

# Interactional Model of Digital Managerial Competence of Kindergarten Teachers in North Sulawesi

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## Interactional Model of Digital Managerial Competence of Kindergarten Teachers in North Sulawesi

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### ABSTRACT

This study aims to analyze and explain the interactional model of digital managerial competence of kindergarten teachers in North Sulawesi Province. This research was conducted using a survey method, a sample of 96 kindergarten teachers in North Sulawesi Province, questionnaire data collection techniques, and correlation data analysis techniques. The results of the study show that there is a positive and significant independent and simultaneous relationship between digital leadership, teleworking, internet skills, teacher-parent digital communication, and motivation with digital managerial competencies of kindergarten teachers. In addition, the results of the research are discussed and conclusions and suggestions are presented.

**Keywords:** digital communication, digital leadership, digital managerial competence, internet skills, motivation, teleworking

### INTRODUCTION

Entering the industrial revolution 4.0, known as the millennial era, demands that the education system improve itself from all aspects, starting from management, methods and learning strategies, and the media used in the learning process (Suwardana, 2017). The industrial revolution 4.0 requires the learning process which is part of the curriculum (Rahim, 2017) to switch from conventional learning to learning that utilizes information technology. The development of the virtual world provides major changes in the world of education. Bennett Berry argues that the current phenomenon is caused by advances in digital technology. Digital technology has been

proven to make information transfer more efficient (Hosnan, 2014). Digital technology is increasingly commonly used (Hasanah, 2015). Advances in digital and information technology can be used to facilitate educational development (Divayana, 2016; Sugihami, 2018). Therefore, rapid innovation is needed in the world of education and is a top priority in the development of the education system, especially in making learning media. Now, to face the industrial revolution 4.0, known as the Industrial Revolution 4.0. is an era of disruptive innovation, where creativity can develop without being matched by the capabilities of the human resources themselves, so they are unable to help create new markets. This innovation is also capable of changing or destroying all aspects and more powerfully being able to replace existing technology. At this time, we are shocked by the situation where participant students respond more quickly than teachers. In the end output or school output can give birth to quality human beings commensurate with industry 4.0. Education 4.0 brings teachers to adapt, and want to learn so that quality can improve, and be able to keep up with participants and educate the millennials. because that teachers must continue to learn to improve their competence so that they can face millennial generation students. The author mentions teachers who have these qualities are teachers 4.0. The teacher as a leader figure transformational stimulates intellectually (Budiwibowo, 2014) in carrying out tasks according to technological skills. and take advantage of digital technology.

Teachers are required to be able to utilize technology in learning. The Regulation of the Minister of National Education Number 16 of 2007 concerning Academic Qualification Standards and Teacher Competency, is explained that teachers must utilize information and communication technology for the benefit of learning. In the Government Regulation of the Republic of Indonesia Number 74 of 2008 concerning Teachers, article three, paragraph four states that the pedagogic competencies that must be mastered by teachers in managing student learning, one of which is the use of learning technology. There are ministerial regulations regarding the competencies that teachers must have, so the use of information and communication technology should be applied to the learning process to achieve learning goals. Another thing is if the conditions are not possible for the participant's students to use technology, teachers can divert to the use of alternative learning media. The government has made efforts to improve the quality of teachers in the field of technology by perfecting the 2013 Curriculum. The curriculum currently being used requires participants to educate and teachers jointly develop competencies especially to respond to global challenges. However, this effort has not been maximized because teachers have not maximized the use of technology in the learning process. One of the educational unit levels that have become the focus of the research is the kindergarten (TK) education unit level in North Sulawesi Province. Why then is the kindergarten education unit level interesting to be used as a research subject, according to Suryantti & Wijayanti, (2018)? Today's students, especially those at the level of early childhood education, are the Digital Native generation or can be called the digital generation. This is because they are familiar with Information and Communication technology since birth. Educators must respond to this and be able to identify the needs of students and users of educational services who are currently attached to the digital world.

We need to realize that the Alpha generation or digital generation is a generation that is under 10 years old, which means that kindergarten-aged children are the intended generation and will face more varied and complex challenges in the digital world in the future so that teachers at the education unit level Kindergartens are forced to improve their competence in terms of utilizing information and communication technology (ICT) in learning activities. Whether they realize it or not, Alpha generation children have been born together with the rapid development of information and communication technology, digital instruments have directly come into contact with them in

their daily activities so that sometimes they are quicker to respond than teachers. From the perspective of educational management, one component that plays a role and contributes urgently for resolve problems on the front lines related in a manner specific to crisis learning in a manner public and crisis digital learning in a way special is the teacher component. Placing teachers central in resolving problems related live with service digital learning in kindergarten, naturally, consider one attribute main possession child age early in the digital age is digital competency for study in the environment of digital learning. Based on consideration, should be a teacher in today's digital era should own a competent deep digital managerial role as a manager of digital learning or manage and lead online or digital classes (Keshavarz & Ghoneim-Rosenauer, 2021). Studies on the competence digital managerial skills needed by teachers as a worker in context organization education are one element in formulating teacher's digital competency general and special competence digital managerial of kindergarten teachers.

