

# Readiness of Skills, Knowledge, Attitude and Ease of Use of ICT among Preschool Teachers

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## Abstract

This study aims to see the difference in skill readiness. Knowledge, attitude, and ease of use of ICT among preschool teachers based on location. This study uses a quantitative approach that is using survey methods and questionnaire instruments are used to find answers to the research objectives and questions. In this study, one-way MANOVA statistical analysis was used to test dependent variables and independent variables. Having met the conditions to run the MANOVA statistical test. The findings show that there are significant differences in the availability of skills, knowledge, attitudes, and facilities between locations.

**Keywords:** Skills, Knowledge, Attitudes, Facilities, Preschool Teachers, ICT Preschool

## Introduction

According to a report issued by the Malaysian Ministry of Education (KPM) in 2022, the number of teacher applications for early retirement is higher than in previous years. Almost 5123 teachers and this value is equivalent to 1.23%. who apply for early retirement. This report is also supported by the National Union of Teachers (NUTP), but the report of the number of teachers applying for early retirement is almost 10,000 teachers applying for early retirement. From the report stated, teachers applying for early retirement among the main reasons are the changes that occur in the curriculum syllabus such as teaching that is familiar to teaching and new norms including the use of ICT in teaching and learning. The burden of work as an educator that emphasizes the online digitization system that cannot be mastered especially among old teachers is one of the factors that many educators apply for early retirement. The report also states that most teachers are not skilled in using Information and Communication Technology (ICT). Among the reasons why teachers are less motivated to use ICT, teachers are not motivated to use ICT because of the heavy workload and demand that they have the skills and knowledge to use ICT (Sandra et al., 2015); Kamaruzam, 2017; Norzaly & Jupri, 2021)

Apart from teachers lacking skills, knowledge, attitudes and facilities, teachers were also found to lack motivation to use ICT in teaching and learning, work pressure and changes in the curriculum syllabus among the main causes. This is contrary to the Malaysian Teacher Standard 2.0 (SGM) which outlines that KPM teachers must have a standard or standards that

have been set. Among the necessary standards is that teachers must have competence in skills. This is in line with the study conducted by (Mahira & Suziyani 2018) stating that teachers who do not have the skills to use ICT will not have high motivation to teach using ICT. The workload increases when teachers must teach students at the same time teachers have to learn how to use ICT and apply it during teaching and learning.

To get an answer to the problem, the objective of the study was to find and identify differences in the availability of skills, knowledge, attitudes and facilities between locations. While the research question is to find if there is a difference in the availability of skills, knowledge, attitudes, and facilities based on location. A hypothesis is formed to find:

Ho: There is no significant difference in the availability of skills, knowledge, attitudes, and facilities based on location.

### **Skills, Knowledge, Attitude and Ease of Use of Preschool Teachers' ICT**

Readiness means readiness, willingness, willingness to do something based on the definition in the fourth edition of Dewan Bahasa dan Pustaka. In the context of this study, readiness is focused on the skills, knowledge, attitudes, and facilities of preschool teachers using ICT in teaching and learning. John (2010), states that readiness is often seen in terms of knowledge, skills, attitudes, and facilities. Even so, there are several definitions of readiness that are used in the world of education about Teacher readiness that includes skills readiness, knowledge readiness, attitude readiness and facilities because a teacher has a large role to implement policies formed by KPM and teachers are also indicators way to students, especially preschoolers. As a preschool teacher who has the role of delivering lessons to preschool students so that the teaching objectives can be achieved, teachers need to have skills, deliver lessons using ICT, have knowledge in ICT before teaching. Preschool teachers also need to have a positive attitude towards any changes that occur in the world of education. There are several studies that have been conducted and found that the availability of skills, knowledge, attitudes, and facilities are closely related to the motivation to use ICT. Teachers who have the skills to use TMK will teach using the most basic TMK, while TMK itself offers various methods or ways that can attract interest in learning. Teachers who lack knowledge of using also lack motivation to teach.

