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LECTURER SOFT-SKILLS COMPETENCIES DEVELOPMENT MODEL: SUPPORTING LEARNING IN DIGITAL ERA AND "KAMPUS MERDEKA" PROGRAM

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Abstract. Globalization has initiated the competition in many sectors and has become a necessity. Advances in information and communication technology combined with the industrial revolution added to the frenzy of the situation. All sectors were obliged to make the related adjustments. The Covid-19 pandemic immediately made competition and uncertainty compound. Education has several types and levels, one of which is higher education. One of the determinants of university accomplishment is lecturers. The quality of human resources can be seen from the competence of hard skills and soft skills. Universities are required to redirect human resources to obtain the best quality of education. Universities are required to improve the quality of education management oriented to the development of soft skills. This study uses a quantitative approach with the help of structural equation modelling (SEM). A total of 133 lecturers were taken as the research sample. The results show that of the six soft skills studied (critical thinking, creativity, initiative, teamwork, and networking) two main variables are determined. They are initiative and networking ability. In relation to learning in the digital era and the "*Kampus Merdeka*" program, this study suggests the importance of lecturers always taking the initiative and utilizing the ability to initiate. Besides, lecturers are advised to conduct and maintain networks to be able to prepare human resources, especially amidst the uncertainty.

Keywords: soft skills; teamwork; critical thinking; initiative; networking; creativity; SEM

I. INTRODUCTION

Globalization has extremely an impact on the high global competition between countries. This condition forces human resources to be able to survive in competitive conditions and to enter a free competition in all national and global job markets. Many factors can increase the competitiveness of human resources, one of which is education **[1]**. Higher education institutions as one of the educational institutions play a major role in producing quality human resources so that they can be productively absorbed by the job market. In producing competitive human resources, educational institutions, in this case, universities, must be able to simultaneously improve both the hard skills (technical competencies) and the soft skills (non-technical competencies) of academic actors and academic administrators. Non-technical competency is one of the keys to producing highly competitive and superior human resources in the national, regional, and global context. Through education with respect to improving technical and non-technical competencies, students have high competitiveness so that they become the pillars of national development. Considering the importance of non-technical competencies, this study mainly focuses on describing models of non-technical competencies of lecturers at universities (for the benefit of students). The non-technical competencies are referred to as the so-called abilities beyond the technical capabilities of lecturers (and students). Includes the ability to create opportunities, make decisions, manage risk, and maintain strategy. Important non-technical competencies produce superior and independent human resources. So, it is important for universities to encourage education that leads not only to technical skills but also to non-technical abilities.

Five main variables are considered to affect non-technical competence, adopted based on a frame of Watts **[2]** and Penttila **[3]**. These variables, after going through the processes of alignment, include (1) Creativity, (2) Critical Thinking, (3) Initiative, (4) Teamwork, and (5) Social Networking. These five variables are believed to affect the improvement of the non-technical competencies of both academic participants and academic administrators. To improve the non-technical competencies, a comprehensive approach is needed. It focuses not only on achieving academic performance but also on abilities that make students and academic administrators contribute significantly to the state's progress. In the current context, the Ministry of Education and Culture initiated the concept of the "Kampus Merdeka" program. This concept can only be realized through an innovative learning system and environment. Starting from the importance of non-technical competencies for academic organizers and academic participants, this study focuses on answering the following questions: (1) What is the model for developing non-technical competencies for academic organizers. (2) How is academic administrators' level of non-technical competence compared with the main and

independent clusters? Note: For this second question, the answer will be sought through the next stage of research.

Through these two problem formulations, this research is expected to provide an overview of how to answer the following questions: (1) The results of the identification of the non-technical competencies development model for academic administration in universities and (2) A description of the analysis of differences in non-technical competencies for administrators from universities with the main and independent clusters (to be answered in the next stage of research). This research has a high urgency considering that improving the quality of human resources is also stated in the Strategic Plan of the Ministry of Research, Technology and Higher Education in which universities play an important role in learning, research, transfer of culture, technology, and economic development. Plus, the demands for 21st-century skills and the global Covid-19 pandemic since the early of 2020.