The kindergarten teacher in the 21st century is expected own competence-related knowledge in the use of various device technology to facilitate the process of learning and improvement results learning. The shift from pedagogical content knowledge (PCK) to technological pedagogical content knowledge (TPACK) developed by Mishra & Koehler in 2006 (Rahmad, 2019) is something needed. TPACK's perspective is more emphasizes the type of new knowledge that must be mastered by kindergarten teachers to integrate technology with good learning in boundaries competence teach kindergarten teacher as a teacher. Although the TPACK perspective is important in the context of discourse development of kindergarten teachers in post and pre-job titles. However, the need for knowledge of managerial or competent digital managerial not lost importance for kindergarten teachers to carry out their role as managers in an environment of digital learning. In essence, the development of digital managerial competencies of kindergarten teachers does not appear so course but appears as a result of interaction with several factor determinants that influence it. The nature of influence could be analyzed from various corner points of view used by the researchers. Study this using Person-Environment Interaction (PEI) Model rooted in psychology interactional (Kristof-Brown, 2020). Based on the PEI model constructed conceptual Interactional Model Competence Digital Managerial (MIKMD) kindergarten teachers in North Sulawesi Province. Referring to this MIKMD kindergarten teacher digital leadership, teleworking, internet skills, digital communication between teachers and parents, and teacher motivation interacting factors with competence digital managerial. In addition, the importance of research conducted because contribute for zoom out the gap in existing knowledge and development of competency models digital managerial that can be applied by the teacher as a manager in digital learning and can contribute to the formulation of policy standard competence digital managerial of kindergarten teachers and made base drafting assessment about competence digital managerial kindergarten teacher which is part from demands of development in the digital age.

Understanding that the development of digital managerial competence of kindergarten teachers does not just appear, but emerges as a result of interactions with several correlated factors. The nature of the correlation can be analyzed from various perspectives used by researchers. This research uses Person-Environment interactions (PEI) Models rooted in interactional psychology (Kristof-Brown, 2020). Based on the PEI model is constructed as a conceptual Interactional Model Competence Digital Managerial (MIKMD) kindergarten teacher. In these models factor digital leadership Kindergarten head, teleworking or u remote work, internet skills, as variable independent correlated with factor competence digital managerial kindergarten teacher as a variable dependent. as trait variable interactional Among variable independent and variable

dependent developed in shape correlational, either in a manner individually (partial) or in a manner together (simultaneously).

1 Formulation of the problem in research is there a connection between digital leadership with digital managerial competencies of kindergarten teachers in North Sulawesi Province? Is there a relationship between teleworking with the digital managerial competencies of kindergarten teachers in North Sulawesi Province? Is there a relationship between internet skills and digital managerial competencies of kindergarten teachers in North Sulawesi Province? Is there a relationship in a manner simultaneous between digital leadership, teleworking, internet skills, digital communication, and motivation with the digital managerial competencies of kindergarten teachers in North Sulawesi Province?

The research aims to describe and explain things as follows: Relationship between digital leadership and digital managerial competencies of kindergarten teachers in North Sulawesi Province. Connection Among teleworking with the digital managerial competencies of kindergarten teachers in North Sulawesi Province. The connection between internet skills and digital managerial competencies of kindergarten teachers in North Sulawesi Province. The Connection in a manner simultaneous between digital leadership, teleworking, internet skills, and digital communication with digital managerial competencies of kindergarten teachers in North Sulawesi Province.

## METHOD

### Types of research

This research is classified into type approach, method, and design study (Gay, Mills & Airasian, 2012; Sugiyono, 2013; Creswell, 2014). The type of approach research used is quantitative ie something study conducted with the use of perspective deductive and for test theory connection Among variable independent and dependent. The type method of research used is a survey ie something method to get quantitative data that exist in the field with the use of instrument-related research variable independent and dependent. Whereas the type of design research used is correlational i.e., correlate Among variables independent and dependent. as designed the variable independent covers the digital leadership head of kindergarten (X1), *teleworking* or remote work (X2), internet skills (X3), correlated with variable dependent ie competence digital managerial of kindergarten teachers (Y).

### Place and time of research

The place implementation study is, in units of kindergarten education in North Sulawesi Province. Research time During eight-month ie from month March until November 2022.

### Population and Research Sample

The population in the research is kindergarten teachers spread across North Sulawesi Province. The total number of members population study totaled 2247 teachers. Study this using the technique *probability sampling* type *cluster sampling (sampling area)*. After in a manner methodological explained technique taking the sample used, the researcher next determines the size or total sample with the used formula from Taro Yamane (Riduwan, 2008) as follows:

$$n = \frac{N}{N.d^2+1} \quad (1)$$

Description:

n = Amount sample

N = Amount population

d<sup>2</sup> = Precision set 0.01 (1%)

Based on the formula they could count sample area and sample individuals as follows.