Acceptance of preschool teachers in this study means an educator, a teacher receives a tool for the purpose of improving the teaching process. According to (Chen & Price, 2006; O'Connor, 2007; Marina, 2008; Rajesh & Mei, 2021). Teachers need to be prepared to accept the changes that occur in the education system. states that teachers' readiness which is influenced by attitudes, skills and usage practices is important to reduce the equality of computer access opportunities by preschool children caused by factors such as family income, race, and parents' education level. Rozita (2018), states the term readiness which is a form of process involving the integration of physical, mental, and emotional (psychological) aspects of a teacher in carrying out an action. A teacher who is ready to work can adapt well to the tasks entrusted to them. Therefore, the teacher needs to be always ready so that any action that will be taken later achieves its original purpose. Nurliaya (2015), states that readiness means existing, willingness and willingness. Readiness also refers to the individual's ability 15 in himself to start a teaching and learning activity, it can be divided into cognitive readiness, affective readiness, and psychomotor readiness. Curriculum changes in education can give the effect of the readiness of the teacher in carrying out the essential duties of the teacher in the school. teacher readiness will be measured based on three main domains, namely, teacher knowledge, skills, and teacher attitudes towards the new curriculum (Norazilawati et

al., 2014.; Tan & Lee, 2015). In this study, teachers' readiness (knowledge, skills, and attitudes) towards motivation was measured for teachers who teach preschool, that is, teachers who implemented the KSPK review in 2017.

In this study, preschool teachers' willingness to use ICT is seen in terms of the extent to which they understand and accept changes in teaching and learning according to the era of ICT development. Not only that, but the readiness in this study is also that preschool teachers are ready to do and use ICT in teaching and learning at the preschool level. As a preschool teacher, an educator must be prepared to use ICT and know all the skills, knowledge, attitudes, and ease of ICT use. This is important to produce preschool students who are IT literate. In fact, the acceptance of preschool teachers refers to the level of willingness to use ICT based on ICT skills, ICT knowledge, attitudes towards using ICT and the facilities available in schools that are mastered by preschool teachers in teaching and learning in the classroom.

Through a study conducted by Rosniada (2015), stated that the use of information technology at the preschool level is the use of modern and electronic technology such as computers, audio recordings, videos, and compact discs (CDs). Its use aims to store, organise, change, and create communication technology information using technology to spread and convey information through modern communication tools such as audio, internet, face-to-face video, hard disk, and software used during teaching and learning in the classroom.

In the context of this study, the use of ICT in this study involves the use of ICT devices consisting of televisions, radios, laptops, mobile phones, tablets, LCD, and screen screens. While the software consists of Power Point, Words, excel and also online interactive learning such as Google Classroom, the use of YouTube, kids Tube, Teacher Tube, Telegram, WhatsApp, Kahoot, Quizzes which can be used in various ways whether face-to-face video integrated in various components, the combination of interweaving with materials, according to the environment that suits the abilities, interests and learning styles of preschool students in the process of recognizing and recognizing the environmental conditions according to the children's abilities

### **Methodology**

According to Tabachinck & Fidell (2007), a population is a group that the researcher can take a random sample from. Cresswell (2008);Tuckman (1999), define the population as a group of individuals who have the same characteristics while the target population is a group of individuals who have the characteristics that the researcher wants. In this study, the study population is preschool teachers, which involves four states such as Johor, Terengganu, Selangor, and Penang, this is because the selection of the population in this study has the same characteristics as desired and is compatible with the study conducted.

Population is very important in research because population is a factor that determines the information and data that needs to be collected and analysed in a study. In addition, the population also affects the interpretation and inference from the collection of information and data obtained in a study and the interpretation that is made is only limited within the scope of the population being studied Majid (1993), according to him, the population will also give an impression of time, financial amount and energy allocated in a study. Researchers need to determine the right population in a study so that the study is effective and can contribute to the field of study. Apart from that, he also defined population as a set of

characteristics that show a certain observation or measurement on a group of individuals or objects. Objects in a population are said to have the same properties or characteristics that can be measured and there is at least one feature in common with each other in the studied population. In this study the selection of the population because it coincides with the study conducted.

Sampling is a process of selecting a group of individuals for a study to represent a larger group that has been set. According to Chua (2006), stated that sampling refers to the process of selecting several subjects from a large population to be used as respondents for a study. This view is in line with the opinion of Cohen, Manion & Morrison (2007), stating that sampling is a research strategy for researchers to obtain information about a population from some individuals who are members of that population. Sampling is the process of selecting study participants or respondents who will present a large group of those who have been selected (Gay & Airasian, 2003), sampling is a statistical method used in research without using the entire study population. In this study, the selection of study respondents did not involve all preschool teachers from the four states. The selection of respondents is based on the same characteristics as the research conducted.

