indices | Criteria | Result of the analyses | Judgment |
|-----------------------------|--------------------|--|--|
| RMSEA | < .008 | As the current research Estimate is 0.019, therefore it is good and fits the model. | Based on Browne and Curdek (1993 theory), if the Estimation is under or equal to 0.08, the result of the model can be accepted or said to be fit to the proposed model |
| CFI | \geq .0.95 | As a result, the figure of CFI in this study is 0.94 and finally turn out to be good and fit to the proposed model | Blentler (1990) argued that if it higher or equal to 0.95, it is then accepted and fit to the proposed model |
| TLI | \geq .0.90/.0.95 | The present study showed 0.93 which is between the two above scholars. Definitely, the model is accepted based on the theory. | According to (Arbuckle, 1997; Hair dkk, 1995), if the result is higher or equal to 0.90 and 0.95, the hypothesis is said to be valid |
| Chi-SQUARE | (=CHIINV(0,05;194) | As a result, the Degree of Freedom (df) in this research is 231. So, the model designed in this study is deemed to be true and valued. | When it is lower or equal to 227, it is said to be good (=CHIINV(0,05;194) |

3. Result of the t_test and ANOVA

This section describes the result of how the preservice teachers' perceptions, beliefs, confidence and attitudes differ by their demographic backgrounds. The researcher analysed and interpreted the data using t_test and ANOVA.

a. Demographic Information

Independent Sample Test: Gender (Male and Female)

Table 1 : Result of Independent Sample Test

| | | t-test for Equality of Means | | | | | | |
|---------|-----------------------------|------------------------------|---------|-----------------|-----------------|-----------------------|---|--------|
| | | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | Lower | Upper |
| Factor1 | Equal variances assumed | .066 | 413 | .947 | .00140 | .02104 | -.03996 | .04275 |
| | Equal variances not assumed | .066 | 363.169 | .948 | .00140 | .02124 | -.04038 | .04317 |
| Factor3 | Equal variances assumed | -.263 | 413 | .793 | -.00487 | .01853 | -.04131 | .03156 |
| | Equal variances not assumed | -.261 | 366.927 | .794 | -.00487 | .01867 | -.04158 | .03184 |
| Factor6 | Equal variances assumed | .963 | 413 | .336 | .01506 | .01563 | -.01567 | .04579 |
| | Equal variances not assumed | .959 | 370.240 | .338 | .01506 | .01571 | -.01583 | .04596 |
| Factor7 | Equal variances assumed | .828 | 413 | .408 | .01762 | .02127 | -.02419 | .05943 |
| | Equal variances not assumed | .829 | 378.408 | .408 | .01762 | .02125 | -.02417 | .05941 |
| Factor8 | Equal variances assumed | 1.948 | 413 | .052 | .03201 | .01644 | -.00029 | .06432 |
| | Equal variances not assumed | 1.928 | 362.184 | .055 | .03201 | .01661 | -.00064 | .06467 |
| Factor9 | Equal variances assumed | .652 | 413 | .515 | .01023 | .01570 | -.02063 | .04109 |
| | Equal variances not assumed | .653 | 378.735 | .514 | .01023 | .01568 | -.02060 | .04106 |

Factor one: Teacher perception on the use of Moodle

From Table 1, $t = .066$ with value of Sig. (2-tailed) 0.947 is greater than Sig. $>.05$. From this result, we can say that both male and female preservice teachers have the same level of perception in using Moodle. There is no significant difference between male and female. Therefore, the H_0 hypothesis is accepted, however, the H_a hypothesis is rejected.

Factor three: Teachers belief about Moodle as a teaching and learning tool

From Table 1, $t = -.263$ with a value of Sig. $.793$ is greater than Sig. (2-tailed) $>.05$. The result shows there is no significant difference between male and female preservice teachers' beliefs in using Moodle. Therefore, the H_0 hypothesis is accepted, however, the H_a hypothesis is rejected.

Factor six: Teachers confidence in using Moodle

From Table 1, $t = .963$ with a value of Sig. (2-tailed) $.336$ is greater than Sig. $>.05$. The result shows there is no significant difference between Male and Female preservice teachers in regards to their confidence in using Moodle. That is to say both of them have the same level of confidence in using Moodle. Therefore, the H_0 hypothesis is accepted and the H_a hypothesis is rejected.