Determination total sample of people/ individuals  $n = \frac{N}{N \cdot d^2 + 1} = \frac{2217}{2217 \cdot 0.01^2 + 1} = 95.68 = 96$  people or individual kindergarten teachers as respondents. Based on the calculation of the results the total sample person or individual kindergarten teachers as a respondent from 13 regions (Cities/Districts) on an ongoing basis proportional in a study this served.

### Data Collection Techniques

Based on the Likert scale, the answers to each questionnaire item have a gradation from very positive to very negative and vice versa from very negative to very positive, which is given a score for quantitative analysis purposes. For positive statements: strongly agree (5), agree (4), disagree (3), disagree (2), and strongly disagree (1), while negative statements: strongly disagree (5), disagree (4), disagree (3) agree (2), and strongly agree (1). include (1) a questionnaire on digital leadership of kindergarten teachers, (2) *teleworking*, and internet skills, (3) digital communication of teachers and parents, (4) teacher motivation, and (5) competency digital managerial of kindergarten teachers. Questionnaires this designed with the use Likert scale.

The starting point for the compilation of the five instruments is the research variables which have been given conceptual and operational definitions with the indicators being measured. The conceptual and operational definitions of the research variables are presented as follows.

### Conceptual and Operational Definitions of Research Variables

#### a. Variable Conceptual Definitions

In this research, the definition of conceptual meaning is a theory used as a reference to the variables studied. Variables defined research in a manner conceptual as follows.

##### 1) Competence variable Digital Managerial

competence digital managerial refers to the theory of ability management digital class developed by Keshavarz, Mirmoghtadaie & Nayyeri (2022) which includes time management, eye management learning, conflict management, interaction management, and supportive behavior, and management of meta-cognitive skills.

##### 2) Digital Leadership Variables

Digital leadership refers to theory dimensions of humanity from developed digital leadership Abbu, et al (2022) measured through fifteen/dimensions of humanity from digital leadership i.e., honesty, humility, courage, intelligence artificial ethics, pattern think growth, transparent, data-focused, inspire engagement, storytelling, digital literacy, attitude positive, acquisition skills, share knowledge, participation, and colleague's good trail.

##### 3) *Teleworking* variable

*Teleworking* teachers refer to the theory of *remote working* developed by Ingusci, et al (2022) which was measured through two dimensions i.e., expediency work distance far and short work distance far.

##### 4) Variable Internet Skills

Internet skills refer to the theory of internet skills developed by Van Deursen, et al (2016) and measured through five dimensions ie Skills operational skills to navigate information, skills social skills creative, and skills cellular or mobile.

b. Variable Operational Definitions

In this research, definition the intended operation is perception respondent study about the variables studied in the dissertation indicator for measure variable research. Variables defined research in a manner operational as follows.

1) Competency Variables Digital Managerial

Competence deep digital managerial study is perceptions of kindergarten teachers about ability management digital class with indicators:

- a) m time management,
- b) eye management lesson,
- c) conflict management,
- d) Interaction management and supportive behavior, and
- e) management of meta-cognitive skills.

2) Digital Leadership Variables

Kindergarten head digital leadership in a study is perceptions of kindergarten teachers about dimensions humanity from digital leadership with indicator:

- a) honesty,
- b) humility,
- c) courage,
- d) intelligence artificial ethics,
- e) pattern think growth,
- f) transparent,
- g) data focus,
- h) inspire engagement,
- i) telling stories,
- j) digital literacy,
- k) attitude positive,
- l) acquisition skill,
- m) share knowledge,
- n) participatory, and
- o) colleague good trail.

3) *Teleworking* variable

A deep *teleworking* study is perceptions of kindergarten teachers about dimensions of work distance far with indicators:

- a) expediency work distance away, and
- b) lack of work distance far.

4) Variable Internet Skills

Deep internet skills study is perceptions of kindergarten teachers about dimensions internet skills with indicator:

- a) Skills operational,
- b) Skills navigate information,
- c) Skills social,
- d) Skills creative, and
- e) Skills in cellular/mobile,

### Research Hypothesis

Based on the study library, research former, and framework think study get it arranged as a hypothesis study as follows.

1. There is a connection positive and significant Among digital leadership with digital managerial competencies of kindergarten teachers in North Sulawesi Province.
2. There is a connection positive and significant Among *teleworking* with the digital managerial competencies of kindergarten teachers in North Sulawesi Province.
3. There is connection positive and significant between internet skills and digital managerial competencies of kindergarten teachers in North Sulawesi Province.
4. There is a connection positive and significant in a manner simultaneous between digital leadership, *teleworking*, internet skills, digital communication, and motivation with the digital managerial competencies of kindergarten teachers in North Sulawesi Province.