Non-Technical Competence

Competence is a person's skill in dealing with other people and oneself. Non-technical competencies include several things such as the value of motivation, behaviour, habits, character, and attitudes. Non-technical competencies are categorized into several areas. They are normally referred to as the winning characteristics **[4]**. Namely, communication skills, organizational skills, leadership, effort, logic, group skills, and ethics. Other sources state that soft skills can also be divided into personal and interpersonal traits. Personal traits include optimism, responsibility, sense of humour, integrity, time management, and motivation. Interpersonal skills include empathy, leadership, communication, good behaviour, friendliness, and teaching skills **[5]**. The study of non-technical abilities in higher education has been re-developed in recent times as conducted by Ashford **[6]** and McDonough **[7]**. This study emphasizes the incorporation of non-technical skills into the academic curriculum. Furthermore, Green-Weir **[8]** said that basically, students should not graduate from a place of study before receiving training or developing non-technical competencies. It can be explained that the discussion of morals and character in education began in the 1940s-1950s. At that time, the focus of the world of education was on academic achievement, especially the achievement of technical abilities. As if there is a reduction in weight related to character formation. The estuary was after the second world war when education about science and educational techniques often forgot the basic ethics and philosophy of education. There are several competencies related to socio-emotional learning, including: (1) Self-management (2) Responsible decision making, (3) Ability to build relationships, (4) Awareness of society, and (5) Self-awareness.

Non-Technical Competency Education

Educational competency is related to character development that can build the nation. The Ministry of Education and Culture through the flagship program "Merdeka Belajar Kampus Merdeka" proclaimed that non-technical competence is as important as technical competence. According to Suharyati **[1]**, non-technical education is aimed at forming quality human beings in line with the norms prevailing in society. Non-technical competence is part of character education. This is clearly related to the development of power that reflects the quality of self. The goal is to be able to improve performance in the world of education or work **[9]**. Learning about non-technical competencies as part of character education has a function to shape the character of workers. Its formation is based on a person's basic values, including interpersonal and intrapersonal abilities.

Non-Technical Competencies

Today's innovation competence is no longer defined narrowly. For example, it only focuses on creativity skills. In addition, measuring the competence of educators and students is not only based on actions or behaviour. Assessment of innovation competence can also be directed broadly as an effort to build a learning environment. For example, examining teaching techniques or general perceptions of training or education. In general, attributes that can shape innovation competence are related to soft skills. Nowadays, there is no comprehensive and valid framework for studying student behaviour or actions. Especially in the various phases of the innovation process developed in the context of education **[1]**. Correspondingly, there is a research gap between the academic literature related to innovation competence and how to measure and develop the concept **[10]**.

To align future needs and develop student skills, higher education institutions should start developing different pedagogical strategies and practices **[11]**. Although competency and skills-based learning approaches are widely used in pedagogical strategies **[12]**, little attention has been paid to the realm of innovation competence. In pedagogical innovation, a model redevelops pedagogy in the scope of higher education institutions. The competencies of students and educators are functionally integrated into the design of the learning system from the start of student studies. Innovation pedagogy is a strategic choice that permeates the entire organization and its activities and supports the development of student competencies to participate in the creation process **[13]**.

Competence is a holistic concept describing a person's ability to manage in a particular context **[14]**. Furthermore, it was emphasized that competence, capacity, and skills are considered three categories of complexity in contextual knowledge **[10]**. Competence is formed by a series of capacities. In turn, this forms several skills. These are all prerequisites for performing professionally in an increasingly complex environment. Competence can be described as complex knowledge of how to act through effective mobilization. Also, the combination of various internal and external resources in one situation [10]. Suharyati **[1]** added a learning perspective in the competency approach. They highlight that all competencies can be learned and taught as part of the personal development process embedded in the educational environment.

