



## RESEARCH ARTICLE

## Quality of Personnel via Management's Intellectual Competence in Army Firms

Le Trung Thanh<sup>1</sup>, Nguyen Ngoc Minh<sup>2\*</sup>, Le Quang Trung<sup>3</sup>, Ha Thi Thu Phuong<sup>4</sup><sup>1,3</sup> University Labour and Social Affairs, Vietnam<sup>2</sup> Hanoi University of Business and Technology, Vietnam; Military Petrochemical Joint Stock Company, Vietnam<sup>4</sup> Hanoi University of Business and Technology, Vietnam**ARTICLE INFO****ABSTRACT**

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This study presents, analyzes, and measures the quality of personnel via management's intellectual competence in army firms in Vietnam. Based on the research overview and expert interview results, the dependent variable "the quality of personnel via management's intellectual competence in army firms in Vietnam" is measured by 4 component attributes. The authors conduct descriptive statistics, analyze Cronbach's Alpha scale, EFA analysis, and independent T-test with the support of SPSS software to evaluate and measure the quality of personnel via management's intellectual competence in army firms in Vietnam. The research results show that the surveyed subjects evaluate the quality of personnel via management's intellectual competence in army firms in Vietnam at an average of 3.381/5; the Cronbach's Alpha coefficient of the component attributes is greater than 0.6; there is no difference in the assessment of the quality of personnel via management's intellectual competence in army firms in Vietnam between male and female subjects. Based on the research results, the authors propose some recommendations to improve the quality of personnel via management's intellectual competence in army firms in Vietnam.

**\*Corresponding Author:**

minhnn.84@gmail.com

**INTRODUCTION**

Human resource quality is the sum of the characteristics, properties, and abilities of employees, directly contributing to the performance and development of the organization. Normally, the quality of human resources of a business is assessed through the following 3 criteria: intelligence, physical strength, and mental strength. High intelligence shows the ability to absorb and process information and apply knowledge to work performance.

Currently, there are two types of state-owned enterprises in the military. These are enterprises directly serving national defense and security (100% state-owned capital) and enterprises combining economy with national defense and security (including 100% state-owned enterprises that are undergoing equitization or have been equitized in which the state holds controlling shares and performs military and defense tasks). In recent years, military enterprises have created about 5% of GDP. That is, on average, each year the country's GDP is about 300 billion USD, of which military enterprises contribute about 15 to 20 billion USD. In addition, each year, military enterprises contribute about 40,000-50,000 billion VND to the state budget, equal to about 25% of the contribution of state-owned enterprises.

In addition to the tasks of production, business, military, and national defense, military enterprises also have the task of standing in key areas, both producing and helping people, contributing to

beautifying the image of Uncle Ho's soldiers. The overall indicators of enterprises, such as revenue, profit, budget payment, average income of workers, and export value, have continuously increased over the years. It can be said that military enterprises have made important contributions to the cause of the national liberation struggle, building and firmly protecting the socialist fatherland of Vietnam. Constantly innovating and developing production and business effectively, in accordance with state laws, contributing to stabilizing the macroeconomy and ensuring social security. The achievements of military enterprises have affirmed that in every revolutionary period, our army has always promoted the traditional nature of Uncle Ho's soldiers, fulfilling its functions as a fighting army, a working army, and a production labor army according to the teachings of beloved Uncle Ho.

Management human resources play an important role in military enterprises. They are responsible for operating and managing the organization's activities, ensuring the creation of profits, military defense, and sustainable development for the enterprise. In addition, the management team represents the organization, signing contracts and legal relations during the operation of the enterprise. At the same time, it helps the Board of Directors realize all directions and visions. Therefore, the quality of management human resources in military enterprises must be improved.

There have been a number of studies on human resource quality in the world, typically Laura Woods (2017), Shreyas Kammar (2015), etc., but they were conducted in different fields under different aspects and with different scopes of content, time, and space.

From the above reasons, the study of "Quality of personnel via management's intellectual competence in army firms in Vietnam" has scientific significance and is necessary.