### Instrument Testing

Before the lifting instrument was piloted to 30 kindergarten teachers who did not include in respondent research, the first translated adapted questionnaire was in English to Indonesian. After that examined/assessed by three experts who have knowledge related to variables in research. Evaluation of the examination of the 3 experts gave the decision that: the instrument can be used without repair, there is repair, and maybe completely overhauled. Based on evaluation or inspection, a researcher does repair to grain recommended statement for repair.

#### a. Validity test

Testing validity instrument carried out by factor analysis, namely correlating the score of each item with the total score which is the sum of each instrument item score. The type of analysis used is *Pearson Product correlation moments* (Sugiyono, 2013). According to Masrun (Sugiyono, 2013), the minimum requirement for items instrument declared valid is  $r = 0.3$ . That is, if the correlation between items with a total score equal to or more than 0.3, then the instrument item is declared valid. Conversely, if it is less than 0.3, then the instrument items are declared invalid or immediately aborted.

#### 1) Competence Digital Managerial

Based on the results of the competency variable questionnaire test digital managerial (Y) indicates that the 39 items analyzed are greater than  $r = 0.3$  or all of them are declared valid so that the 39 items can be used for research data collection.

#### 2) Digital Leadership

digital leadership variable questionnaire testing for kindergarten heads (X1) shows that the 45 items analyzed are greater than  $r = 0.3$  or all of them are declared valid, so that the 45 items can be used for research data collection.

#### 3) *Teleworking*

*teleworking* variable questionnaire test (X2) shows that the 14 items analyzed are greater than  $r = 0.3$  or all of them are declared valid so that the 14 items can be used for research data collection.

#### 4) Internet Skills

Based on the results of the internet skills variable questionnaire test (X3) it shows that the 36 items analyzed are greater than  $r = 0.3$  or all of them are declared valid, so that the 36 items can be used for research data collection.



The results of the validity test of the six research variables can be summarized in table 1.

**Table 1.** Summary Results Validity analysis Instrument Questionnaire

No	Questionnaire Study	Amount grain	Amount Valid Items	Amount Invalid Items	Number Invalid Items
1.	Competence Digital Managerial (Y)	39	39	-	-
2.	Digital Leadership (X1)	45	45	-	-
3.	Teleworking (X2)	14	14	-	-
4.	Internet Skills (X3)	36	36	-	-

b. Test Reliability

Reliability testing is done by using the *Alpha-Cronbach* technique. The criteria for a reliable instrument are  $\geq 0.5$  (Waworuntu, 2013:25). Testing the reliability of this instrument was processed using the *SPSS for Windows application*.

5) Competence Digital Managerial

Based on the results of the reliability test showed that the competency variable questionnaire digital managerial (Y) is 0.967 which means reliable.

6) Digital Leadership

Based on the results of the reliability test, shows that the digital leadership variable questionnaire for kindergarten heads (X1) is 0.975, which means reliable/reliable.

7) Teleworking

Based on the results of the reliability test, shows that the teleworking variable questionnaire (X2) is 0.924, which means reliable/reliable.

8) Internet Skills

Based on the results of the reliability test, shows that the internet skills variable questionnaire (X3) is 0.960, which means reliable/reliable. The results of testing the three research variable questionnaires are summarized in table 2.

**Table 2.** Summary Results Analysis Reliability Questionnaire

No	Questionnaire Study	Coefficient Reliability	Information
1.	Competence Digital Managerial	0.968	Reliable
2.	Digital Leadership (X1)	0.975	Reliable
3.	Teleworking (X2)	0.924	Reliable
4.	Internet Skills (X3)	0.960	Reliable

**Data analysis technique**

Data analysis techniques used by researchers in a study this is a descriptive and inferential statistical technique. Use statistics descriptive including average, deviation standard, and variance. The use of statistics inferential is related to analysis correlation and testing hypothesis research. Then to process research data researchers use the device soft *SPSS for windows*. However thus, before doing things that especially formerly normality and linearity tests were carried out as condition correlation model testing. Rule testing analyzed hypothesis with correlation simple is as follows.

First, if the scoring probability is 0.05 more small or the same with score probability Sig (significant) or  $(0.05 \leq \text{Sig})$ , then  $H_0$  accepted and  $H_a$  rejected, that is not significant. Second, if a probability of 0.05 is bigger or the same as the scoring probability Sig (significant) or  $(0.05 \geq \text{Sig})$ , then  $H_0$  is rejected and  $H_a$  accepted, which is significant (Sugiyono, 2013:288).

4 Rule testing analyzed hypothesis with correlation double is as follows. First, if a probability of 0.05 is smaller or the same as the scoring probability of Sig F Change or  $(0.05 \leq \text{Sig F Change})$ , then  $H_0$  accepted and  $H_a$  rejected, that is not significant. Second, if a score probability of 0.05 is bigger or the same as with the scoring probability Sig F Change or  $(0.05 \geq \text{Sig F Change})$ , then  $H_0$  is rejected and  $H_a$  accepted, which is significant (Sugiyono, 2013:291).

