The Mediating Role of Collaborative Decision Making on the Effect of Digital Literacy and Leadership on Military Soldiers' Professional Performance

Nefra Firdaus[1], Kholil[2*] and Titi Widaningsih[3]

[1]Student Doctoral Program of Communication Science, Post Graduate School, Sahid University, Indonesia.
[2]Post Graduate School, Sahid University, Indonesia.
[3]Faculty of Communication Science, Sahid University, Indonesia.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Original Research Article

ABSTRACT

Digital age has created an unregulated war environment and there are non-state actors, armed groups, terrorists, and criminals which should be faced by established governments. Therefore, in the military context today, soldiers as national security guards no longer face physical forms of combat only, information, however, has became the front line in the national security landscape and needs to be treated equally with the land, sea and air defense dimensions. This study aims to reveal how digital literacy and leadership improve professional performance of soldiers through collaborative decision making as mediator, which can be applied not only in the military environment but also in soldier's interaction with the civilian community in their social life. Quantitative approach with an explanatory survey is used in this study in order to explain symptoms and determine the causal relationship between variables, while the unit of analysis is

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Corresponding author: E-mail: kholillppm@gmail.com;

soldiers from various divisions and ranks with a sample size of 3,598 soldiers from all over Indonesia. The results show that increasing digital literacy and leadership will improve professional performance of the soldiers through collaborative decision making. Leaders should initiate digital leadership in order to develop digital literacy of the soldiers as well as employ digital based internal collaborative decision-making platforms in order to improve not only the professional performance of soldiers but also the organization effectiveness in general.

1. BACKGROUND

COVID-19 pandemic has brought changes to human life in the world, not only in the way organizations and companies in all sectors and regions conduct their operations, but also how people are forced to interact and carry out their daily activities through the utilization of digital technology. The pandemic, based on a survey conducted by McKinsey [1] in 2020, has accelerated the adoption of digital technology which is projected to continue growing in a long term's quantum leap not only at the organizational levels but in people's daily lives. Currently, people as consumers have dramatically used online channels and interacted with their communities through digital channels. The McKinsey [1] survey informed that at least 80 percent of the global community began to interact by incorporating the innovations of the industrial revolution 4.0. such as the internet of things (IoT), big data, artificial intelligence (AI), robots, and the sharing economy.

The industrial revolution 4.0 is an era of a rapid development of information technology which is marked by the development of IoT that has transformed in various fields of people's lives. While it is dominated by technologically advanced machines that will compete with human work, however, the pandemic has also accelerated the creation of a super-smart society or Society 5.0 that will create new value and solve social problems through the use of advanced technology. The ultimate impact of Society 5.0 is the synergy of people and technology for human well-being, productivity & effectiveness. Society 5.0 is a human-centered and technology-based concept of society which allows access and experience in a virtual space like in a physical space. In Society 5.0 technology, AI is based on big data and robots do or support human work.

In today's military context, soldiers no longer face physical forms of combat, but information becomes the front line in the national security landscape and needs to be treated equally with the dimensions of land, sea and air defense [2]. The digital age has created an unregulated war environment and there are non-state actors, armed groups, terrorists, and criminals facing established governments. Skills in using digital devices are very necessary and make digital technology not only a means of intermediary but also very central because without these skills, modern humans will find it difficult to meet the needs and modern military organizations will not be able to read the environmental situation and face competition.

Digital literacy of army's soldiers is very strategic to support military organizations in maintaining the resilience of the nation and society, so that the soldiers can help carry out analysis, verification and evaluation and support the delivery of correct information that does not disturb the public. Stanciulescu & Beldiman [3] also stated that the role of leaders in military organizations is very central in bringing organizations and soldiers to achieve their missions. In the digital era, the role of leaders is becoming increasingly central in facing intellectual, cultural and technological challenges as well as digital information systems that cause speed and access to communication with an unstoppable amount of data to overwhelm everyone in the organization. At this time, traditional leadership practices are not enough but shift to forms of leadership that require leaders to be able to think independently, make decisions quickly and accurately, take initiative and be aware of their abilities and adapt immediately to rapid changes even in chaotic situations.

What is interesting according to Mallick (2020), a new paradigm of leadership today, becoming more collaborative with the fact that no one

personally is able to provide the best solution alone so that collective action is needed based on a shared vision, ownership, shared values, and sense of belonging and respect. As the attack of massive hoax news and social issues nowadays, the army cannot only rely on the digital literacy of soldiers but must also develop a collaborative decision-making system so that it can manage information well and become a reference for both military and civilian society. Group decisions which are called collaborative decision making, according to Supovitz & Tognatta [4] involve three activities simultaneously, namely information reminders, information exchange, and information processing needed to deal with an uncertain and complex environment.