II. RESEARCH METHODS

Design

The research used a quantitative approach, i.e., using an explanatory approach. That is, to explain which variables are dominant in forming non-technical competencies. Explanatory quantitative **[14]** is a study for the context of research that is hypothesis testing to explain causal relationships between research variables. At the same time testing the hypotheses that have been formulated previously. The dependent variable in this study includes the non-technical competence of lecturers (Y). At the same time, there are three independent variables and two intermediate variables which are thought to theoretically affect the non-technical competence of lecturers **[15]**. The study looked at lecturers' perceptions of non-technical competencies, critical thinking, creativity, initiative, teamwork, and networking skills. In the end, we want to see a description of the level of non-technical competence of lecturers.

Location and Time of Research

This research is in the second stage (second year). Conducted in the Open University environment. The selection of research locations was carried out with the consideration that the Open University represented state universities implementing a distance education system and universities that had the widest network throughout Indonesia. This second year of research was carried out from March-November 2021. In addition, the involvement of other university lecturers was also sought. At least there are lecturers from Universitas Pakuan and other universities. The processed results from these other universities are used as input for testing the validity and reliability of the instrument.

Variables Observed

This research basically aims at answering two main issues related to non-technical competence. What is the non-technical competency development model and what factors affect competencies? The two research questions were in the frame of related and used variables, namely: (1) non-technical competence of lecturers, (2) Level of teamwork ability among lecturers, (3) Ability to network with lecturers, (4) Lecturer's initiative, (5) Level of lecturer's creativity, and (6) Lecturer's critical thinking ability.

Population and Sample

The population of lecturers comes from the Open University. In terms of methodology, the Structural Equation Modelling-Partial Least Square (SEM-PLS) used has several roles. Among others, as a system of simultaneous equations, linear causal analysis, path analysis (*path analysis*), analysis of covariance structures, and structural equation models. Parameter estimation in SEM or commonly known as Covariance-based SEM (CB-SEM) uses the Maximum Likelihood approach. This Maximum Likelihood method in estimating the model requires a large sample and multivariate and normal data. Parameter estimation using the Maximum Likelihood method requires several critical assumptions such as a minimum sample size of 10-15 times the number of indicators or more than 100 units of observation. Then the data spread following a normal distribution **[14]**. The sampling technique used in this study was *non-proportionate simple random sampling*. The total respondents in the research sample were 133 lecturers.

III. RESULTS AND DISCUSSION

Respondent Characteristics

Table 1. Respondents' Distribution Based on Faculty

Faculty	Frequency (n)	Percent (%)
Economics	25	18,80
Science and Technology	34	25,56
Humanities	11	8,27
Education	63	47,37
Total	**133**	**100,00**

Table 1 illustrates that the respondents came from several faculties, namely the Faculties of Economics, Science and Technology, Humanities and Education. Most research respondents came from faculties related to education (Social, Culture, Law, and Human Ecology) amounting to 47.37%. The least respondents came from lecturers with humanities background, 8.27%.

Table 2. Distribution of Respondent based on Age Level

Age Level (Years)	Frequency (n)	Percent (%)
26 - 35	22	16,5
36 - 45	33	24,8
46 - 55	20	15,0
56 - 65	58	43,6
Total	**133**	**100,0**

Table 2 shows that the age of respondents spread from the youngest age of 26 years to the oldest age of 65 years. Respondents with an age range of 56-65 years with 43.6%. Then in the second position followed by respondents aged 36-45 years, amounting to 24.8%. The last position of respondents with an age 46-55 years, amounted to 15%.

Table 3. Distribution of Respondents Based on Teaching Experiences

Teaching Experience (Years)	Frequency (n)	Percent (%)
1- 5	27	20,3
6 - 10	8	6,0
11 - 15	24	18,0
16 - 20	7	5,3
21 - 25	10	7,5
> 25	57	42,9
Total	**133**	**100**

Table 3 shows that respondents have variations in teaching length from 1 to over 25 years. A total of 42.9% of

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respondents have more than 25 years of teaching experience. Followed by teaching experience under five years of 20.3%. Respondents with teaching years of 16-20 years are in the lowest position, 5.3%.