The selection of sampling in this study is only taking part of the preschool teachers taken from the sampling method that can represent the population in this study. in line with (Majid 1993), stating that the sample is part of the population taken that represents the characteristics required in this study. In every study sampling is important for the process of generalizing the results of a study from a part or a group of individuals or objects to the whole group.

In the context of this study, the sampling of the study uses the sample size determination table according to the table of Krejcie & Morgan (1970), this is because it is compatible with the study that will be conducted due to the large sample selection. For the sample in the context of this study, the sampling will involve four states, representing each zone. The selection of these four states is based on the facilities provided and is compatible with the study to be conducted. Table 1 shows the number of preschool teachers and the states involved. The sample selection in this study is based on Krejcie & Morgan's (1970) sample selection table.

Table 1  
*Number of Preschool Teachers by Location*

Lokasi	Frekuensi
South Zone	91
North Zone	91
West Zone	91
East Zone	91
N =	364

An instrument is a very important tool to be used during research. The instruments used in the study are intended to obtain data to achieve the objectives and questions of the study. In this study, the use of instruments is to use a questionnaire to answer the objectives and questions in the study. The instrument used was adapted from according to the suitability of this study. In the implementation of this study, questionnaires were distributed to respondents to be used as a pilot before being used for the actual study to be conducted. This

is because it considers several aspects of readiness that can be achieved through a systematic data collection process.

In this study, respondents were required to answer a questionnaire using a five-point Likert scale. Starting from 1 = Strongly Disagree, 2 = Disagree, 3 = Moderate, 4 = Agree and 5 = Strongly Agree. The questionnaire used in this study to measure the variable of readiness to use ICT on the motivation of preschool teachers was adapted from A Review of the research literature on barriers to the uptake of ICT by Teacher developed by the British Educational Communications and Technology Agency (2004), A Survey on ICT Usage and the Perceptions of Social Studies Teachers in Turkey" developed by Yasemin & Ismail (2008) adapted by Rosnani & Mohd (2010); Namiha & Suziyani (2019), which contains Skills ICT, ICT knowledge, attitudes and ICT facilities, motivation to use ICT and the use of ICT at the preschool level.

The questionnaire in this study is divided into two main parts, which is part A explaining the demographics of the study sample being studied. It details the respondent's background, such as age, gender, teaching experience, academic qualifications, and study location. While in part B, there are six constructs which are skill readiness construct, knowledge readiness construct, attitude readiness construct, TMK facility readiness construct and motivation construct which includes intrinsic motivation and extrinsic motivation. Preschool teachers were given a Google Form and given a period of one month to answer the given questionnaire.

### **Findings**

The findings of the analysis aim to find answers to the research questions. For the quantitative approach, the use of some inferential statistics is used based on the research question. In the context of the study of the use of statistical inference, one-way MANOVA was used for the purpose of finding mean differences in the readiness of skills, knowledge, attitudes and ease of use of ICT for preschool teachers based on location. Ghazali & Sufean, 2018, Chua 2012 states that the use of one-way MANOVA statistics is used to find differences involving

In order to determine the differences in the willingness to use ICT among preschool teachers based on location, a one-way MANOVA statistical test analysis was performed, to see the dependent variable interacting with the independent variable.

Ho : There is no significant difference in the willingness to use ICT for preschool teachers based on location.

Levene's test was conducted to test the hypothesis that the error of the dependent variances for each independent group is the same. The results of Levene's test, show that the variance in the dependent variable across each category in the independent variable is the same. The study data complies with the condition of equality of variance for the MANOVA test. This indicates that the dependent variable has the same variance (Pallant, 2011).

Through table 2 the results show a significant result ( $P > 0.01$ ). This shows that the data does not deviate from the condition of equality of covariance, that is, the variance of the study sample for the dependent variable across the two independent variables is the same. The data of this study meets the requirements of the MANOVA test.

Table 2

*Box's M Test Differences in Willingness to Use TMK based on Location*

Box's M	F	.df1	.df2	sig
328.452	10.730	30	356322.673	.004

Table 3 is an analysis of the information found in the Descriptive statistics table, it shows the mean value, standard deviation and the fourth variable - four dependent variables across two location categories. The findings show that the skill readiness of preschool teachers from the central zone is higher compared to other zones with a mean score = 4.69, standard deviation = 0.49, the eastern zone has a mean score = 4.64 standard deviation = 0.51, the mean score of the southern zone = 4.59, standard deviation = 0.39 while the lowest mean score is from the northern zone with mean value = 4.55 with standard deviation = 0.48. It was found that the overall mean score of readiness to use ICT skills based on the zone was high.