Factor seven: Teachers attitude in using Moodle

From Table 1, $t = .828$ with a value of Sig. (2-tailed) $.408$ is greater than Sig. $>.05$. The result shows there is no significant difference between Male and Female preservice teachers in regards of their affective components in using Moodle. That is to say, both of them have the same level of attitude in using Moodle. Therefore, the H_0 hypothesis is accepted and the H_a hypothesis is rejected.

Factor eight: Usefulness component of Moodle

From Table 1, $t = 1.948$ with a value of Sig. (2-tailed) $.052$ is higher than Sig. $>.05$. The result shows there is no significant difference between Male and Female preservice teachers in regards to their usefulness components in using Moodle. That is to say that they have the same levels of usefulness component in

using Moodle with their experiences. Therefore, the H_0 hypothesis is accepted and the H_a hypothesis is rejected.

Factor nine: Control of using Moodle (self-efficacy in using Moodle).

From Table 1, $t = .652$ with a value of Sig. (2-tailed) $.515$ is greater than Sig. $>.05$. The result shows there is no significant difference between Male and Female preservice teachers in regards of their controllability in using Moodle. That is to say that they have the same level of controllability in using Moodle and their experiences. Therefore, the H_0 hypothesis is accepted and the H_a hypothesis is rejected.

b. Educational background

This section shows the result of the preservice teachers' educational background (Experience with Moodle and Frequency of using Moodle) concerning to the six factors of the study.

Table 2 : Moodle experience

| ANOVA | | | | | | |
|---------|----------------|----------------|-----|-------------|-------|------|
| | | Sum of Squares | df | Mean Square | F | Sig. |
| Factor1 | Between Groups | .521 | 3 | .174 | 3.965 | .008 |
| | Within Groups | 18.937 | 432 | .044 | | |
| | Total | 19.458 | 435 | | | |
| Factor3 | Between Groups | .315 | 3 | .105 | 3.056 | .028 |
| | Within Groups | 14.828 | 432 | .034 | | |
| | Total | 15.142 | 435 | | | |
| Factor6 | Between Groups | .178 | 3 | .059 | 2.456 | .063 |
| | Within Groups | 10.436 | 432 | .024 | | |
| | Total | 10.614 | 435 | | | |
| Factor7 | Between Groups | .270 | 3 | .090 | 1.987 | .115 |
| | Within Groups | 19.596 | 432 | .045 | | |
| | Total | 19.866 | 435 | | | |
| Factor8 | Between Groups | .121 | 3 | .040 | 1.461 | .225 |
| | Within Groups | 11.964 | 432 | .028 | | |
| | Total | 12.085 | 435 | | | |
| Factor9 | Between Groups | .152 | 3 | .051 | 2.022 | .110 |
| | Within Groups | 10.813 | 432 | .025 | | |
| | Total | 10.964 | 435 | | | |

Factor one: Teacher perception on the use of Moodle

From Table 2, Moodle experience for preservice teachers' result is this: The Sig. .008 is lower than the Sig. .05. From that result presented above, there is a significant difference between the preservice teachers who have no experience, with some experience, experience and those who are very experienced toward their perception in using Moodle. Therefore, the H_a hypothesis is accepted but the H_o hypothesis is rejected.

Factor three: Teachers belief about Moodle as a teaching and learning tool

From Table 2, the Sig. is .028 which is lower than Sig .05. We can conclude that there is a significant difference between preservice teachers regarding their beliefs and experiences of using Moodle. Therefore, the hypothesis H_a is accepted and the hypothesis H_o is rejected.

Factor six: Teachers confidence in using Moodle

From Table 2, the result shows a Sig of .063 which is higher than Sig .05. We can say that preservice teachers' confidence regarding their experience to use Moodle is considerably the same. There is no significant difference. Therefore, the H_o hypothesis can be accepted and the H_a hypothesis can be rejected.

Factor seven: Teachers attitude in using Moodle

From Table 2, the result shows for factor seven that the Sig is .115 which is higher than Sig .05. So, there is no significant difference between preservice teachers' affective components in using Moodle. Both males and females have the same affection to use Moodle. Therefore, the H_o hypothesis can be accepted but the H_a hypothesis is to be rejected.

Factor eight: Usefulness component of Moodle

From Table 2, the result shows that Factor eight has a Sig of .225 which is higher than Sig .05. That is to say that there is no significant difference between preservice teachers' Usefulness component of Moodle and their experiences. They all have the same level of feeling toward the use of Moodle. Therefore, the hypothesis H_o is accepted and the hypothesis H_a is rejected.