Based on the above phenomena, this study aims to reveal how digital literacy and leadership can support collaborative decision-making so that they collectively improve the professional communication performance of soldiers not only in the army and military environment, but also in the interaction of soldiers in their social life in general.

2. LITERATURE REVIEW

Digital literacy is the ability to search, find, utilize, share and create content using information technology and the internet (Cornel University, 2015; Graham [5]). There are five dimensions of digital literacy used in this study, namely skills to operate digital media [6,5,7], skills to think critically digitally [7,5,6], ability to consume digital media information [8], ability to produce information through digital media [8], and skills to collaborate digitally [7,5,6].

The ability to operate digital media is indicated by the ability to use a variety of smartphone applications, the ability to access information, the ability to select information, the ability to use digital communication tools, the ability to present digital information search results, the ability to produce digital information and the ability to distribute digital information [7]. Digital critical thinking skills are indicated by the ability to understand, analyze, evaluate and verify digital information [7]. The ability to consume digital information is indicated by the ability to synthesize and construct information on digital media [8]. The ability to produce information through digital media is indicated by the ability to produce information in digital media, creativity in

conveying information and innovation in utilizing digital media [8]. Collaborative skills on digital platforms are indicated by the ability to collaborate in teams in working on digital projects, collaboration skills in digital networks, skills to share information and the ability to participate in digital networks [7,8].

Today, leaders must face a new set of intellectual, cultural and technological challenges with the advent of digital information systems that enable high-speed communication and open access to previously unthinkable places with far more data and information than can be faced. by ordinary people. This requires a substantial change in the skills needed by leaders. Traditional leadership techniques and practices will not suffice in the future, but leaders must be able to think for themselves, make quick and accurate decisions, take initiative, be more aware of their abilities, and adapt quickly to rapid changes even in chaotic situations by using divergent thinking to process large amounts of information to arrive at an acceptable solution to effectively deal with the situation. Mallick (2020) states that the quality and skills of leaders in the 21st century in the information age have slightly changed, namely they will act in the capacity of facilitators, trainers, designers and teachers even though the basic formula for leader success has not changed much. Leaders must think strategically, set organizational goals, maintain group cohesion, enforce discipline, and make pragmatic decisions in stressful situations.

The leadership dimensions proposed in this study refer to the opinion of Hamad [9] who proposes two leadership styles to keep military organizations working optimally, namely transactional and transformational leadership styles. Stănciulescu & Beldiman [3] argue that in military organization, charismatic leadership style is still applied, while Mallick (2020) believes that in today's changing environment, military leaders should also be able to adopt effective and efficient thinking like it is on business decision-making. Therefore, he proposes leadership that anticipate external environment changes.

Participating in decision making is an integral part of people's lives, both interpersonally and within groups. A person who is willing (or unwilling) to participate collaboratively in decision making is likely to communicate in those types of situations in a fairly consistent way. Furthermore, people who participate collaboratively in

decision-making contexts exhibit communicative behaviors that suggest a willingness to participate. In contrast, people who are less willing or unwilling to participate collaboratively in decision-making contexts exhibit communicative behavior that shows their reluctance (Anderson et al, 1998). Entering the 21st century, research on collaborative decision making, hereinafter referred to as CDM, increases due to dynamic changes in the external environment that becomes more complex with a high level of uncertainty. In 2002, Gudergan [10] proposed the dynamics of collaboration and joint decision-making in a partnership partnership that describes the decision-making process. A decade later, the concept of CDM is widely used, especially in managing communication during natural disasters [11,12] or in important and sensitive situations in clinical decision making between doctors and patients [13]. The development of ICT technology, especially digital technology, also contributes to the proposals of researchers to develop a CDM platform (Seguy et al, 2010; Cioc [14]). The CDM approach by utilizing ICT is not new, but is based on the group decision approach of the mathematical communication theory proposed by Shannon (1949) who uses the first mathematical model that describes the operation of a communication system associated with a set of rules and instruments as a tool for analyzing group decision behavior. An important part of successful group decision-making techniques is given by their capacity to generate ideas under very limited time conditions [14].

Anderson et al (1998) stated that there are three dimensions that positively shape CDM, namely argumentation, willingness to communicate and interpersonal competence. Politi & Street [13] develop a collaborative decision-making model that requires a high level of cognitive and participatory communication to achieve shared thinking as the basis for joint action and efforts to manage high uncertainty. Anderson et al (1998) measured the dimension of desire to communicate by level of concern in communication, comfort in interaction, active in decision making, and active asking when not understanding. Interpersonal communication competence is indicated by communication control, collaboration, adaptability, empathy, interaction management, expressiveness, support and control of the communication environment. Argumentation ability is measured by negotiation ability, independence, ability to defend rights and interests, ability to direct and