As for the knowledge readiness of preschool teachers, the mean score shows that preschool teachers from the central zone have the highest mean score, with a mean value of 4.71, standard deviation of 0.46, the eastern zone with a mean score of 4.69, standard deviation = 0.51, the southern zone with a mean score of 4.60, standard deviation = 0.33 and the mean score which is among the lowest from the northern zone with mean = 4.57, standard deviation = 0.45. Overall, the mean score for preschool teachers' readiness to use ICT based on location is high

The attitude readiness of preschool teachers with the highest mean score is from the central zone with mean value = 4.70, standard deviation = 0.44, the mean score from the eastern zone with mean = 4.66, standard deviation = 0.45, while the mean score of the northern zone with mean = 4.60, standard deviation = 0.54, the lowest mean score compared to the mean score of other locations is the mean score of the southern zone with mean value = 4.48, standard deviation = 0.43. Overall, the mean score for preschool teachers' willingness to use ICT is high.

The mean score for the ease of use of ICT among preschool teachers is the middle mean score with a mean value of 4.71, standard deviation = 0.43, the mean score of the east with a mean value of 4.66, standard deviation = 0.54, while the mean score of the northern zone is mean = 4.56, standard deviation = 0.48, the lowest mean score is the southern zone with mean score = 4.46, standard deviation = 0.46. Overall, the mean score of the readiness to use ICT facilities for preschool teachers based on location is high

Table 3

*Mean and Standard Deviation of Readiness to Use TMK based on Location.*

Readiness to Use ICT	Location	Mean	SP
Skill	South	4.59	0.39
	North	4.55	0.48
		4.69	0.49
	Timur	4.64	0.51
Knowledge	Selatan	4.60	0.33

	Utara	4.57	0.45
	Tengah	4.71	0.46
	Timur	4.69	0.51
Attitude	Selatan	4.48	0.43
	Utara	4.60	0.54
	Tengah	4.70	0.44
	Timur	4.66	0.45
Facilities	Selatan	4.46	0.46
	Utara	4.56	0.48
	Tengah	4.71	0.43
	Timur	4.66	0.54

Table 4 shows the results of Wilk's  $\lambda$  test, the analysis found that overall there is no main effect on the independent variable of location (  $F(12, 944) = 2.583, p > 0.05$  ). on the willingness to use TMK. This shows that the difference in location does not affect the willingness use of ICT by preschool teachers.

Table 4

*Wilk's Lambda Value Differences in Readiness Skills, knowledge, attitudes and facilities based on Location*

Attribute	Wilk's Lambda Value	F Value	DK between group	DK in group	Sig	Eta
Location	0.918	2.583	12	944	.02	0.028

Table 5 shows a one-way MANOVA analysis to see the difference in the readiness of preschool teachers to use ICT based on location. Detailed findings show the willingness to use ICT based on location. There is a significant difference in terms of knowledge readiness ( $F = 2.197$  and  $\text{sig} = .33, p > .05$ ), attitude readiness ( $F = 3.773, \text{sig} = 0.01, p < 0.05$ ), facility readiness ( $F = 4.66$  and  $\text{sig} = 0.03, p < 0.05$ ) and skill readiness ( $F = 1.443$  and  $\text{sig} = 0.23, p < 0.05$ ) based on location. The eta value for knowledge readiness .018, attitude readiness .030, facility readiness .003 and skill readiness .023 which means that the effect the difference shown is small (Cohen, 1988).

Table 5

*Readiness One-way MANOVA analysis use to ICT based on Location*

Attribute	Readiness	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Location	Skill	977	3	.326	1.443	.230	.012
	Knowledge	1.292	3	.431	2.197	.088	.018
	Skill	2.449	3	.816	3.773	.011	.030
	Facilities	3.265	3	1.088	4.661	.003	.037

Through Figure 1 it shows that the readiness of ICT skills of preschool teachers based on, scores from the central zone are higher compared to the southern zone, the northern zone and the eastern zone.