Tested hypotheses in a study this described as follows.

### 1. Testing kindly Simple (Alone)

- a. Connection Kindergarten head digital leadership (X1) with competence Kindergarten teacher managerial (Y), hypothesis in shape sentence:

Ho: Kindergarten head digital leadership is not related positively and significantly with the competence of digital managerial of kindergarten teachers.

Ha: Kindergarten head digital leadership relates positively and significantly with the competence of digital managerial of kindergarten teachers.

Hypothesis in shape statistics:

Ho:  $r_{yx1} = 0$

Ha:  $r_{yx1} \neq 0$

- b. Connection *teleworking* (X2) with competent Kindergarten teacher managerial (Y)

Hypothesis in shape sentence:

Ho: *Teleworking* is not related positively and significantly with the competence of digital managerial of kindergarten teachers.

Ha: *Teleworking* is related positively and significantly to the competence of digital managerial of kindergarten teachers.

Hypothesis in shape statistics:

Ho:  $r_{yx2} = 0$

Ha:  $r_{yx2} \neq 0$

- c. Connection internet skills (X3) with competent Kindergarten teacher managerial (Y)

Hypothesis in shape sentence:

Ho: Internet skills are not related positively and significantly with the competence of digital managerial of kindergarten teachers.

Ha: Internet-related skills positive and significant with competence in digital managerial of kindergarten teachers.

Hypothesis in shape statistics:

Ho:  $r_{yx3} = 0$

Ha:  $r_{yx3} \neq 0$

### 2. Testing kindly Simultaneous (together)

Connection digital leadership of kindergarten heads (X1), *teleworking* (X2), skills (X3), with competent Kindergarten teacher managerial (Y). hypothesis in shape sentence:

Ho: Kindergarten head digital leadership, *teleworking*, internet skills, no related positive and significant with competence digital managerial of kindergarten teachers.

Ha: Kindergarten head digital leadership, *teleworking*, internet skills, related positive and significant with competence digital managerial of kindergarten teachers.

hypothesis in shape statistics:

$$H_0: r_{y_1x_1x_2x_3x_4x_5} = 0$$

$$H_a: r_{y_1x_1x_2x_3x_4x_5} \neq 0$$

## RESULTS AND DISCUSSION

### Descriptive Data Analysis Results

In this section, data from the results of descriptive data analysis on digital leadership, *teleworking*, internet skills, and competencies are presented as digital managerial. The results of the data analysis referred to are described in table 3.

**Table 3.** Analysis Results in Descriptive Data

Variable	Average	Standard Deviation	Minimum	Maximum	Sample (n)
leadership digital	173.35	18,667	69	212	96
<i>Teleworking</i>	49.76	9.154	22	65	96
Internet skills	142.45	15,089	52	174	96
Competence digital managerial	130.43	30,621	67	177	96

a. Digital Leadership (X1)

Based on table 3, the digital competency variable score of the kindergarten head has an average value of 173.35; a standard deviation of 18,667; a minimum score of 69, and a maximum score of 212.

b. *Teleworking* (X2)

Based on table 3, the *teleworking variable scores* kindergarten teachers have an average score of 49.76; a standard deviation of 9,154; a minimum score of 22, and a maximum score of 65.

c. Internet Skills (X3)

Based on table 3, the internet skills variable scores Kindergarten teachers have an average score of 142.45; the standard deviation of 15.089; the minimum score of 52, and a maximum score of 174.

d. Competence Digital Managerial (Y)

Based on table 3, the competency variable scores of digital managerial kindergarten teachers have an average score of 130,43; a standard deviation of 30,621; a minimum score of 67, and a maximum score of 177.

### Analysis Results Testing hypothesis

Before putting forward results analysis correlation and testing hypothesis, more formerly put forward results analysis requirements which include data normality test and linearity test.

a. Analysis Results condition

1) Data Normality Test

normality of data variables in a study could be explained as follows.

- Variable digital leadership has *Asymp. Sig.* (0.089) >  $\alpha$  (0.05). That is, variable data digital leadership of kindergarten principals is normally distributed.
- Teleworking* variable has *Asymp. Sig.* (0.089) >  $\alpha$  (0.05). That is, variable data *teleworking* normal distribution of kindergarten teachers.

- c) Variable Internet skills have *Asymp. Sig.* (0.089) >  $\alpha$  (0.05). That is variable data internet skills normal distribution of kindergarten teachers.
- d) Variable competence Digital managerial has *Asymp. Sig.* (0.089) >  $\alpha$  (0.05). That is variable data competence Digital managerial normal distribution of kindergarten teachers.
- 2) Linearity Test  
Testing linearity conducted with the method compares score significance with 0.05. The rule that is if score probability  $\alpha = 0.05$  more big or the same with score probability Sig. or  $0.05 \geq \text{Sig}$ , then could state a linear pattern (Riduwan and Sunarto, 2010). Linearity test results are served in table 4.