social assertiveness. Stelzie et al (2017) stated that CDM includes a co design process indicated by prioritizing information, selecting solutions, setting values and determining stakeholders. Seltzie also stated that CDM can adapt in designing shared creative values. On the other hand, Seguy et al (2010) stated that CDM must be able to create shared value in the form of community social responsibility or territory social responsibility. In addition, there is a cultural cycle model of creation, production, dissemination, transmission and consumption as well as cultural interaction which is indicated by inclusion, tolerance and social cohesion. The development of digital technology also affects CDM. Cerreta et al. [15] argue that digital platforms in becoming a tool to activate real actions and define a mission to generate and evaluate complex social values shared by society through creating community communities, exploiting cultural heritage, planning missions, evaluating together missions and generate circulation effects. Based on the opinions of the experts above, the dimensions of collaborative decision-making for this research are cognitive decision-making processes, desire to communicate, argumentation skills, shared thinking. interpersonal communication, utilization of technological solutions and cycles or cultural interactions.

Hawkins et al. [16] stated that work performance in the Army is a complex construct due to the variety of tasks and jobs in the institution. A soldier is required to complete a variety of activities, including administrative duties, physical labor, communication skills and hazardous work related to firearms and explosives. While assignments pose the most dangerous and complex risks and challenges, the researchers saw high levels of stress and performance challenges even for off-duty soldiers in combat due to the demanding nature and sensitivity to achieving military objectives and missions which result in job performance in the Army being more critical than in the civilian sector. Incomplete or incorrect performance and work can have life-changing and life-threatening consequences for individual soldiers, their units, and even soldiers' families.

According to Hawkins [16], the professional performance of soldiers is seen from the formation of the character of the Army which becomes the identity of an Army soldier. Character performance is how soldiers represent the values of the Army (Sapta Marga, namely loyalty, duty, respect, selfless service, honor,

integrity, and personal courage), empathy (the tendency to see things from the perspective of others, the ability to identify and entering into the feelings and emotions of others, the desire to care for and look after Soldiers and others), and the soldier ethos (the shared sentiment within the Soldier which represents the professional spirit of the armed forces). The first dimension is military disposition, namely the authority and image of professional authority, physically healthy as seen from good health, strength, and endurance that supports one's emotional health and conceptual abilities under prolonged pressure. Self-control by demonstrating inner and outer calm through steady control over emotions, confidence by projecting reassurance on the unit's ability to succeed in whatever it takes. Endurance demonstrated by a tendency to recover quickly while maintaining the mission and focus of the organization.

Storlie [17] mentions that army professional performance is the intellectual capacity or mental disposition that shapes a leader's conceptual abilities and influences effectiveness. Dimensions are mental intelligence (mental agility) which is measured through a flexible mind, has a tendency to anticipate or adapt to uncertain or changing situations, always think of alternative plans when current decisions or actions do not produce the desired effect, have the ability to think outside the box. from a habitual mindset and improvising when faced with a dead end, the ability to quickly apply multiple perspectives and approaches to assessment, conceptualization, and evaluation. Courage to make decisions as measured by the capacity to assess situations or circumstances intelligently and draw reasonable conclusions, the tendency to form opinions and make reasonable decisions and reliable guesses, the ability to make the right decisions when all facts are not available. Innovate which is indicated by the tendency to introduce new ideas when there are opportunities or when facing challenging situations and have creativity in generating new or original and valuable ideas and objects. Have interpersonal tactics, namely the ability to understand interactions with others, be aware of how others see themselves and feel how to interact with them effectively, have an awareness of the character and motives of others and how it affects interactions with them. Have a domain of knowledge indicated by facts, beliefs, and logical assumptions in the relevant field, have technical knowledge, namely specific information related to certain functions or systems, Have tactical knowledge, namely understanding military tactics related to securing the specified objectives through military means, have shared knowledge, namely understanding common organizations, procedures, and roles in national defense, cultural and geopolitical knowledge, namely understanding cultural, geographical, and political differences and sensitivities.

On the other hand, Sumitra [18] states that the performance of soldiers is measured based on 4 factors, namely experience, technical competence, behavioral competence and personality. Experience is what someone has done and can be measured through analysis of work history, performance appraisal results, and track record. Technical competence refers to what a person already knows and can be measured through professional qualifications from certificates and diplomas as well as through ability tests or competency tests. Technical competence is military professional expertise indicated by training, innovative thinking skills. Behavioral and personality competencies are more related to psychological aspects. This competence relates to what a person can do. To have a good performance, a person must be able to show behavior that supports the implementation of his duties and positions. Behavioral competence can basically be measured from the Occupational Competency Assessment Program or through a 360-degree assessment or sociometric assessment. Personality is generally more measured through psychometric questionnaires and other psychological measuring tools.

