

The Human Capital of Technicians in State University of Malang

Aditya Yudha Pratama, Didik Nurhadi

Graduate School of Vocational Education, State University of Malang, East Java, Indonesia

E-mail: aditya.yudha.fik@um.ac.id

Abstract. Agencies or companies' ability to create and develop strategies to advance depend on human capital. It receives public attention as tangible state assets, policies, and organizations and are described as the core vital forces in the professional world. It is essential because it provides companies with some new skills, opportunities, and even development. This study aims to describe the human capital (knowledge, competence, skill, and innovation) of the technicians in the State University of Malang using a survey research design. The population is the technicians in the State University of Malang. The result indicates that the human capital in the State University of Malang can be categorized as follows: 3.1% of the technicians are very positive (one technician), 31.3% are (ten technicians), 34.4% are average (11 technicians), 28.1% are negative (nine technicians), and 3.1% are very negative (one technician). It can be concluded that the human capital of the State University of Malang is average, which implies that not all the employees can perform well at work and meet the indicators; hence, the need for improvement.

Keywords: *Competence, human capital, innovation technician, knowledge, skills*

INTRODUCTION

The day-to-day operation of a company is reliant on the quality of its human resources (Frimayasa & Lawu, 2020). Human resources need to be managed so that it can be utilized in an effective and efficient manner and provide sustainable benefits for the organization. Human resources management seeks to transform the company's human capital into highly qualified employees which are able to perform the tasks and responsibilities that the company demands (Dalimunthe, 2018). Human capital originates from the idea that humans are intangible assets with numerous qualities necessitated to achieve success. Human capital is the motor or the system which runs the company or organization (Kasmawati, 2017), which grants it a crucial role as an important component that may affect the performance of an organization (Auliana, 2017).

A company's success is heavily affected by its human capital, namely its staff or employees. Employees are assets for a company selected to serve their ascribed positions. They are hired based on their experience and education and professional backgrounds (Dewi & Putar, 2020). They are expected to perform their tasks and fulfil their responsibilities well. They function as the important components and the driving force of a company's activities (Pratama, 2019). The success of a company or an institution stems from the effectivity and productivity of the employees in achieving the company's goals, not from conventional factors such as the image or the size of the company (Aliu & Aigbavoba, 2019). Thus, a company that wishes to achieve its targets and meet its needs should consider tapping into the employees' potentials to develop and maintain skilled workers.

One type of employees that can be found in many organizations is a technician. Similar to other employees, technicians have important contributions to the organizations in achieving their targets (Hanim et al., 2014). One key skill for a technician to have is creativity, which supports technical activities as well as thinking and problem-solving skill (Wibowo, 2013).

The State University of Malang, like any other organizations, strives to develop its human capital which includes 47 technicians currently employed by the university. These technicians are responsible for tasks related to computers and information technology such as (a) performing computer and internet network maintenance; (b) managing faculties' websites and subdomains; (c) supporting learning activities, seminars, and other online activities; and (d) managing computer laboratories.

Currently there is no data available regarding the human capital of the technicians in the State University of Malang. This complicates the effort to develop the human resources in the institutions. These efforts are often wide of the mark and fail to meet the needs of the university. This issue highlights the importance of conducting a study which focuses on the human capital of the technicians in the State University of Malang. This study hopes to provide information about the human capital of the technicians in the university so that the university can develop more effective programs to improve its facilities and service.

METHODS

This study uses descriptive approach which aims to provide a description or an account of an event. This is quantitative research which focuses on discovering facts that will be presented and measured with numbers. The numbers are then used to analyze the data. The design of this study is survey research which is intended to provide a description on the human capital of the technicians in the State University of Malang. The population of this study is 32 technicians employed by the various faculties in the State University of Malang. The instruments of the study can be found in Table 1 below:

Table 1. Research Instruments

Variable	Indicators	Question Item	Item No.
Technicians' human capital	Knowledge (Suryoningtyas, 2021; Han, Lin & Che, 2008)	Employee's work experience	1,2
		Job accountability	3,4
		Education level	5,6
		Employee's professional knowledge	7,8
	Competence (Suryoningtyas, 2021; Han, Lin & Che, 2008)	Employee's characteristics	9,10
		Employee's commitment	11,12,13,14
		Technology literacy	15,16
	Skill (Suryoningtyas, 2021; Han, Lin & Che, 2008)	Ability to communicate with the team	17,18,19
		Employee's cooperation	20,21
		Employee's skill	22,23,24
Innovation (Suryoningtyas, 2021; Han, Lin & Che, 2008)	Employee's creativity	25,26	
	Inventing new ideas	27,28	

RESULTS AND DISCUSSIONS

Figure 1 displays the quality of the human capital in the State University of Malang obtained from the survey:

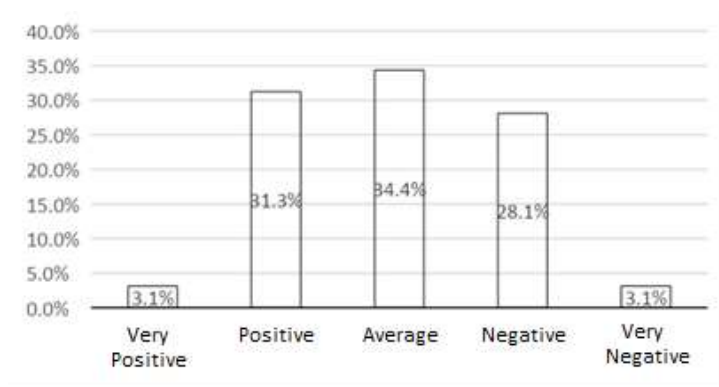


Figure 1. Research result

As shown in Figure 1, the human capital of the technicians in the State University of Malang can be classified into the following categories: 3.1% of the technicians are very positive (one technician), 31.3% are positive (ten technicians), 34.4% are average (eleven technicians), 28.1% are negative (nine technicians), and 3.1% are very negative (one technician). Based on this result, it can be concluded the human capital of half of the technicians in the State University of Malang are average. In this study, there are several indicators used to measure human capital. They are:

Knowledge

The knowledge indicator is measured using eight statement items as presented in Table 1.

Table 1. Knowledge indicator description

Interval	Category	Total	Percentage (%)
$X > 37.46$	Very positive	3	9.4
32.76 – 37.46	Positive	8	25.0
28.05 – 32.75	Average	11	34.4
23.35 – 28.04	Negative	8	25.0
$X < 23.35$	Very negative	2	6.3
Total		32	100.0

From the data in Table 1, based on the knowledge indicators, the human capital can be categorized as follows: 9.4% of the technicians are categorized as very positive (three technicians), 25% are positive (eight technicians), 34.4% are average (eleven technicians), 25% are negative (eight technicians), and 6.3% are very negative (two technicians).

Competence

The competence indicator is measured using eight statement items as presented in Table 2.

Table 2. Competence indicator description

Interval	Category	Total	Percentage (%)
$X > 40.75$	Very positive	0	0.0
36.71 – 40.75	Positive	13	40.6
32.67 – 36.70	Average	9	28.1
28.62 – 32.66	Negative	8	25.0
$X < 28.62$	Very negative	2	6.3
Total		32	100.0

From the data in Table 2, based on the competence indicators, the human capital of the technicians in the State University of Malang can be categorized as follows: none (0%) of the technicians is categorized as very positive, 40.6% are positive (thirteen technicians), 28.1% are average (nine technicians), 25% are negative (eight technicians), and 6.3% are very negative (two technicians).

Skills

The skill indicator is measured using eight statement items as presented in Table 3.

Table 3. Skill indicator description

Interval	Category	Total	Percentage (%)
$X > 41.78$	Very positive	0	0
36.45 – 41.78	Positive	11	34.4
31.12 – 36.44	Average	15	46.9
25.78 – 31.11	Negative	4	12.5
$X < 25.78$	Very negative	2	6.3
Total		32	100.0

From the data in Table 3, based on the competence indicators, the human capital can be categorized as follows: none (0%) of the technicians is categorized as very positive, 34.4% are positive (eleven technicians), 46.9% are average (fifteen technicians), 12.5% are negative (four technicians), and 6.3% are very negative (two technicians).

Innovation

The innovation indicator is measured using four statement items as presented in Table 4.

Table 4 Innovation indicator description

Interval	Category	Total	Percentage (%)
$X > 20.90$	Very positive	0	0
17.82 – 20.90	Positive	9	28.1
14.74 – 17.81	Average	15	46.9
11.66 – 14.73	Negative	6	18.8
$X < 11.66$	Very negative	2	6.3
	Total	32	100.0

From the data in Table 4, based on the innovation indicators, the human capital can be categorized as follows: none (0%) of the technicians is categorized as very positive, 28.1% are positive (nine technicians), 46.9% are average (fifteen technicians), 18.8% are negative (six technicians), and 6.3% are very negative (two technicians).

In general, based on the result of the study, the human capital of the technicians in the State University of Malang can be classified as average. This result implies that the human capital of the technicians in the State University of Malang is inadequate and falls short of the desired standards. This study goes further by measuring the human capital of the technicians with four indicators, namely (a) knowledge, (b) competence, (c) skill, and (d) innovation as stated in the previous part.

Based on the knowledge indicators, the human capital is categorized as average. The employees' work experience is categorized as positive, which contributes to their professionalism. This supports what Sinaga (2020) believed, that employees with work experience have the ability to optimize their productivity at work. Additionally, experience is often manifested in high adaptability and high contribution to the companies, which makes such employees valuable assets in developing a company (Frimayasa & Lawu, 2020). The job accountability of the employees is categorized as average, which indicates that the employees need to show more responsibility and improve their decision-making skill.