Table 4. Linearity Test Results

Connection between Variable	Probability Sig.	$\alpha$
X1 with Y	0.000	0.05
X2 with Y	0.000	0.05
X3 with Y	0.000	0.05

Based on the data in table 4.4, the results of the linearity test could be explained as follows.

- a) Kindergarten head digital leadership (X1) with competence Kindergarten teacher managerial (Y) ie score probability  $\alpha = 0.05$  more big score probability sig. = 0.000 or  $0.05 > 0.001$ . That is, the data is linear, so that fulfills condition or correlation model assumptions.
- b) Connection *teleworking* TK (X2) with competence Kindergarten teacher managerial (Y) ie score probability  $\alpha = 0.05$  more big score probability sig. = 0.000 or  $0.05 > 0.001$ . That is, the data is linear, so that fulfills condition or correlation model assumptions.
- c) Connection kindergarten teacher internet skills (X3) with competence Kindergarten teacher managerial (Y) ie score probability  $\alpha = 0.05$  more big score probability sig. = 0.000 or  $0.05 > 0.001$ . That is, the data is linear, so that fulfills condition or correlation model assumptions.

Test results hypothesis

Testing hypothesis in a study conducted with analysis correlation simple and correlation double. Rule decision testing hypothesis with analysis correlation simple is as follows.

- 1) If the probability is 0.05 more small or the same with score probability Sig (significant) or  $(0.05 \leq \text{Sig})$ , then  $H_0$  is accepted and  $H_a$  rejected, which is not significant.
- 2) If the probability is 0.05 bigger or the same as the scoring probability Sig (significant) or  $(0.05 \geq \text{Sig})$ , then  $H_0$  is rejected and  $H_a$  accepted, which is significant (Riduwan and Sunarto, 2010).

Then to interpret the score coefficient correlation served in table 5.

Table 5. value coefficient correlation

In interval Coefficient	Relationship Level
0.00 – 0.199	Very low
0.20 – 0.399	Low
0.40 – 0.599	Currently

Source: Sugiyono, 2013

Test results hypothesis with analysis correlation simple described in table 6.

**Table 6.** Analysis Results in Simple Correlation

Connection between Variable	Coefficient Value Correlation	Sig Probability Value.	Hypothesis Test Results
X1 with Y	0.644	0.000	Ho rejected & Ha accepted
X2 with Y	0.825	0.000	Ho rejected & Ha accepted
X3 with Y	0.359	0.000	Ho rejected & Ha accepted

Based on table 4.5, then following this explained results testing hypothesis based on analysis correlation simple.

- a) Connection Kindergarten head digital leadership (X1) with competent digital managerial kindergarten teacher (Y) can be explained as follows.
  - a) Obtained value connection Kindergarten head digital leadership with competence in digital managerial of kindergarten teachers by 0.644. That means, there is a strong relationship Among Kindergarten head digital leadership with competent digital managers of kindergarten teachers.
  - b) Hypothesis test results show that a score probability of 0.05 more big score probability sig. 0.000 or  $0.05 > 0.000$ . That is,  $H_0$  was rejected and  $H_a$  accepted. This could be stated that there is a positive and significant relationship Among Kindergarten heads' digital leadership and with competent digital managerial of kindergarten teachers.
- b) Connection kindergarten teacher *teleworking* (X2) with competent digital managerial kindergarten teacher (Y) can explain as follows.
  - a) Obtained value connection Kindergarten teacher *teleworking* with competence digital managerial of kindergarten teachers by 0.823. That means, there is a very strong relationship Among Kindergarten teachers *teleworking* with competent digital managerial of kindergarten teachers.
  - b) Hypothesis test results show that a score probability of 0.05 more big score probability sig. 0.000 or  $0.05 > 0.000$ . That is,  $H_0$  was rejected and  $H_a$  accepted. This could be stated that there is a positive and significant relationship Among Kindergarten teachers *teleworking* with competent digital managerial of kindergarten teachers.
- c) The connection of kindergarten teacher internet skills (X3) with competent digital managerial kindergarten teachers (Y) can be explained as follows.
  - a) Obtained value connection Kindergarten teacher internet skills with competence digital managerial of kindergarten teachers by 0.359. That means, there is a low relationship Among Kindergarten head digital leadership with competent digital managers of kindergarten teachers.
  - b) Hypothesis test results show that a score probability of 0.05 more big score probability sig. 0.000 or  $0.05 > 0.000$ . That is,  $H_0$  was rejected and  $H_a$  accepted. This could be stated that there is a positive and significant relationship Among Kindergarten teachers' internet skills competence and digital managerial of kindergarten teachers.