Bersin & Zao-Sanders (2020) stated that data literacy and skills by utilizing digital technology can support decision making regarding resource allocation, providing solutions to address consumer and operational needs. Bejakovic & Mrnjavac (2020) research also shows the importance of digital literacy in decision making. Brown et al (2016) mentioned that digital literacy inseparable and an integral part in the effort to achieve digital leadership while leadership is also determined by digital literacy. Research that connects digital literacy and performance in the era of the industrial revolution 4.0 has been carried out by Abas [19]. His research shows that there is a positive relationship, both correlational and positive influence between digital literacy and employee performance. In addition to stating the relationship between data literacy and decision making, Bersin and Zao-Sanders (2020) also state its effect on operational performance,

namely improving services and operations. Sariwulan et al. [20] also stated the importance of digital literacy on entrepreneurial performance.

Mallick (2020) states that the current nature of new leadership is increasingly collaborative with the fact that no one personally is able to provide the best solution so that collective action is needed based on a shared vision, ownership, shared values, and respect. Therefore, today's leaders must have a support system for collective and collaborative decision making to reduce risk and increase decision effectiveness. Stark & Poppler [21] in their research shows that leadership affects performance significantly. A good leader has a positive impact on the company, especially in achieving the targets set. Mallick (2020) also states that through the right direction, motivation, planning and decision making, every leader will affect the performance of the organization he leads. Wong et al. [22] that CDM is able to contribute to performance and there is a positive relationship between IT-enabled CDM and customer service performance. A similar opinion was also expressed by Lai et al (2020) in a study that revealed a positive influence between CDM and logistics service performance.

Based on the relationships between the variables above, the paradigm of this research is described as follows.
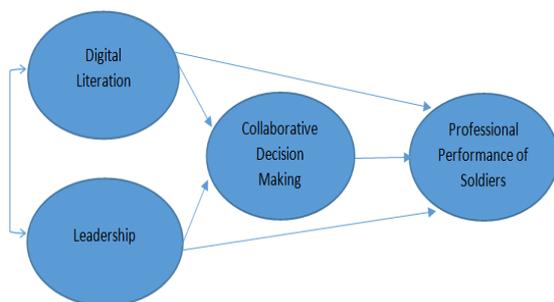

Fig. 1. Theoretical framework

Based on the above framework, the hypotheses in this study are:

1. Digital Literacy and Leadership affect Collaborative Decision Making partially or simultaneously.
2. Digital Literacy and Leadership affect the Professional Performance of Indonesian Army Soldiers, either partially or simultaneously.

3. Digital Literacy and Leadership Affect the Professional Performance of Indonesian Army Soldiers through Collaborative Decision Making.

3. METHODOLOGY

The type of research used in this study is an explanatory survey which is aimed to explain symptoms and causal relationship between variables. This study uses a one-shot time horizon with cross-sectional data type. The unit of analysis is Indonesian Military consisting of various divisions and ranks with a sample size of 3,598 soldiers from all over Indonesia.

The analytical design used to test the hypothesis and determine the relationship between research variables uses the method of structural equation model analysis (SEM) which reflects the relationship between latent variables, and measurement components that show the relationship between latent variables and their indicators.

4. DISCUSSION

4.1 Measurement Model

There are three criteria for assessing the measurement model according to: First, convergent validity (large loading factor for each construct). In most references a factor weight of 0.50 or more is considered to have strong enough validation to explain latent constructs (Hair et al, 2010; Ghozali, 2008). Second, discriminant validity, the criteria are met with Average Variance Extracted (AVE) above 0.5. Third, by measuring internal consistency using Composite Reliability (CR) with a value above 0.7.

Based on the Table 1, it is known that the loading factor value of each indicator shows a value > 0.5 and t count > t table (= 1.96). This shows that all indicators are declared valid. The AVE value for each variable shows a value > 0.5 and CR indicates that the value of each variable > 0.7 means that the variable construct is declared to have accuracy, consistency of the accuracy of a measuring instrument in making measurements.

Table 1. Outer model

Dimension	Indicator	Index	Loading factor	t test	Error	Construct Reliability (CR)	AVE
Skills in operating digital media			**0,86**	**18,1**		**0,92**	**0,62**
	Ability to utilize various smartphone apps	Litera1	0,72		0,48		
	Ability to access digital information	Litera2	0,71	14,57	0,50		
	Ability to create digital media by utilizing ICT	Litera3	0,79	15,56	0,38		
	Skill to utilize digital communication tools	Litera4	0,78	15,56	0,39		
	Presentation ability skill for digital information search	Litera5	0,85	16,26	0,28		
	Ability to produce information through digital media	Litera6	0,85	16,31	0,28		
	Ability to distribute digital information	Litera7	0,79	15,67	0,38		
Cognitive Skills			**0,75**	**16,57**	**0,44**	**0,86**	**0,60**
(X2)	Ability to understand information	Litera8	0,77	-	0,41		
	Ability to analyze information	Litera9	0,78	14,43	0,39		
	Ability to evaluate information	Litera10	0,78	14,42	0,39		
	Ability to verify information	Litera11	0,77	14,28	0,41		
Ability to consume digital media (X3)			**0,79**	**16,76**	**0,38**	**0,81**	**0,68**
	Ability to synthesize information for digital media	Litera12	0,8	-	0,36		
	Ability to construct digital media information	Litera13	0,85	14,11	0,28		
Literacy skill to produce information through critical digital media (X4)			**0,9**	**20,9**	**0,19**	**0,88**	**0,71**
	Ability to create information in digital media	Litera14	0,84	-	0,29		
	Creativity	Litera15	0,86	17,46	0,26		
	Innovation in utilizing digital media	Litera16	0,83	17,14	0,31		