Factor nine: Control of using Moodle (self-efficacy in using Moodle)

From Table 2, the result of Factor nine has a Sig of .110 which is of course, higher than the normal Sig .05. There is no significance difference between preservice teachers' controllability of Moodle components regarding their experiences in using Moodle. Therefore, the Ho hypothesis is accepted whereas the Ha hypothesis is rejected.

ANOVA by Moodle Frequency of Use:

Table 3: Frequency of using Moodle

| ANOVA | | | | | | |
|---------|----------------|----------------|-----|-------------|-------|------|
| | | Sum of Squares | df | Mean Square | F | Sig. |
| Factor1 | Between Groups | .385 | 3 | .128 | 2.906 | .034 |
| | Within Groups | 19.073 | 432 | .044 | | |
| | Total | 19.458 | 435 | | | |
| Factor3 | Between Groups | .213 | 3 | .071 | 2.050 | .106 |
| | Within Groups | 14.930 | 432 | .035 | | |
| | Total | 15.142 | 435 | | | |
| Factor6 | Between Groups | .142 | 3 | .047 | 1.958 | .120 |
| | Within Groups | 10.471 | 432 | .024 | | |
| | Total | 10.614 | 435 | | | |
| Factor7 | Between Groups | .185 | 3 | .062 | 1.351 | .257 |
| | Within Groups | 19.682 | 432 | .046 | | |
| | Total | 19.866 | 435 | | | |
| Factor8 | Between Groups | .109 | 3 | .036 | 1.310 | .271 |
| | Within Groups | 11.977 | 432 | .028 | | |
| | Total | 12.085 | 435 | | | |
| Factor9 | Between Groups | .265 | 3 | .088 | 3.565 | .014 |
| | Within Groups | 10.700 | 432 | .025 | | |
| | Total | 10.964 | 435 | | | |

Factor one: Teacher perception on the use of Moodle

From Table 3, we can see that the Sig is .03 which is positive and significant. The researcher admitted that both male and female preservice teachers have different frequency of using Moodle in terms of their perception in using Moodle. The hypothesis H_a is therefore accepted since the Sig is lower than .05, whereas the H_o is rejected.

Factor three: Teachers belief about Moodle as a teaching and learning tool

From Table 3, the result of the third factor showed a Sig of .10. That is higher than Sig .05 even though it is positive. From that figure, we can know that there is no significant difference between those who use Moodle in a monthly, weekly, daily and hourly basis in terms of their beliefs in using Moodle. The hypothesis H_a is rejected while the hypothesis H_o is accepted.

Factor six: Teachers confidence in using Moodle

From Table 3, the Sig for Factor six is positive but not significant with .120. It can be concluded that male and female preservice teachers' confidence is the same towards their frequency of using Moodle. Therefore, the hypothesis H_a is not significant but positive while the hypothesis H_o is positive and accepted.

Factor seven: Teachers attitude in using Moodle

From Table 3, we can see that the Sig is .257. That is already positive but there is no significant difference since it is higher than .05. The result says that both male and female preservice teachers' attitudes for Teachers' attitude in using Moodle is almost the same in terms of the frequency of use. Therefore, the hypothesis H_a is rejected and the hypothesis H_o is accepted.

Factor eight: Usefulness component of Moodle

From Table 3, we can see that Sig is .271. This explains that it is positive but not significant. Thus, preservice teachers' attitudes in terms of using components of using Moodle is the same towards the frequency of using Moodle. The hypothesis Ha is rejected and the hypothesis Ho is accepted.

Factor nine: Control of using Moodle (self-efficacy in using Moodle)

From Table 3, the result showed a Sig of .014 which is not only positive but also significant because it is lower than .05. That means preservice teachers' attitudes in terms of control components of using Moodle vary from those who use it in a monthly, weekly, daily and hourly basis. Therefore, the hypothesis Ha is accepted and the hypothesis Ho is rejected.

4. Result of the Path Analysis

Table 13 : Path analysis

| VARIABLES | FACTORS | SYMBOL |
|------------------|--|---------------|
| Perception | F1 – Teacher perception on the use of Moodle | X1 |
| Belief | F3 – Beliefs about Moodle as Teaching and Learning Tool | X2 |
| Confidence | F6 – Teachers' confidence in using Moodle | Y |
| Attitude | F7 – Teachers' attitude in using Moodle | - |
| | F8 – Usefulness component of Moodle | Z |
| | F9 – Control of using Moodle (self-efficacy in using Moodle) | - |