Table 4. Distribution of Respondents Based on Functional Positions

Functional Position	Frequency (n)	Percent (%)
Lecturer	12	9,0
Assistant Professor	27	20,3
Senior Assistant Professor	72	54,1
Associate Professor	19	14,3
Professor	3	2,3
Total	**133**	**100**

Table 4 explains that respondents have functional positions spread from teaching staff (not yet have functional positions) to professors. Respondents with the functional position of senior assistant professor are in the highest position, 54.21%. In the second position, followed by respondents with functional positions of assistant professor by 20.3%. The last position of the respondent was an associate professor, 2.3%.

Non-Technical Competency Model of Lecturer

Validity and Reliability Indicators

In this model, there are six latent variables, five exogenous variables, and one endogenous variable. Based on the test results of the PLS Algorithm, in terms of testing the validity of the indicators, almost all indicators are valid (greater than 0.7). Only one indicator whose value is less than 0.7, the Teamwork variable (X4), precisely on the indicator of respecting the opinions of others (Figure 1).

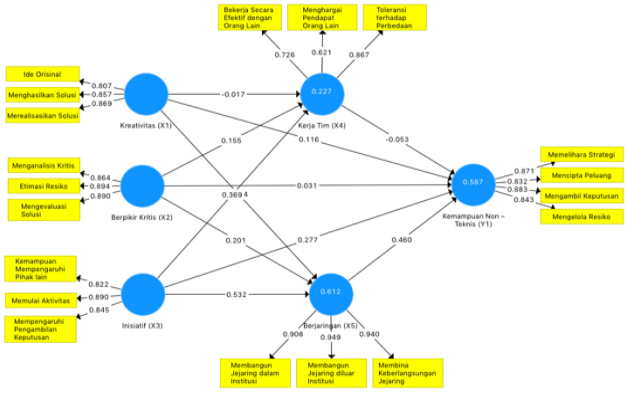

Figure 1. Lecturer Outer Model

Therefore, the elimination of these indicators is carried out and then the final model is obtained as presented in Figure 2. The results of the validity of the variables described by the Average Variance Extracted (AVE), value is greater than 0.5. Reliability per variable which is described from the value of Cronbach's Alpha, Rho A, and *composite reliability* in general has been fulfilled with a value greater than 0.6. Only the teamwork variable has a value less than 0.6 (Table 5). The value of *discriminant validity* is also good because the correlation value of the latent variable with its indicators is greater than the correlation with other latent variables. Thus, it can be said that this model predicts the indicators better than other latent variables (Table 5).

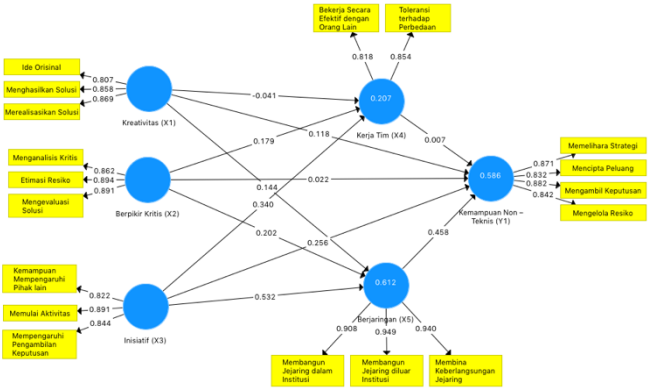

Figure 2. Outer Model of Lecture Competency

Table 5. Reliability dan Validity

Variable	Cronbach's Alpha	Rho A	Composite Reliability	Average Variance Extracted (AVE)
Critical Thinking (X2)	0.925	0.925	0.952	0.870
Networking (X5)	0.858	0.860	0.914	0.779
Initiatives (X3)	0.812	0.818	0.889	0.727
Non-Technical Competency (Y1)	0.880	0.887	0.917	0.735
Teamwork (X4)	0.570	0.574	0.823	0.699
Creativity (X1)	0.801	0.816	0.882	0.714

Based on Figure 1, Figure 2, and Table 5, it can be explained that the results of data processing on indicators that are considered capable of describing variables, as follows.