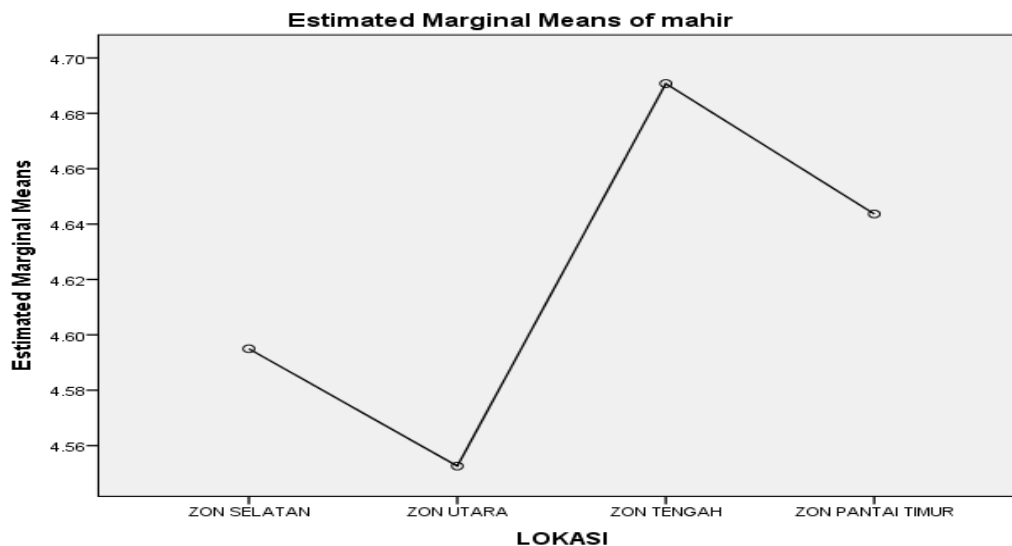


Figure 1 The Interaction Effect of Readiness to Use TMK Skills based on Location.

Figure 2 shows the mean score of the readiness of preschool teachers' ICT use knowledge based on location. The diagram shows that the central zone (southern zone) has a higher knowledge readiness score compared to the eastern zone, and the southern zone and the northern zone.

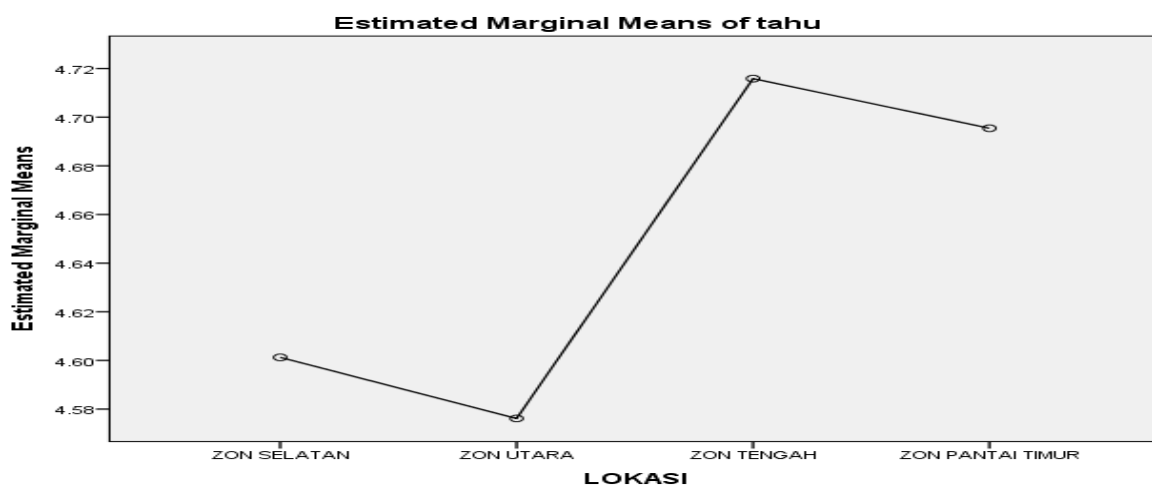


Figure 2 Interaction Effect of ICT Use Skill Readiness based on Location

Figure 3 shows the mean scores of preschool teachers' readiness for ICT use based on location. The diagram shows that the central zone has more knowledge readiness scores compared to the eastern zone, and the southern zone and the northern zone.