a. Models

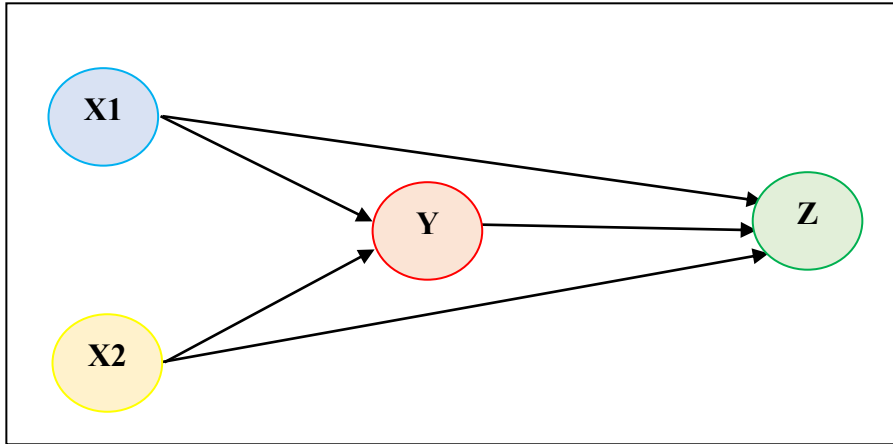
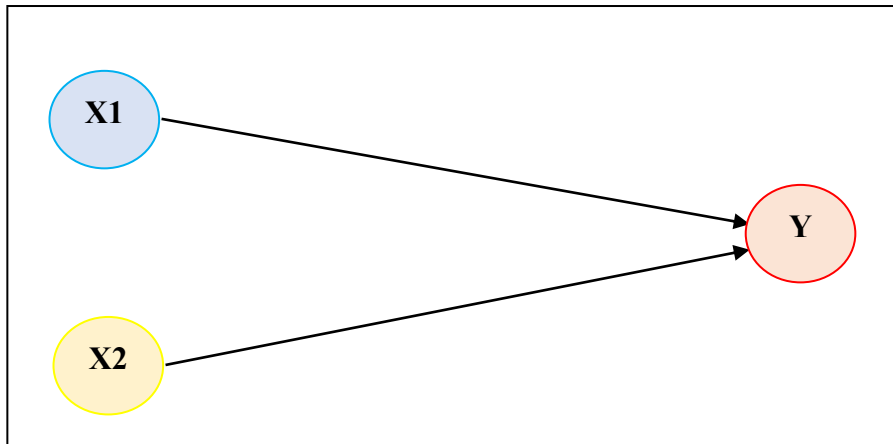


Figure 2 : Model of analysis

In the model presented above, both **X1** (Teacher perception on the use of Moodle) and **X2** (Beliefs about Moodle as Teaching and Learning Tool) are related to **Y** (Teachers' confidence in using Moodle). After that, **Y** is also found related to **Z** (Usefulness component of Moodle).

b. Model 1



c. Output SPSS Model 1 (model summary)

Table 14 : (Model Summary)

| Model Summary | | | | |
|---|-------------------|----------|-------------------|----------------------------|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .693 ^a | .480 | .478 | .11285 |
| a. Predictors: (Constant), Factor3, Factor1 | | | | |

From the result above, the R Square is .480 which means statistically there is 48 % of correlation with Y, therefore, it is strongly significant whence both Teacher perception on the use of Moodle and Belief about Moodle as Teaching and Learning Tool have a strong relation toward Teachers' confidence in using Moodle. Therefore, 52 % is obtained from the external variables.

d. Output SPSS Model 1 (coefficient)

Table 15 : (Coefficient)

| Coefficients^a | | | | | | |
|---------------------------------|------------|-----------------------------|------------|---------------------------|-------|-------|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 9.828E-7 | .005 | | .000 | 1.000 |
| | Factor1 | .191 | .039 | .258 | 4.833 | .000 |
| | Factor3 | .399 | .045 | .476 | 8.925 | .000 |
| a. Dependent Variable: Factor6 | | | | | | |