1. The indicator that best reflects Creativity (X1) is an indicator of realizing solutions (X1.3) with the *loading factor* value (0.869)
2. The indicator that best reflects Critical Thinking (X2) is an indicator of estimating risk (X2.2) with a value of *loading factor* (0.894)
3. The indicator that best reflects Initiative (X3) is the indicator that affects starting activities (X3.2) with the *loading factor* value (0.891)
4. The best indicator that reflects Teamwork (X4) is the tolerance indicator on the difference (X4.2) with the *loading factor* value (0.854)
5. The indicator that best reflects Social Networking (X5) is the indicator of building networks outside the institution (X5.2) with the *loading factor* value (0.949)
6. The indicator that best reflects Non-Technical Competence (Y1) is the indicator of making decisions (Y1.3) with the *loading factor* value (0.882).

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Table 6. Discriminant Validity

	Critical Thinking (X2)	Networking (X5)	Initiatives (X3)	Non-Technical Competency (Y1)	Teamwork (X4)	Creativity (X1)
Critical Thinking (X2)	**0.933**					
Networking (X5)	0.667	**0.883**				
Initiatives (X3)	0.744	0.680	**0.853**			
Non-Technical Competence (Y1)	0.732	0.589	0.676	**0.857**		
Teamwork (X4)	0.368	0.380	0.440	0.328	**0.836**	
Creativity (X1)	0.567	0.722	0.521	0.528	0.265	**0.845**

Adjusted R2 in this study was 0.586 (Table 7), this shows that the five exogenous variables can explain the Y1 variable by 58.6% and the remaining 41.4% is explained by other variables out of this study. The teamwork variable (X4) can be explained by creativity (X1), critical thinking (X2), and initiative (X3) of 20.7%. The networked variable (X5) can be explained by the variation of creativity (X1), critical thinking (X2), and initiative (X3) up to 61.2%.

Table 7. R Square

Variable	R Square	R Square Adjusted
Networking (X5)	0.612	0.603
Non-Technical Competency (Y1)	0.586	0.569
Teamwork (X4)	0.207	0.188

Inner Model

value *original sample* on the test results of the *inner model* shows the direction of influence of the independent variable on the dependent variable. If the value is positive, the effect is also positive; vice versa. To determine the significance of the effect of the independent variable on the dependent variable, it is seen from the value of *T statistics* and *P value*. *T statistics* greater than 1.96 and *p-value* less than 0.05 indicates that there is a significant effect between the independent and dependent variables (Figure 3).

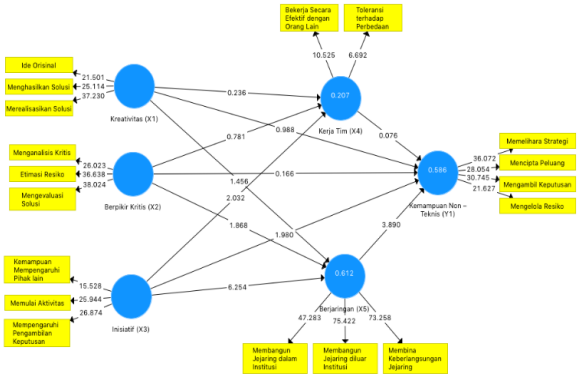

Figure 3. Inner model

To give meaning to what has resulted from the data processing that has been done, it can be illustrated illustratively in *the inner model* illustrated in Figure 4. In line with that, the results as summarized in Table 7 and Table 8 collectively draw that:

1. Creativity variable (X1) has no significant positive effect on Non-Technical Ability (Y1) and Networking (X5). However, it has no significant negative effect on teamwork (X4). When X1 is increased by 100%, it increases Y1 by 11.8% and X5 by 14.4% - but decreases X4 by 4.1%
2. Critical Thinking Variable (X2) has no significant positive effect on Non-Technical Ability (Y1), Teamwork (X4), and Networking (X5). When X2 is increased by 100%, it will increase Y1 by 2.2%, X4 by 17.9%, and X5 by 53.2%
3. Initiative variable (X3) has a significant positive effect on Non-Technical Ability (Y1), Teamwork (X4), and Networking (X5). When X3 is increased by 100%, it will increase Y1 by 25.6%, X4 by 34%, and X5 by 53.2% significantly
4. Teamwork variable (X4) has a positive and insignificant effect on Non-Technical Ability (Y1). When X4 is increased by 100%, it will increase Y1 by 0.7%
5. Social Networking variable (X5) has a significant positive effect on Non-Technical Ability (Y1). If X5 is increased by 100%, it will increase Y1 by 45.8% significantly.

Table 8 . Mean, STDEV, T-Values, P-Values Lecture Non–Technical Competency

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Networking (X5) → Non – Technical Competency (Y1)	0.458	0.451	0.118	3.890	0.000
Critical Thinking (X2) → Networking (X5)	0.202	0.206	0.108	1.868	0.062
Critical Thinking (X2) → Non – Technical Competency (Y1)	0.022	0.023	0.135	0.166	0.868
Critical Thinking (X2) → Teamwork (X4)	0.179	0.153	0.229	0.781	0.435
Initiative (X3) → Networking (X5)	0.532	0.530	0.085	6.254	0.000
Initiative (X3) → Non – Technical Competency (Y1)	0.256	0.269	0.129	1.980	0.048
Initiative (X3) → Teamwork (X4)	0.340	0.343	0.167	2.032	0.042
Teamwork (X4) → Non – Technical Competency (Y1)	0.007	0.012	0.097	0.076	0.939
Creativity (X1) → Networking (X5)	0.144	0.143	0.099	1.456	0.146
Creativity (X1) → Non – Technical Competency (Y1)	0.118	0.121	0.119	0.988	0.323
Creativity (X1) → Teamwork (X4)	-0.041	-0.020	0.176	0.236	0.814

Model Fit

For the PLS model, the general fit of the model is not well established. Thresholds have not been generally defined. Some researchers have also questioned the usefulness of model fit assessment in the PLS model because it is most predictive. Based on the results of the fit model, only SRMR

meets the requirements where the value is less than 0.08 (Table 9).

Table 9. Model Fit Summary

Measure	*Saturated Model*	*Estimated Model*
SRMR	0.076	0.076
d_ULS	0.988	0.989
d_G	0.610	0.609
Chi-Square	452.369	452.267
NFI	0.746	0.746

IV. CONCLUSION

Based on the results of the previous discussion, this study found two main conclusions related to non-technical competencies (soft) for lecturers related to digital era learning and the "Kampus Merdeka" program. The two magnitudes of the conclusion are: The lecturer's non-technical competency development model found from the results of the outer model that basically all the variables built were reliable and valid. From the results of the inner model, information is obtained that the model is in the moderate because it has an r-square value of 0.586. Based on the inner model, information is obtained that two main variables can influence the development of non-technical competencies of lecturers. The two variables are: (i) Initiative and (ii) networking ability. These two variables have a strong and significant influence value in encouraging the improvement of lecturers' non-technical competencies. In other words, this study suggests that, with certain limitations, learning that must receive attention in the digital era and in the context of "Kampus Merdeka" program is closely related to the ability to take initiative and network. With these two focuses, lecturers will be helped to determine the focus and orientation of doing the learning. At the same time, students also become more focused on prioritizing aspects that should be the focus.

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