Dimension	Indicator	Index	Loading factor	t test	Error	Construct Reliability (CR)	AVE
Collaboration Skills (X5)			**0,81**	**18,26**	**0,34**	**0,90**	**0,62**
	Ability to work in teamwork on digital projects	Litera17	0,79	-	0,38		
	Collaboration ability in digital networks	Litera18	0,82	16,05	0,33		
	Skill to share information and resources	Litera19	0,86	16,5	0,26		
	Ability to participate in digital networks	Litera20	0,84	16,28	0,29		
Charismatic Leadership (X6)			**0,89**	**19,38**		**0,87**	**0,63**
	Have a revolutionary vision to make a change	Pimpin1	0,78	-	0,39		
	Communicate the vision dramatically	Pimpin2	0,71	14,82	0,50		
	Offer radical solutions	Pimpin3	0,83	16,35	0,31		
	Touches the emotional aspect of followers	Pimpin4	0,84	16,46	0,29		
Transactional Leadership (X7)			**0,92**	**20,19**		**0,87**	**0,63**
	Give praise/appreciation for the expected attitude/behavior	Pimpin5	0,80	-	0,36		
	Providing punishment (sanctions) for inappropriate behavior	Pimpin6	0,69	14,49	0,52		
	Using the command structure to ensure the performance of soldiers	Pimpin7	0,79	15,92	0,38		
Transformational Leadership (X8)			**0,89**	**20,72**	**0,21**		
	Ability to provide intellectual stimulation to explore the capacity of subordinates	Pimpin8	0,83	-		0,86	0,68
	Individual consideration to be a mentor or coach to achieve something	Pimpin9	0,79	16,7	0,38		
	Ability to provide inspirational motivation	Pimpin10	0,84	17,44	0,29		

Dimension	Indicator	Index	Loading factor	t test	Error	Construct Reliability (CR)	AVE
	Ability to give ideal influence (be a role model) to subordinates	Pimpin11	0,84	17,32	0,29		
Leadership Adapting to the External Environment			**0,86**	**20,89**		**0,90**	**0,69**
	Ability to make decisions, and consider the optimal benefits.	Pimpin12	0,86	-	0,26		
	Ability to make decisions with measurable risk	Pimpin13	0,86	17,91	0,26		
	Ability to encourage teamwork with different culturaL background	Pimpin14	0,89	18,28	0,21		
	Critical ability to input from subordinates	Pimpin15	0,71	15,65	0,50		
Cognitive processes in Decision Making (Y1)			**0,81**	**19,73**		**0,94**	**0,81**
	Understanding the problem	Kolab1	0,89	-	0,21		
	Awareness of obligations (sense of obligation) in decision making	Kolab2	0,90	19,45	0,19		
	Awareness of accountability in decision making (sense of accountability)	Kolab3	0,91	19,67	0,17		
	Risk faced (perceived risk)	Kolab4	0,89	19,29	0,21		
Desire to communicate (Y2)			**0,86**	**19,28**		**0,94**	**0,79**
	Actively asking if don't understand a problem content	Kolab5	0,84	-	0,29		
	Express preference	Kolab6	0,87	17,92	0,24		
	Open to considering options	Kolab7	0,86	17,85	0,26		
Argumentation (Y3)			**0,87**	**19,81**	**0,24**	**0,91**	**0,73**
	Negotiation	Kolab8	0,85	-	0,28		
	Persuasion	Kolab9	0,86	18,41	0,26		
	Freedom in giving opinion	Kolab10	0,85	18,31	0,28		