The coefficients displayed on the table above explain that Teacher perception on the use of Moodle and Belief about Moodle as Teaching and Learning Tool are strongly significant with .000 for both of them since it is lower than .05. therefore, they are related to Teachers' confidence in using Moodle. The Beta of Teacher perception on the use of Moodle is .258 towards Confidence which is lower than .05, and; the beta of Belief about Moodle as Teaching and Learning Tool is .476 towards Confidence which is also lower than .05 and therefore they are accepted. Furthermore, the following model shows us the coefficient between them:

e. Model 2

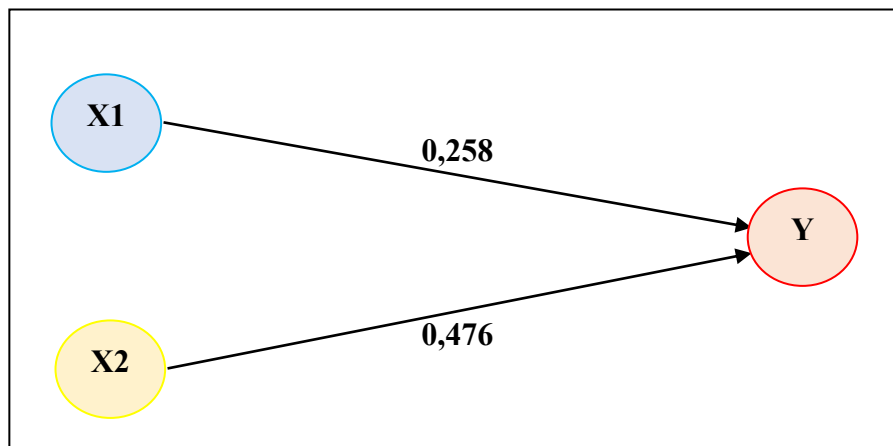
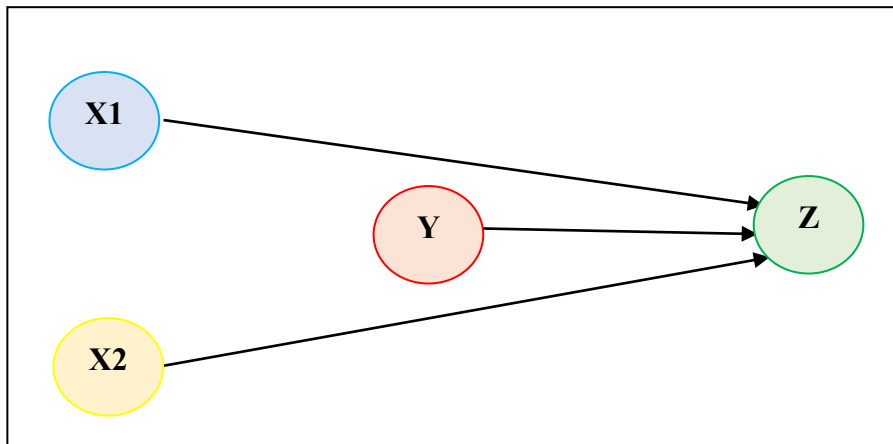


Figure 3 : Output of Model 2



In the model 2 presented above, **X1** (Teacher perception on the use of Moodle), **X2** (Beliefs about Moodle as Teaching and Learning Tool) and **Y** (Teachers' confidence in using Moodle) lead to **Z** (Usefulness component of Moodle).

f. Output SPSS Model 2 (model summary)

Table 16 : (Model Summary)

| Model Summary | | | | |
|--|-------------------|----------|-----------------|------------------------------|
| Model | R | R Square | Adjusted Square | R Std. Error of the Estimate |
| 1 | .594 ^a | .353 | .349 | .13453 |
| a. Predictors: (Constant), Factor6, Factor1, Factor3 | | | | |

From the result above, R Square is .353 which means statistically there is 35 % of relevance with **Z**, therefore, it is strongly significant whence both Teacher perception on the use of Moodle, Belief about Moodle as Teaching and Learning Tool, and Teachers' confidence in using Moodle have a strong

relation with Usefulness component of Moodle. This shows that 65 % came from other variables not inside of this research.

g. Output SPSS Model 2 (coefficient)

Table 17 : (Coefficient)

| Coefficients^a | | | | | | |
|---------------------------------|------------|-----------------------------|------------|---------------------------|--------|------|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | -4.942E-6 | .006 | | .000 | .999 |
| | Factor1 | .277 | .048 | .352 | 5.748 | .000 |
| | Factor3 | -.171 | .058 | -.191 | -2.950 | .003 |
| | Factor6 | .492 | .057 | .461 | 8.587 | .000 |
| a. Dependent Variable: Factor8 | | | | | | |

The coefficients displayed on the table above explains that Teacher perception on the use of Moodle is significant with Sig .000 to the Usefulness component of Moodle. From the Beta, it has 35 % of influence as well. Besides, Belief about Moodle as Teaching and Learning Tool is significant with Sig .000 towards Usefulness component of Moodle with -19 % of influence.