## **LITERATURE REVIEW**

There are many studies on the quality of human resources in the world, typically: Susan (1987) has proposed criteria that are considered as measures of the quality of human resources in enterprises, including awareness, working skills, technology application, attitude, trust, sensitivity, and personal characteristics of human resources. The author evaluates human resources with knowledge, working style, thinking, and action based on the modern and developed working environment. William (1991) believes that whether human resources are of quality or not, they must have the knowledge to work and have the awareness to work to create wealth for the organization.

According to Susan (2001), the quality of human resources in enterprises is measured by awareness, skills, technology application, attitude, trust, sensitivity, and personal characteristics. The study also suggests that in modern human resource management, promoting awareness, culture, and labor discipline is really necessary. Research on human resources with knowledge, working style, thinking, and action based on modern and developing working environments.

Saunders (2010) studied human resource management to evaluate the quality of human resources. The author asserted that if the manager performs his/her leadership role and function well, other employees will obey and follow, but if the manager does not perform fully and seriously, the employees will not comply and not follow the standards, and the manager cannot blame the employees.

Kuriakose (2016), with the research scope of the industrial construction industry in India, pointed out the criteria to evaluate the quality of human resources, including working capacity, working attitude, quality of completed work, labor productivity, professional ethics, and ability to cope with risks.

In Vietnam, Phung (2008) said that the success of an organization depends on human resources and the qualifications of those human resources. The author inherited previous studies on measuring the quality of human resources, including intelligence, physical strength, and mental strength. In which intelligence includes educational level, professional knowledge, vocational skills, and work experience.

Doan (2013) studied human resources in the wood processing and oil and gas industries and proposed criteria for evaluating the quality of human resources, including intelligence (professional knowledge, education level, vocational skills, working experience), physical strength, and mental strength-attitude.

Nguyen (2019) affirmed that the quality of human resources in Vietnam is currently limited; the rate of trained workers is low, not meeting the needs of the labor market and integration. The author believes that the quality of human resources is the ability of people to perform and complete work to achieve the purpose of work, and human ability is called capacity, including physical strength, intelligence, and mental strength.

Inheriting the above studies, this study evaluates the quality of human resources of the management team in military firms in Vietnam, with the survey subjects being the management team in military firms. In addition, this study uses two research methods, qualitative and quantitative, to analyze and measure the quality of human resources of the management team in military firms.

**METHODOLOGY**

The authors inherit previous studies and qualitative research results through expert interviews. On the other hand, the authors combine with the inductive method to verify, based on the results of qualitative research, they will adjust and add observation variables to the questionnaire to conduct quantitative research. Therefore, the authors determine the quality of personnel via management's intellectual competence in army firms, including 5 attributes (observation variables) in Table 1 as follows:

**Table 1: Attributes (components) of quality of personnel via management's intellectual competence in army firms**

Code	Description
<b>Quality of personnel via management's intellectual competence in army firms (QPMIC)</b>	
QPMIC1	Education level
QPMIC2	Professional knowledge
QPMIC3	Professional skills
QPMIC4	Thinking and creative ability
QPMIC5	Problem solving ability

Then, the authors conducted a survey through a questionnaire consisting of 5 observation variables and measured by a 5-point Likert scale, from 1 "disagree" to 5 "completely agree." The data collection method was carried out through a survey; the survey subjects were the management team (deputy department heads, department heads, and board of directors) in military firms in Vietnam.

The authors distributed 300 questionnaires through direct and online methods, collecting 275 questionnaires. After checking the information on the questionnaires, 235 questionnaires (78.33%) had sufficient information to enter data and perform analysis (see Table 2). This sample size is consistent with Gorsuch's (1983) study.

The authors used SPSS23 software with descriptive statistics, Cronbach's Alpha scale analysis, EFA analysis, and independent T-tests to evaluate and measure the quality of personnel via management's intellectual competence in army firms.

**Table 2: Respondents by genders and career seniority**

	Frequency	Percent	Cumulative Percent
<b>Genders</b>			
Female	111	47.2	47.2
Male	124	52.8	100.0
<b>Career seniority</b>			
Smaller than 5 years	44	18.7	18.7
From 5 to 10 years	134	57.0	75.7
10 years or higher	57	24.3	100.0
<b>Total</b>	235	100.0	

Source: Prepared by the authors (2024) and SPSS software.