Dimension	Indicator	Index	Loading factor	t test	Error	Construct Reliability (CR)	AVE
	Socially assertive	Kolab11	0,85	18,34	0,28		
Shared Vision			**0,86**	**19,4**		**0,96**	**0,75**
	Validate (ensure) the perceptions of the actors	Kolab12	0,82	-	0,33		
	Common understanding of a problem	Kolab13	0,88	18,61	0,23		
	Understand the risks that will be faced with a choice	Kolab14	0,88	18,6	0,23		
	Respect the values held by each member of the group	Kolab15	0,88	17,82	0,23		
	Consultative activities	Kolab16	0,85	18,26	0,28		
Interpersonal Communication (Y4)			**0,86**	**20,01**		**0,92**	**0,74**
	Control of communication environment	Kolab17	0,87	-	0,24		
	Empathy attitude	Kolab18	0,85	18,51	0,28		
	Supportive attitude / giving support	Kolab19	0,87	18,82	0,24		
	Equality is needed in communication	Kolab20	0,86	18,59	0,26		
Technology solutions			**0,83**	**17,89**		**0,92**	**0,67**
	Utilization of digital technology/platform	Kolab25	0,81	-	0,34		
	Support systems such as the use of decision-making applications	Kolab26	0,82	16,06	0,33		
	Utilization of technology for the development / creation process	Kolab27	0,82	16,09	0,33		
Cycle / cultural interaction			**0,87**	**19,1**	**0,24**	**0,87**	**0,69**
	Tolerance is indispensable in joint decision making	Kolab28	0,83	-	0,31		
	Inclusion (involvement) of each individual	Kolab29	0,85	17,45	0,28		
	Social cohesion	Kolab30	0,81	16,82	0,34		

Dimension	Indicator	Index	Loading factor	t test	Error	Construct Reliability (CR)	AVE
Soldier Character			**0,9**	**18,81**		**0,95**	**0,68**
	Sapta marga	Kinerja1	0,81	-	0,34		
	Militancy as an army soldier	Kinerja2	0,83	17,75	0,31		
	Self-control	Kinerja3	0,89	18,56	0,21		
	Self-confidence	Kinerja4	0,88	18,37	0,23		
	Firmness	Kinerja5	0,88	18,35	0,23		
Leadership spirit			**0,9**	**18,81**	**0,19**	**0,90**	**0,70**
	Strong influence in society (civilian)	Kinerja6	0,74	-	0,45		
	Role model for society (civilian) in the environment	Kinerja7	0,86	16,74	0,26		
	Create a peaceful environment	Kinerja8	0,88	16,99	0,23		
	Motivate society (civilian)	Kinerja9	0,87	16,88	0,24		
Soldier experience (Z3)			**0,9**	**22,53**	**0,19**	**0,94**	**0,74**
	Job Experiences	Kinerja10	0,88	-	0,23		
	Job appraisal results	Kinerja11	0,88	19,41	0,23		
	Track records	Kinerja12	0,82	18,25	0,33		
Soldier intellectual capacity (Z4)			**0,96**	**23,86**	**0,08**	**0,92**	**0,74**
	Mental endurance	Kinerja13	0,88	-	0,23		
	Innovative thinking skills	Kinerja14	0,84	19,57	0,29		
	Adaptability	Kinerja15	0,88	19,57	0,23		
	Capacity to face change / openness to new things	Kinerja16	0,83	20,27	0,31		
Soldier technical Competencies (Z5)			**0,97**	**22,92**	**0,06**	**0,92**	**0,69**
	Decision-making skills at critical times	Kinerja17	0,84	-	0,29		
	Never give up	Kinerja18	0,88	19,58	0,23		
	Intelligence ability	Kinerja19	0,77	17,69	0,41		
Institutional Competencies (Z6)			**0,86**	**20,35**	**0,26**	**0,93**	**0,77**

Dimension	Indicator	Index	Loading factor	t test	Error	Construct Reliability (CR)	AVE
	Strategic planning	Kinerja20	0,82	-	0,33		
	Discipline in enforcing operating standards	Kinerja21	0,89	18,38	0,21		
	Focus on implementing policies	Kinerja22	0,9	18,56	0,19		
	High commitment to carry out the vision and mission of the institution	Kinerja23	0,89	18,45	0,21		

4.2 Structural Model

Structural Model is a model that shows the structural relationship between variables (Malhotra, 2012). This model is a set of exogenous and endogenous variables in a model, together with the direct effects or direct arrows connecting them, and the disturbance factors for all these variables.

Based on the Table 2, it can be seen that the model used is in accordance with the model suitability criteria where prob. Chi Square > (= 0.05) with the RMSEA measurement index in the range of expected values of 0.000 < 0.05, the value of GFI and AGFI being at the expected value of 0.96 > 0.9, so it can be concluded that the model is in the Good fit category or the model is submitted has been supported by empirical conditions. A higher parsimony measurement will represent a better match. Parsimony index or PNFI > 0.9 to assume a good match. The results show that the PNFI value indicates the model is appropriate.