Also, Teachers' confidence in using Moodle is significant with Sig .000 towards Usefulness component of Moodle with 46 % of influence from the Beta result. Therefore, these three factors have a good influence on the Usefulness component of Moodle. In the Model below, the coefficient is presented accordingly to the analysis result:

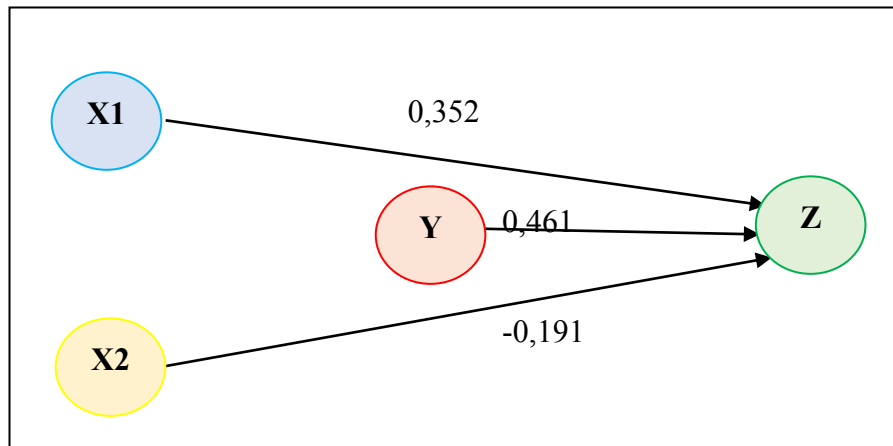


Figure 4 : Combination of the factors model

In the table above, we have the overall connection between the four factors that are being analyzed. First of all, Teacher perception on the use of Moodle has a Value Beta of 0,258 connected with Teachers' confidence in using Moodle. Also, it has a Value Beta of 0,352 towards the Usefulness component of Moodle.

Second, the Beliefs about Moodle as a Teaching and Learning Tool has a Beta of 0,476 of strength towards Teachers' confidence in using Moodle. That means the level of strength is good. At the same time, it has -0,191 towards Usefulness component of Moodle. But this number is negative because it is minus. Third, Teachers' confidence in using Moodle has a Beta of 0,461 towards the Usefulness component of Moodle as well and that number shows a good strength between them.

h. Analysis Interpretation

Perception (**X1**) on belief (**Y**) is significant because the P – Value is (0,000) and it is less than $< 0,05$. The variable belief (**X2**) has an effect on confidence (**Y**). Its P – Value is 0.000 and less than .05. For perception toward attitude, there significant effect to attitude. Belief towards attitudes coefficient has an effect because the P – Value is (-1.191). For confidence, there is a significance from Confidence to Attitude with 1 a P -Value of 0.000 and less than .05.

a. Effect of **X1** from **Y** to **Z** $= 0,258 \times 0,461 = 0,119$

Total effect of **X1** to **Z** $= 0,352 + 0,119 = 0,471$

b. Effect of **X2** from **Y** to **Z** $= 0,476 \times 0,461 = 0,219$

c. Total effect of **X2** to **Z** $= (-0,191) + 0,219 = 0,028$

$$e1 = \sqrt{(1-R \text{ Square})} = \sqrt{(1 - 0.480)} = \sqrt{0,52} = 0,721$$

$$e2 = \sqrt{(1-R \text{ Square})} = \sqrt{(1 - 0.353)} = \sqrt{0,647} = 0,804$$

Therefore, the hypothesis reads that “Perception (**X1**) and Belief (**X2**) are related to Confidence (**Y**) that consequently they lead to Attitude (**Z**)”.