Information on the data collected is shown in Table 2. It shows that among them, 111 are female, accounting for 47.2%; and the rest are male, accounting for 52.8%. Respondents have career seniority: smaller than 5 years accounted for 18.7%; from 5 to 10 years accounted for 57.0%; and the remaining accounted for 24.3%.

## RESULTS

### Descriptive statistics

**Table 3: Descriptive statistics explaining the quality of personnel via management's intellectual competence in army firms**

Code	N	Min	Max	Mean	Std. Deviation	Skewness		Kurtosis	
						Statistic	Std. Error	Statistic	Std. Error
QPMIC1	235	1.0	5.0	3.349	.7262	-.171	.159	.297	.316
QPMIC2	235	1.0	5.0	3.409	.7476	-.333	.159	.179	.316
QPMIC3	235	1.0	5.0	3.545	.8480	-.374	.159	-.113	.316
QPMIC4	235	1.0	5.0	3.043	.7941	.079	.159	.807	.316
QPMIC5	235	1.0	5.0	3.557	.8721	-.607	.159	.210	.316
Valid N (listwise)	235			<b>3.381</b>					

Source: Author's synthesis and from SPSS software

The statistical results from Table 3 show that the survey subjects agree with the variable that Quality of personnel via management's intellectual competence in army firms includes 5 component attributes as above, which is average, with an average value of 3.381 compared to the highest level of the 5-point Likerts scale. All 5 attributes are rated at an average level of 2.043 or higher.

### Cronbach's Alpha analysis results

The analysis of the quality of personnel via management's intellectual competence in army firms was performed using the Cronbach's alpha reliability coefficient. The results in Table 4 show that these attributes have Cronbach's alpha coefficients greater than 0.6 and the correlation coefficients of all attributes are greater than 0.3. Therefore, all attributes of quality of personnel via management's intellectual competence in army firms are statistically significant (Hoang Trong & Chu Nguyen Mong Ngoc, 2008; Hair et al., 2009; Hair et al., 2014).

**Table 4: Results of reliability analysis of scales through Cronbach's alpha coefficient**

	Cronbach's Alpha		N of Items	
	0.808		5	
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
QPMIC1	13.553	6.735	.473	.805
QPMIC2	13.494	6.593	.493	.800
QPMIC3	13.357	5.461	.723	.729
QPMIC4	13.860	6.207	.558	.782
QPMIC5	13.345	5.338	.731	.725

Source: Author's synthesis and from SPSS software.

### Results of exploratory factor analysis (EFA)

The component and variance analysis was used to perform exploratory factor analysis (EFA) in Table 5 and Table 6.

The KMO index is 0.817, greater than 0.5 (>0.5), according to the Bartlett test results used to test the hypothesis about the correlation between observed variables. The extracted variance is 56.737%, meaning that these five observed variables account for 56.737% of the variation in the data. The Bartlett test is statistically significant (Sig. <0.05). Therefore, it can be said that the study's indicators satisfy the requirements of EFA analysis (Hoang Trong & Chu Nguyen Mong Ngoc, 2008; Hair et al., 2009; Hair et al., 2014).

These statistics demonstrate that the analysis of research data to explore factors is appropriate. Through ensuring the quality of the scale and testing the EFA model, the author has identified five components of quality of personnel via management's intellectual competence in army firms (Hoang & Chu, 2008; Hair et al., 2009; Hair et al., 2014).

**Table 5: Results of exploratory factor analysis (EFA) (KMO and Bartlett's Test)**

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.817
Bartlett's Test of Sphericity	Approx. Chi-Square	380.898
	Df	10
	Sig.	.000

Source: Author's synthesis and from SPSS software.

**Table 6: Total variance explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.837	56.737	56.737	2.837	56.737	56.737
2	.754	15.079	71.817			
3	.622	12.438	84.254			
4	.493	9.863	94.117			
5	.294	5.883	100.000			

Source: Author's synthesis and from SPSS software.

**Table 7: Component matrix<sup>a</sup>**

	Component
<b>QPMIC</b>	<b>1</b>
QPMIC5	.859
QPMIC3	.852
QPMIC4	.723
QPMIC2	.662
QPMIC1	.642

Source: Author's synthesis and from SPSS software.