Based on data on Table 1 and Fig. 2, soldiers' digital literacy is shaped by the ability to produce information through digital media (0.90), skills to operate and use digital media applications (0.86) and skills to collaborate digitally (0.81). Those capabilities need to be the focus of the Indonesian army in order to improve the digital literacy of soldiers while the factors that should be taken into account in setting up the digital literacy of the soldiers are the ability to present digital information search results, the ability to produce information through important digital media, the ability to develop digital content and distribute the content through various digital media, develop creativity and innovation in utilizing and producing digital content, the ability to share information and resources digitally, and the ability to participate and work in digital networks.

The types of leadership required is transactional (0.92), transformational (0.89) and charismatic (0.89), while the leadership aspects that will motivate soldiers to increase their digital literacy are giving appreciation to the expected attitude, motivating and being a role model for soldiers, stimulating soldiers' intellectuals, as well as providing radical change solutions through the emotional aspects of soldiers.

The main dimensions in supporting soldiers to make collaborative decision making are by increasing argumentation ability (0.87); soldier's desire to communicate actively (0.86); improve interpersonal skills (0.86) and encourage shared or consensus thinking or decision (0.86). The main factors that encourage collaborative decision making are the ability to persuade, negotiate, the freedom in giving opinion, assertiveness; the desire to express preferences; understanding problems and risks of the decisions that will be taken; respecting individual values in the group, controlling conducive environment and encouraging individual participation culture in the group.

The professional performance of soldiers is indicated by technical competence (0.97), intellectual capacity (0.96), experience (0.90), soldier character (0.90) and leadership spirit (0.90). Important factors that shape the professional performance of soldiers are unyielding attitude, adaptability and mental resilience, self-confidence, self-control, the ability to create a conducive and motivating environment for the community, the ability to make decisions at critical times and work history and results.

Table 2. Goodness of Fit Index (GOF)

No.	Goodness of Index	Cut-off Value	Result	Conclussion
1	Chi Square	Expectedly small	2700.54	Close Fit
2	Probability Chi Square	$\geq$ 0.05	1.000	Close Fit
3	RMSEA	RMSEA ≤0.08 (Good Fit) RMSEA ≤0.05 (Close Fit)	0.000	Close Fit
4	Normed Fit Index (NFI),	$\geq$ 0.9	0.99	Close Fit
5	Parsimonious Normal Fit Index (PNFI)	$\geq$ 0.9	0.91	Close Fit
6	GFI	$\geq$ 0.80	0.96	Close Fit
7	AGFI	$\geq$ 0.80	0.96	Close Fit

Table 3.

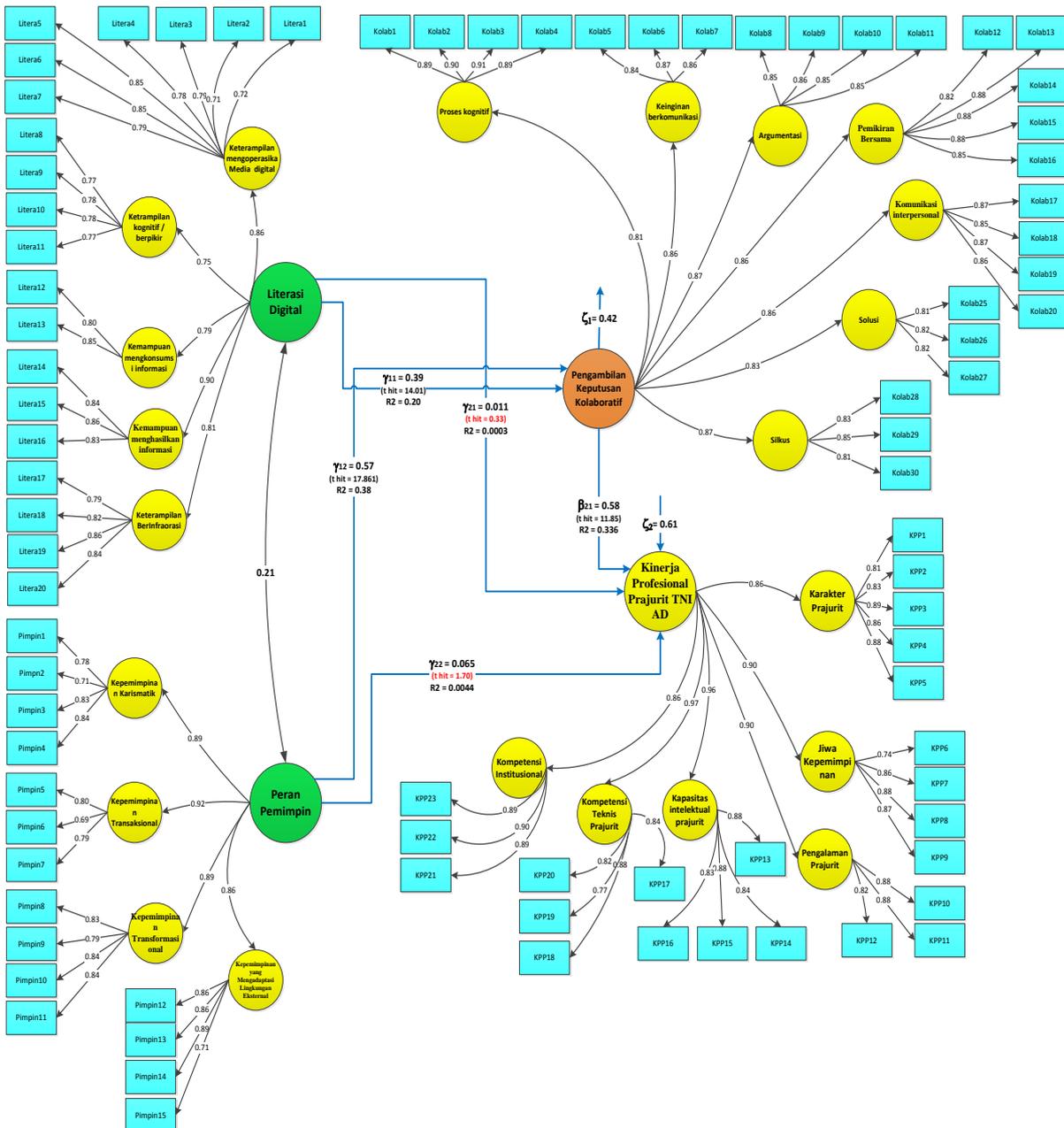| Collaborative Decision Making	=	0,39*Digital Literacy (0,028) 14,01	+ 0,57 Leadership (0,032) 17,61		R²=0,58
Professional Performance of Soldiers	=	0,58* Collaborative Decision Making (0,049) 11,85	+ 0,011 Digital Literacy (0,032) 0,33	+ 0,065 Leadership (0,038) 1,70	R²=0,39