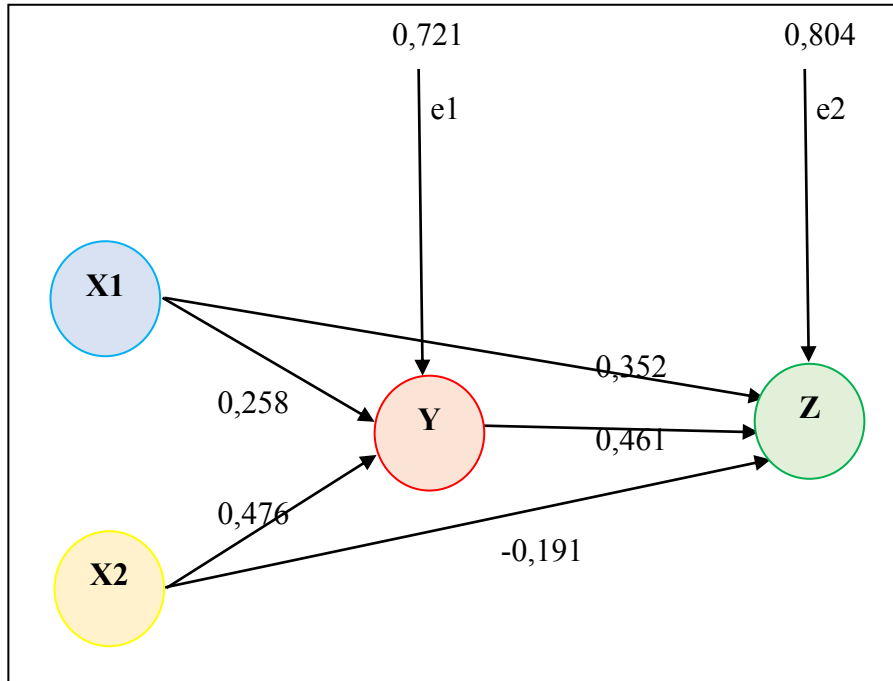


Figure 5 : The path analysis diagram

i. Description for the model coefficient value:

The next step is to measure the value of the path coefficient model I and the path coefficient value model II. Based on the analysis results, it shows that the significance values are all below 0.05 which indicates that the:

1. Correlation of perception variables toward attitude is significant
2. Correlation of perception variables towards attitude through confidence is significant
3. Correlation of beliefs variables toward attitude is significant
4. Correlation of beliefs variables on attitude through confidence is significant

Based on the results of the analysis in model I, it shows the value of R square = 0.480 which indicates that the contribution of perception variables to attitude directly or through confidence is 48% whereas the rest (100% - 48%) is the contribution of other variables that not included in the study. Meanwhile, to find the value of e1, we can use the following formulae:

$$\text{➤ } e1 = \sqrt{(1 - R \text{ Square})}$$

$$\text{➤ } e1 = \sqrt{(1 - 0.480)}$$

$$\text{➤ } e1 = \sqrt{0.52}$$

$$\text{➤ } e1 = 0.721$$

Based on the value of e1, the path diagram of the model I is as follows:

$$Y = PYX1 + PYX2 + e1$$

$$Y = 0.258X1 + 0.476X2 + 0.721$$

Meanwhile, based on the results of the analysis on the Model II, it shows the value of R square = 0.353 which indicates that the contribution of perception variables to attitude directly or through confidence is 35.3% whereas the rest (100% - 35.3%) is a contribution from other variables that are not included in the current study. Meanwhile, to find the value of e2, we can use the following formulae:

$$e2 = \sqrt{(1 - R \text{ Square})}$$

$$e2 = \sqrt{(1 - 0.353)}$$

$$e2 = \sqrt{0.647}$$

$$e2 = 0.804$$

Based on the e2 value, the model II path diagram is made as follows:

$$Y = PYX1 + PYX2 + PYX3 + e2$$

$$Y = 0.352X1 - 0.191X2 + 0.461X3 + 0.804$$

Therefore, the correlation values and “e” values in the overall model can be displayed in the diagram as follows:

B. Discussion

The discussion section is related to the findings of the research and it reflects the literature review. It is a component of three sections: demographic background, the dimensions of perception, belief, confidence and attitude, and the correlation between them.

1. Demographic information

The results of this study indicate that altogether male and female preservice teachers had the same level of perception, belief, confidence and attitudes in using Moodle for teaching English.

Nevertheless, the finding of the current study does not support the previous research by Sonmez (2018:113) that revealed Moodle users perceive it positively. The largest part of the study respondents was favourable to use Moodle Sonmez (2018:113). A possible explanation for this might be that the respondents of the current study would have different perceptions, beliefs, confidence and attitudes in using Moodle. In accordance with the present results, a previous study has demonstrated that pre-service teachers have a positive understanding to use Moodle as a teaching tool to enhance both the teaching process and learning process the result showed that pre-service

teachers have a positive understanding to use Moodle as a teaching tool to enhance both teaching process and learning process Alzouebi et. al, (2014:1). Together these results provide important insights into perception, belief, confidence and attitude.

2. Educational background

Another important finding was that in Table 21, the result showed a piece of evidence that male and female preservice teachers have different perception and belief in terms of using Moodle as a teaching and learning tool. This finding is consistent with that of Emaliana (2017:84) who argued that there was a positive and significant relationship between belief and knowledge to use Moodle.