The testing hypothesis with correlation double use rule decision is as follows. First, if a probability of 0.05 is smaller or the same as the scoring probability of Sig F<sub>Change</sub> or ( $0.05 \leq \text{Sig F}_{\text{Change}}$ ), then  $H_0$  is accepted and  $H_a$  is rejected, meaning no significant. Second, if the scoring probability is 0.05 or the same as the scoring probability Sig F<sub>Change</sub> or ( $0.05 \geq \text{Sig F}_{\text{Change}}$ ),

then  $H_0$  is rejected and  $H_a$  is accepted, meaning significant (Sugiyono, 2013). Test results hypothesis with analysis correlation double described in table 7.

Table 7. Results Analysis Double Correlation

Connection between Variable	Coefficient Value Multiple Correlation	Sig Probability Value	Hypothesis Test Results
X1, X2, X3, X4, and X5 with Y	0.978	0.000	$H_0$ rejected & $H_a$ accepted

Based on table 7, then following this explained results testing hypothesis based on analysis regression double.

- a) Obtained value connection Kindergarten head digital leadership, teleworking, internet skills, digital communications, and kindergarten teacher motivation with competence digital managerial of kindergarten teachers by 0.978. That means, there is a very strong relationship Among Kindergarten heads' digital leadership, teleworking, and internet skills, and with the competent digital managerial of kindergarten teachers. Then contribution in a manner simultaneous Kindergarten head digital leadership teleworking, internet skills, with competence digital managerial kindergarten teacher =  $R^2 \times 100\%$  or  $0.978^2 \times 100\% = 95.65\%$ , while the remaining 4.35% related with variable other independents who do not research in this study.
- b) Hypothesis test results show that the R-value of probability 0.05 more big score probability sig. 0.000 or  $0.05 > 0.000$ . That is,  $H_0$  was rejected and  $H_a$  accepted. This could be stated that there is a connection in a manner simultaneously positive and significant Among Kindergarten heads with digital leadership, teleworking, and internet skills, with competent digital managerial of kindergarten teachers.

### Connection Kindergarten Principal Digital Leadership with Teacher Competence Managerial Digital

Research results show that Kindergarten head digital leadership relates positively and significantly with the competence of digital managerial of kindergarten teachers. The degree of relationship formed could be interpreted by category strong. Results research shows exist positive and significant relationship as well as strong Among Kindergarten heads of digital leadership with competent digital managerial kindergarten teachers indicating so important role of Kindergarten heads as digital leaders. Kindly empirical, results study this supporting study previously by the research results of Hamzah, Nasir, & Wahab (2021) showed head digital leadership school correlated with competence in teaching digital teachers. So is the results of research by Yuting, Adams & Lee (2022) show that digital leadership or often called leadership technology correlated with competence technology information and communication or teacher's digital competence.

On the side, through study this coefficient correlation Among Kindergarten head digital leadership with a competent managerial head of kindergarten. That is the level of closeness the relationship that is formed could be interpreted with a very strong category. This indicates so important role Kindergarten head as a digital leader for forming a teacher profile as a manager competent digital class through coaching competent digital managers. Coaching competence management of the kindergarten teacher referred to could be referred to in theory digital leadership developed by Abbu, et al (2022). coaching Kindergarten principals to form Kindergarten teacher profiles as a competent managers should especially formerly conducted assessment through fifteen dimensions of humanity from digital leadership from Abbu, et al (2022) which became key success

deep digital transformation organization ie honesty, humility, courage, intelligence artificial ethical, pattern think growth, transparent, data-focused, inspire engagement, storytelling, digital literacy, attitude positive, acquisition skills, share knowledge, participation, and colleagues trail. Based on the assessment the kindergarten head can give coaching in a manner appropriate corresponding with the need for repair or enhancement of quality leadership digital own and competence digital managerial of kindergarten teachers. Patterns of coaching that can be carried out by the head of the kindergarten, among others through continuous professional development in shape training.

### Connection *Teleworking* with Teachers Competence Managerial Digital

Research results show that Kindergarten teacher *teleworking* is related positively and significantly to the competence of digital managerial of kindergarten teachers. The degree of relationship formed could be interpreted by category as really strong. Kindly empirical, results study in line with the study by Lodovici (2021) which shows *teleworking* related to competency. This gives the implication that the more variety of *teleworking* from kindergarten teachers as *teleworkers* will give open opportunities for kindergarten teachers to implement tasks and jobs as managers in managing digital learning and digital classrooms in today's digital era this.

Various *teleworking* that can be used by kindergarten teachers work as *teleworkers* can be shared on two classifications main i.e., as worker distance far based home and workers distance far non-home based (Sajoy, 2020). Worker distance is a far-based house that is work from the house alone. Type worker distance far this could be classified into four categories as following. First, work routine at home for giver work full time. In context, this employee works full-time for an organization from his house alone than working from an office. They truly replace the house for the office although they are recipient wages full-time from the organization. Second, self-employed work at home. In this context several entrepreneurs as writers, artists, consultants, and others, more like work more from the house than own room office alone. With combine work and home, workers distance far to save cost rent and fees other. Third, work extra at home or work outside working hours at home. In this context, this type of Setting works where employees normally from something the opposite organization work full time outside the house, they use Settings house to do profession-related professional routines after normal business hours or on weekends. Fourth, work sometimes at home. In this context, some people at the moment do professional normal outside house they for manager full time, might as well do professional addition occasionally for manager secondary from a house they after working hours normal or on weekends. Also included in a category this is occasional workers who do a professional routine at home (once or twice a month) and use Technology Information and Communication (ICT). Type profession as that usually conducted for fulfilling deadline time or for other reasons and only informally.