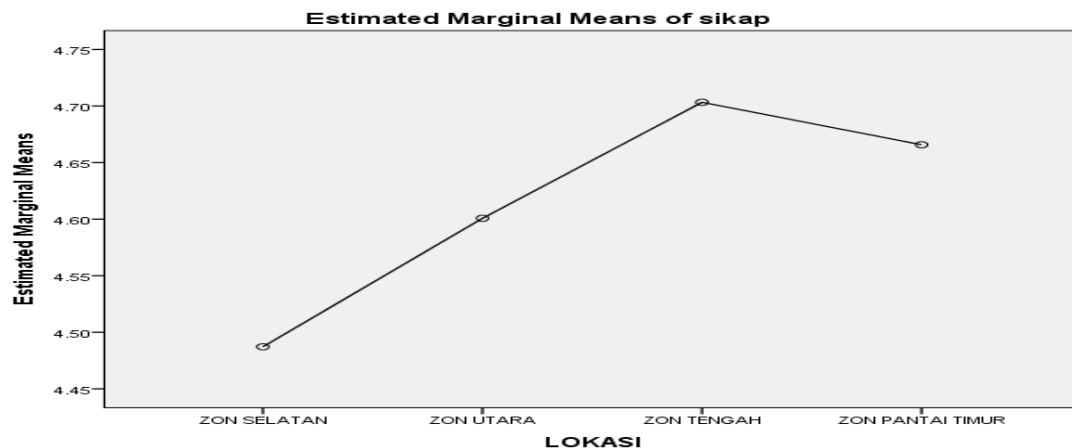


Figure 3 Interaction Effect of Readiness Attitude to Use ICT based on Location

Figure 4 shows the mean scores of preschool teachers' readiness to use ICT based on location. The diagram shows that the central zone has more knowledge readiness scores compared to the eastern zone, and the southern zone and the northern zone.

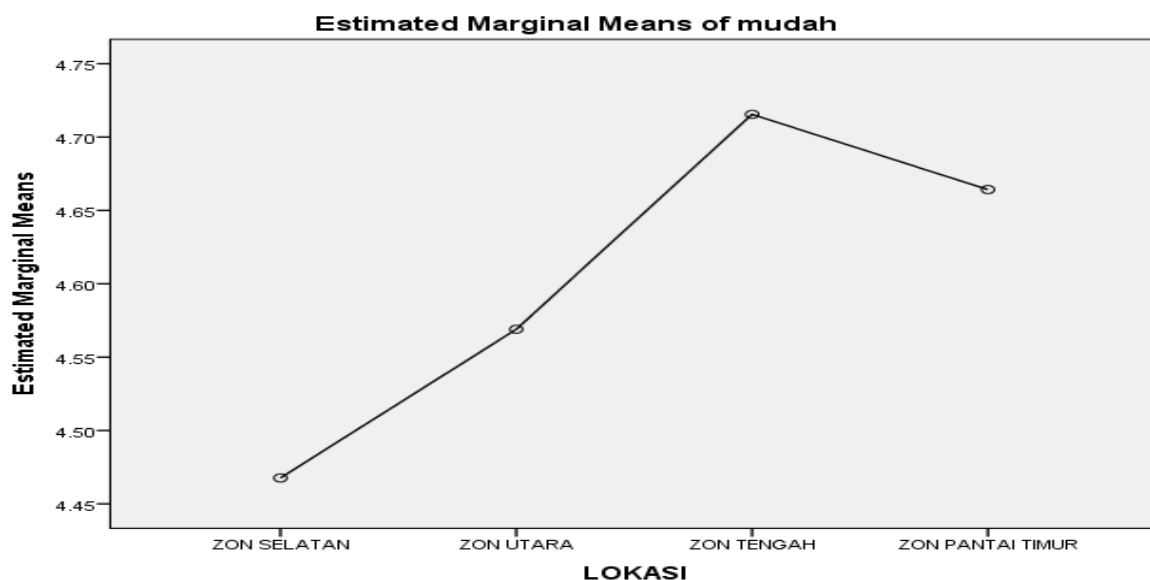


Figure 4 Interaction Effect of Availability of ICT Use Facilities based on Location

### Conclusion Implications and Recommendations

Conclusions from the research conducted, the availability of skills, knowledge, attitudes and facilities have differences between locations. Overall, the mean readiness of skills, knowledge, attitudes and facilities is high. This finding shows that preschool teachers during endemic times have improved their skills, knowledge, attitude and ease of use of ICT. This is because the teacher as a driving force needs to deliver the lesson no matter what.

This study has an impact on all those involved such as KPM, PPD, schools, school administrators and researchers. It is suggested that in the future the research conducted needs to expand the sampling value

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