The finding broadly supports the work of other studies in this area. Alzouebi (2014:1) argued that teachers have a positive perception in using Moodle. Moodle makes learners busy and busy when they use Moodle. This outcome is contrary to that of Khany & Goreyshi (2013:7) who found the respondents of the study have positive attitudes in using and integrating Moodle in teaching English. Therefore, the hypotheses H_0 are accepted and the hypotheses H_a are rejected.

It has been suggested that teachers have a positive attitude in using Moodle (Kırmızı, 2014:1324). This does not appear to be the case. In the current study, not only teachers have a positive attitude, but also, they a positive perception, belief and confidence. Finally, we can conclude that male and female preservice teachers use Moodle in different moments and different

levels in regard to their perception and attitude based on the results; and they use at the same moments and at the same level of time referring to their beliefs and confidence.

3. Dimensions of perception, belief, confidence and attitude

This study has been unable to demonstrate that there were sixteen dimensions. Surprisingly, instead of sixteen dimensions, the Confirmatory Factor Analysis showed only 12 dimensions. The finding is contrary to the previous studies which have suggested that sixteen dimensions are in this research. The sixteen dimensions are divided into six factors which are: 1) teachers' perception on the use of Moodle, 2) teachers' belief about Moodle as a teaching and learning tool, 3) teachers confidence in using Moodle, 4) teachers attitude in using Moodle, 5) usefulness component of Moodle and 6) control of using Moodle (self-efficacy in using Moodle).

Perceptions are the key indicators in using ICT tools for educational purposes. The finding was also reported by Ahmed et al., (2017:570) who found that teachers perceive Moodle. It provides the effects that lead believing to integrate Moodle in the curriculum so that teachers can learn how to use it for a specific purpose. Therefore, teachers who perceive Moodle as a teaching tool are more likely to use it than those who did not perceive it before. These results corroborate the findings of a great deal of the previous work in Cheok (2017:20) who argued that teachers secondary schools perceptions and beliefs are so important. It means they are related in terms of using ICT in teaching.

One unanticipated finding was that Ertmer et al., (2014:1533) study revealed that experiences with computers for teaching purposes enable teachers who believe to be confident in its important and understand it as a teaching tool. Moreover, teachers' confidence leads to their attitudes in using Moodle for teaching purposes. If teachers are confident to use Moodle in teaching practices, it directly improves their attitudes, i., e., to they become aware of how to use it conveniently. This study supports evidence from previous survey Bozdogan & Ozen (2014:191) who argued that one of the students expressed that his/her confidence made her attitude grow.

4. Correlation between perception, belief, confidence and attitude

A possible explanation for this might be that the result from the Path Analysis helped to know that preservice teachers' perceptions, beliefs, confidence and attitudes are positively and significantly correlated. Therefore, the finding shows that there is a positive and a significant correlation between perception, belief, confidence and attitude. These relationships may partly be explained by Hwee (2013:32) study that showed teachers' confidence and perception are positively correlated. These results are likely to be related to Alzouebi (2014:1), the result showed a correlation between preservice teachers' beliefs and confidence. Emaliana & I., (2017) result revealed that the correlation between teachers' beliefs and ICT use is extremely positive.

Another research ran by Xiong, (2016:521) suggested four beliefs for the participants in regards of the Moodle use: the importance of Moodle, the use of Moodle, the expertise and context of using Moodle. Finally, the

researcher made sure that the use of Moodle is something that almost all users like and the result of the current research proved it.

Therefore, Moodle use and users' beliefs are widely correlated with their confidence. Boopathiraj, (2015:25) study finding showed that teachers' confidence is related to their attitudes. Moreover, Al-zaidiyeen & Mei, (2010:211) research finding showed that preservice teachers who use Moodle have a positive attitude and the correlation between their level of attitudes and ICT use capacity is significant. Therefore, preservice teachers have a good attitude when they use Moodle for teaching purposes.

C. Research Limitation

In the present study, there are some important limitations. The researcher thrilled to meet all the needed factors that would make the research go further. However, certain conditions have to be considered for the researches in the near future.

During the starting of this research, only some minor problems occurred. First, it was to know how to start conducting the research. The researcher faced some difficulties in determining the type of research that it would be. Finally, it became a quantitative research. Secondly, the sampling technique was little bit confusing since the researcher lives in Indonesia while the students are in Mali. As a result, the researcher delegated a student in the university of Mali to run the sampling technique. Concerning the instrument, the researcher improved it after the pilot survey.