In addition to work experience and accountability, the education level of the employees is categorized as positive. This shows that the employees have necessary and adequate education to perform their roles and tasks in the organization. Pariasi et al. (2022) noted that employees with the right education qualification will do their job well and correctly. Rani et al. (2018) also mentioned that the professionalism of the employees is an important factor in an institution or organization. Professional employees will demonstrate their ability and expertise in performing their tasks which will improve their productivity and, consequently, produce maximum result. In conclusion, an employee's professionalism may be measured from their expertise and vast knowledge, self-confident, effectivity and efficiency, as well as the ability to work swiftly and thoroughly (Oroh et al., 2017).

Based on the competence indicators, the human capital is categorized as positive, which indicates that the employees have the expertise needed to perform their job and the drive to complete whatever tasks given to them. This is supported by Setiono (2016) who claimed that the positive characteristics of an employee is closely related to their performance. Besides characteristics, an employee's commitment is also crucial for their performance in an institution or organization. A committed employee shows commendable performance and loyalty to the company, supports company's policies, and has high work motivation and satisfaction. Conversely, lack of commitment from an employee will

negatively affect or endanger an institution or organization (Sembiring & Winarto, 2020). In regard to technology literacy, the employees are categorized as positive which means that they are adept in using applications to finish their tasks and keeping up with the latest technology to do their work. Fitriani (2018) pointed out that the use of technology improves employees' efficiency. Advanced technology has numerous benefits for companies and makes work easier (Pramada et al., 2016). If companies desire to reap those benefits and optimize their performance, they should match the technology to what they need and utilize it properly (Witara & Akmawati, 2020).

Based on the skill indicators, the human capital is categorized as average. Tailan et al. (2021) underlined that the communication skill of the employees may positively affect productivity. A team that builds strong communication shows strong performance in return. It is important that an employee can express their opinion clearly and coherently on the issues currently discussed to ensure that there is no misunderstanding or misinterpretation within the team (Natoil & Zulkifli, 2022). Additionally, companies also demand that their employees can collaborate well in order to develop and advance the institution or organization. Teamwork tends to produce higher quality of work compared to individual work (Setyawan et al., 2021). Ideally, employees should possess a set of skills which are relevant and vital so that they can perform well and contribute to the growth of an institution or organization (Wardani et al., 2022). Skilled employees are crucial in increasing productivity at work (Sumatika et al., 2021). These skills refer to the proficiency that the employees need to do their works according to their own respective areas of expertise which they gain through practice and experience (Parta & Mahayasa, 2021).

Based on the innovation indicators, the human capital is categorized as average. Most of the employees' creativity is categorized as positive and average, which indicates that not all employees show creativity in doing their work and they may not have enough creativity to improve their performance. Creativity is necessary to propose new ideas that can potentially bring competitive advantages for the company to guarantee that it stays ahead of its competitors. These ideas stem from the employees' cognitive characteristics and their creativity level (Hong et al., 2018). Employees are expected to use this creativity to develop new products or services (Lengkey et al., 2021). Creativity can be assessed not only from how employees innovate, but also from how they complete the tasks assigned to them (Andika et al., 2022). According to Dewi et al. (2018), innovation is connected to the conception of ideas, the promotion of ideas, and the implementation of ideas through new technologies and products. Hence, innovation should not stop at producing new ideas but to go further to realize those ideas and create something new, beneficial, and profitable. These ideas may be something original that comes from the employees or something that they modify (Hadi et al., 2020). While organizations generally accept the importance of innovation, some may suffer from lack of innovation which, in many cases, is rooted in poor leadership that eventually makes employees feel discouraged to create and implement new ideas.

CONCLUSION

An institution or organization operates by managing various resources from financial and physical resources to human resources as well as technological and systemic capability. Human capital is considered a strategic element due to the massive contribution that human resources management and performance have in creating competitive advantage. Human resources create competitive advantage by devising value strategies that the competitors do not have or cannot imitate. Companies that seek to succeed and improve their competitive edge should focus on indicators such as expertise, knowledge, skill, and behaviour and manage their human resources the same way they manage important assets through programs centered around employees' involvement, retention, and talent development and management.

As mentioned before, organizations gain sustainable advantages if they are buttressed by highly qualified human resources and such human capital can only be developed if employees in the organizations are adept and competitive. Organizations should invest in their employees and provide opportunities for them to improve their skills, experience, and productivity. These are investments which will benefit the organizations in the long run. To maximize the productivity and the benefits from such programs, the knowledge and expertise that the employees develop need to match the organizations' needs. At the same time, employees should use every opportunity provided by the organizations to improve their skills during their employment.

There are four indicators that can be used to assess human capital, which are (a) knowledge, (b) competence, (c) skill, and (d) innovation. Technical knowledge can be seen from employees' work experience and participation in trainings. Additionally, education qualification also determines the quality of human capital as well as the job accountability of the technicians which includes the ability to make decision, complete the tasks, and respond to changes in work environment. Technicians' competence may be assessed from their characteristics, commitment, and technology literacy. The skill of the technicians can be measured from their communication skill, the ability to collaborate, and expertise while the innovation can be seen from their creativity and new ideas.

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