Fig. 2. Research model

Table 4. Hypotheses testing

No	Structural Model	Standardized Coefficient (λ)	SE (λ)	t test	R2	Conclusion
1	Digital Literacy → Collaborative Decision Making	0.39	0.028	14.01*	0.203	Signifikan
2	Leadership → Collaborative Decision Making	0.57	0.032	17.61*	0.377	Signifikan
3	Digital Literacy → Professional Performance of Soldiers	0.011	0.032	0.33	0,0003	Tidak signifikan
4	Leadership → Professional Performance of Soldiers	0.065	0.038	1.70	0,0044	Tidak signifikan
5	Collaborative Decision Making → Professional Performance of Soldiers	0.58	0.049	11.85*	0.336	Signifikan
6	Digital Literacy → Collaborative Decision Making → Professional Performance of Soldiers	0.229	0.025	9.019**	0.229	Signifikan
7	Leadership → Collaborative Decision Making → Professional Performance of Soldiers	0.333	0.034	9.859**	0.333	Signifikan

*significant at α = 0.05 (t table = 1.96)
**sobel test

The data in Table 4 above shows that digital literacy and leadership significantly affect collaborative decision making, where leadership influences collaborative decision making more than digital literacy. This means that leadership is indispensable in increasing digital literacy and encouraging collaborative decision making. On the other hand, collaborative decision making affects the professional performance of soldiers but digital literacy and leadership do not directly affect the performance of soldiers but must go through collaborative decision making. It means digital literacy and leadership are mediated by collaborative decision making in order to be able to improve soldiers' professional performance.

Collaborative decision-making that affects significantly the professional performance of soldiers supports the statement by Mallick (2020) as he proposes that military organization in today's ever-changing and dynamic situations, need to build a joint decision-making system so that every decision has passed the evaluation process and every soldier understand the impact of these collective decisions. Digital literacy and leadership support are needed to make this

mechanism possible. As stated by Mallick (2020) collaborative decision-making processes require leader support and soldier digital literacy. The influence of digital literacy which does not directly affect the professional performance of soldiers is contrary to the opinions of Abas [19], Bersin & Sao Sanders (2020) and Sariwulan [20]. This is probably because Indonesian army institution has not assessed the performance of soldiers based on their digital literacy but on how they accomplish the missions. The results of this study are also different from the opinions of Stark & Poppler [21] and Mallick (2020) as leadership does not significantly affect the professional performance of soldiers which is probably because leaders in the army institution have not seen digital literacy of soldiers as an important professional performance.

5. CONCLUSION

Improving the professional performance of the Indonesian Military can be done by increasing digital literacy and leadership through the development of appropriate collaborative decision-making platforms. Currently,

organizations and most of the leaders in Indonesian army have not seen the digital literacy of soldiers as a factor in shaping the professional performance of the Indonesian Army. While the army's leaders have not yet motivated and encouraged soldiers to improve digital literacy and make appropriate use of collaborative decision-making platforms.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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