**Independent T-test: Genders**

A comparison of the results of the evaluation of the differences in the quality of personnel via management's intellectual competence in army firms with participants of different genders (male or female) can be seen in Table 8. According to the results shown in Table 8, sig Levene's test is 0.794, which is more than 0.05. The variance between male and female is not different. Moreover, the sig value t-test is 0.599, which is more than 0.05, which means that there is not a statistically significant difference in the quality of personnel via management's intellectual competence in the army between these different genders (Hoang & Chu, 2008; Hair et al., 2009; Hair et al., 2014).

**Table 7: Differences in the quality of personnel via management's intellectual competence in army firms with participants of different genders with participants of different genders-Independent Test**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
QPMIC	Equal variances assumed	.068	.794	-.526	233	.599	-.04144	.07872	-.19654	.11365
	Equal variances not assumed			-.528	232.269	.598	-.04144	.07848	-.19607	.11318

Source: Prepared by the authors (2024) and SPSS software.

## DISCUSSION

Intellectual competence plays a key role in determining the quality of human resources, directly affecting work performance and the ability of each individual to contribute to the organization.

**Professional competence:** Educational level, specialized knowledge, and professional skills are the foundation for workers to perform their jobs effectively. High intellectual capacity helps them quickly grasp job requirements, apply knowledge into practice, and solve arising problems.

**Thinking and creativity ability:** In an increasingly competitive and volatile economy, the ability to think critically, analyze information, and come up with creative solutions is extremely important. Highly intelligent workers not only perform well in their assigned tasks but can also propose improvements, optimize processes, and create added value for the organization.

**Problem-solving ability:** Difficult and complex situations are inevitable in the work process. Highly intelligent workers have the ability to look at problems from many angles, analyze causes, and come up with effective solutions, helping the organization overcome difficulties and achieve goals.

## IMPLICATIONS

Intellectual capacity is the most important factor determining the quality of human resources. Investing in intellectual development through internal training and fostering and creating a working environment that encourages creativity will help organizations build a team of capable employees, ready to face all challenges and contribute to the sustainable development of the organization.

Over the years, military enterprises have constantly innovated, strived to improve, boosted production and business, improved productivity, quality, and efficiency; participated in the country's economic development; closely linked with the implementation of military and defense tasks; and increasingly affirmed their role as the core force in solving difficult issues related to national defense, security, and socio-economic issues in strategic areas, border areas, islands, and exclusive economic zones of the Fatherland.

Under the leadership of the Party, along with performing well the functions of a combat army and a working army, our army has always actively and proactively performed the functions of a production labor army in many creative and appropriate forms and measures, ensuring a close combination between production, economic development, and national defense and security, and achieved important results, contributing significantly to the cause of building and defending the Fatherland.

In the process of implementation, the Party's viewpoint on combining the economy with national defense and national defense with the economy has been thoroughly grasped and creatively applied; the Party's guidelines and policies, the State's laws, and the Ministry of National Defense's regulations have been strictly followed. Socio-economic development, maintaining political stability, and strengthening national defense and security have been the top goals of production and business activities; production and business activities have been closely combined with the implementation of national defense and security tasks; attention has been paid to protecting resources and the environment, implementing sustainable development, and proactively integrating into the international economy. Military enterprises have promoted their internal strength, exploited all potentials, and increasingly deepened production and economic development activities associated with national defense and security.

According to Phan Thi Hoai Van (2020), the defense industry requires a highly qualified management and labor force: "In some other industrial fields, products do not require high sophistication, precision, novelty, and modernity, so they do not require a highly qualified workforce. The defense industry is a special industrial field, with the task of researching, developing, manufacturing, maintaining, majorly repairing, improving, and modernizing weapons, military technical equipment, technical supplies, and other products serving the country's defense, playing a special role, even a decisive role, in the success or failure of war and in protecting the Fatherland. Therefore, without a highly qualified workforce, it is impossible to complete the assigned tasks.

Military enterprises should clearly define policies, goals, plans, roadmaps, and implementation measures. At the same time, accelerate the completion of projects and plans for arrangement, innovation, equitization, organizational restructuring, and policies for employees; build leadership

mechanisms, party committee operations, and business management models; and use finance, assets, defense land, and strategic orientation for business development after innovation and restructuring.

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