Kindergarten teachers a work distance far non-home based is no work from home and work distance far from another location. Type worker distance far could classify becomes two categories as follows. First, workers distance remote that works from center telecommunication. In context, this several workers distances far no work from house. Otherwise, they could work from the center *telecommuting* as a center work satellite or center work environment. Second, workers' distance for mobile. In context, this worker distances far not work from the house or center of telecommunication. Worker distance far this usually move and maybe in a manner regularly visit location customers. They usually accept order work and deliver results work through ICT tools. Research deep *teleworking* connection with competent digital managerial skills of kindergarten teachers are measured with adapt theory *remote working* developed by Ingusci, et al (2022) with

measure it through two dimensions i.e., expediency work distance far and short work distance far. With so, increasing useful work distance away and minimizing the lack of work distance far will give meaning certain to repair the competence digital managerial skills of kindergarten teachers in the present and future world of education will be faced with environment digital education and learning.

### Connection Internet skills with Teachers Competence Managerial Digital

Research results show that Kindergarten teachers' internet-related skills are positive and significant with competence in digital managerial kindergarten teachers. The degree of relationship formed could be interpreted by category low. Not could be denied that in a manner of hypothetical theory Skills the internet users in the study give impacted certain perceptions of the kindergarten teacher used respondent research. In research, this adapted theory of internet skills from Van Deursen, et al (2016) went through four dimensions i.e., Skills operational skills to navigate information, skills social skills creative, and skills cellular/mobile. because of it, repairing connection internet skills with competent digital managerial of kindergarten teachers from category low to category currently or tall needed continuing professional development programs in shape training to kindergarten teachers. Training that could be sought by the head school nor give chance to follow outside training kindergarten institution.

### Connection Kindergarten Principal Digital Leadership, *Teleworking*, Internet Skills, with Teacher Competence Managerial Digital

Research results show that Kindergarten principals' digital leadership, *teleworking*, internet skills, teacher-parent digital communication, and motivation are related positively and significantly to the competence of digital managerial of kindergarten teachers. The degree of relationship formed could be interpreted with a very strong category. View integrated with a question in understanding this is a connection in a manner distinguished simulates connection in a manner partial. For a researcher, thinking is rational because studies previously from the relevant researchers with problem digital competence have developed fast. For example, have developed a multi-dimensional model of digital competence (Vieru, 2015), competency inside teacher management context development think critical learners (Duchovičová & Tomšík, 2018), teachers' professional digital competencies and teacher digital pedagogy (Moltudal, et al., 2018).

Although the study previously has described existing dimensions of management in developing teachers' digital competence. However, the research focuses on a manner competency-specific digital managerial kindergarten teachers still rare and yet mapped as body knowledge new. The basic idea of studying the competence digital managerial of the kindergarten teacher corresponds with the recommendation of Moltudal, et al (2018) namely a necessary study about how manager class and manager competent learning digitally can facilitate learning, integration digital competency, and management class. Because regardless of the nature and form of competence digital managerial skills of kindergarten teachers in the present and the future, no circumstances isolated, however always thought that the level of development competence digital managerial of kindergarten teachers naturally formed from a number derived factors from in teacher self (internal) and the factors that come from it from outside teacher self (external).



## CONCLUSION

Studies conclude that Kindergarten principals' digital leadership is in touch positive and significant with the competence of digital managerial of kindergarten teachers. The degree of tightness of the relationship that is formed is interpreted and categorized strongly. Kindergarten teacher *teleworking* is related positively and significantly to the competence of digital managerial of kindergarten teachers. The degree of tightness of the relationship that is formed is interpreted very strong category. Internet-related skills are positive and significant with the competence of digital managerial of kindergarten teachers. The degree of tightness of the relationship that is formed is interpreted categorized as low. Kindergarten head digital leadership, *teleworking*, internet skills, teacher-parent digital communication, and motivation related in a manner positive and significant simulate competence kindergarten teacher management. The degree of tightness of the relationship that is formed is interpreted very strong category.

## Suggestion

depart from conclusion study could suggestions are put forward study this as following. Refer to results research obtained recommended need improvement program developed sustainable competence in digital managerial with consider the theory of digital leadership, *teleworking* or work distance remote, internet skills, and digital communication the results of the study obtained in a study this related competence digital managerial still limited to kindergarten teachers. Because that is recommended to front need to research the population of elementary, junior high, and high school/vocational school teachers to be more comprehensive and reveal the significance teacher's role as a competent manager managing deep digital learning digital classes.

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