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INTERRELATIONSHIP AMONG HUMAN, TECHNICAL, AND CONCEPTUAL SKILLS OF EMPLOYEES IN MALAYSIAN TELECOMMUNICATION INDUSTRY

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Information of Article	ABSTRACT
	This study's objective to find out the relationship between human, technical, and conceptual skills of employees in the telecommunication industry in Malaysia. The study used a quantitative methodology to provide primary data on the subject. This study applied a questionnaire method and 328 managers and employees working in the telecommunication sector in Malaysia, particularly in the capital city, Kuala Lumpur were the samples of this study. The study results show that human skills influence technical and conceptual skills; also, the technical skills influence conceptual skills. The theoretical based on the discussion for this study is based on Katz (1955) model, which have identified three dimensions of managerial skills that human, technical, and conceptual skills. Companies must provide specific training programs to train their employees in terms of helping them increase their human and technical skills that are needed for particular activities and operations.

1. Introduction

The human capital is considered as the main pillars of organizations today. Despite the urgent need for the human capital in different industries, but this need is constrained to the skilled labour that able to transform the organization through the new era changes and development. In this context, Malaysia country in general and the telecommunication industry, in particular, are looking forward to improving the country economic growth, which has been addressed by the government through adopting skilled brains (Mohamed, 2016). The mission of importing high skilled labour is too much cost and complicated. Telecommunication industry in Malaysia strived to improve its workforce through providing an extensive training program, and it would support its long term plan to achieve an advanced position within the Asian telecommunication industry (Krishnan, Liew, & Koon, 2016). The targeted training and developing a program for skills required in the telecommunication industry is needed to be designed to commensurate the expectation requirement of the market competition. Furthermore, this study aims to pave the main base that helps the telecommunication industry in identifying the most significant skills (human skills, technical skills, and conceptual skills) that must be adopted by these programs (Flin & Maran, 2015).

2. Telecommunication Industry

The telecommunications sector comprises companies that make communication possible on a global scale, whether it is through the phone or the Internet. These companies created an infrastructure that allows data to be sent anywhere in the world. The largest companies in the sector are wireless operators, satellite companies, cable companies and Internet service providers (Yusof, Ismail, & Rahim, 2016). The telecommunications sector is constantly transformed by being an essential catalyst for other industries. The increasing use of smartphones, along with new consumer habits and mass digitization, is changing market trends. In this context, telecommunications companies invest in equipment and networks that allow them to develop more and better services (Wong, Chandran, & Ng, 2016). In the new phase of development of knowledge capitalism that emerged from the eighties of the previous century, before the crisis of Fordism Keynesianism, knowledge has become the main productive force of economic growth. This translates into a notable increase in the knowledge content of social production since the same decade, a process that is expressed, for example, in the substantial increase in the number of patents granted (and consequently applied) in the economies of the countries advanced, particularly the United

States, Europe and Japan (Wahid & Mohd. Mustamil, 2017). The new phase of development arises from a new articulation between the scientific-educational sector (SC-E) and the whole of social production, which is expressed, for example, in the tendency to increase the number of scientific articles cited in the granted patents (in the US granted by the US Patent Trade Office (USPTO) the average increases from 0.5 to 3 from 1987 to 1998, a process that is also observed in patents granted in other important countries) (OECD, 2001). Thus, the cycle of knowledge, this is its production, circulation and accumulation, tends to affect and involve all areas of economic and social reproduction, which transcends scientific-educational institutions and companies and includes the emergence in society civil society of new formal and informal de facto economic and social institutions (the so-called knowledge communities). In this perspective, the technological revolution in computing and communications enables a leap in quality from the secular tendency of capitalism to the application of science and knowledge in social production (Lim, Yeo, Goh, & Koh, 2018), by making immediate articulation feasible and interactive SC-E and social production.

3.   Literature Review

The telecommunications sector comprises companies that make communication possible on a global scale, whether it is through the phone or the Internet. These companies created an infrastructure that allows data to be sent anywhere in the world. The largest companies in the sector are wireless operators, satellite companies, cable companies and Internet service providers (Petyim, Watanapa, Charoenkitkarn, & Archanainant, 2016). In the new phase of development of knowledge capitalism that emerged from the eighties of the previous century, before the crisis of Fordism Keynesianism, knowledge has become the main productive force of economic growth. This translates into a notable increase in the knowledge content of social production since the same decade, a process that is expressed, for example, in the substantial increase in the number of patents granted (and consequently applied) in the economies of the countries advanced, particularly the United States, Europe and Japan (Fuenfschilling & Truffer, 2014). A study conducted by the World Bank on the human skills of the labour market in Peru shows that employers demand high-performance workers but do not specify what skills are required for the performance of their duties. This shows that human skills in Peru are a subject to be developed but are increasingly attracting the interest of companies. Also, it is known that the human being develops these skills throughout life, so it is important an environment conducive to learning, which should be given mainly within the home and even school. In many cases, people could receive technical training to enrich their knowledge, but without the development of human skills, they will not have the sufficient capabilities to cover the level of performance that the market demands. The technical skills are an aptitude, mastery or technical skill identified with the field of workers, in the case of design or technique (Ermasova, Nguyen, Clark, & Ermasov, 2018). Technical skills or "hard skills" are connected regularly with the use of equipment, equipment identified with the work in an appropriate and competent manner, and additionally, all technical problems. It can be consulted and seen more effectively, as can be clearly seen with the exposed eye (Divleli & Ergun, 2015). Conceptual skills empower the improvement of fundamental abilities to control certain parts of life. They incorporate communication skills, useful literacy and self-direction skills. Conceptual skills are the reason for gaining the ability to control certain parts of life, for example, the understanding of unique thoughts, critical thinking, the understanding of relationships and the ways in which composite frames work. The conceptual skills incorporate communication skills, useful literacy and self-regulation skills within the idea of versatile behaviour. Katz (1955) organizes executives on three levels and combines the necessary skills they must have according to their importance. Name the operational, intermediate and institutional levels and the degree demanded by skill changes according to the requirement of the functions. The author indicates that in the case of the operational level the predominance of technical skills is required because the responsibilities of that level demand a highly specialized staff; therefore these skills help the collaborators to be able to efficiently develop the particular skills of work. Regarding the category of intermediate executive, it is sought that human skills are highly developed because they are responsible for the management of their areas (Worth, 2018). Thanks to these skills, executives are able to motivate their staff and achieve optimal results from the synergy of their team. In the case of executives at the institutional level, the conceptual skills are the most required for the success of the company. They make strategic decisions to define the direction of the company. Therefore the conceptual skills developed throughout their work trajectory give them the ability to recognize the interrelation of environmental factors and allow them to make sound decisions for the maximization of value of the organization (Griffith, Baur, & Buckley, 2018). Although for each level, the writer highlights a skill, these are not exclusive but complement each other and in the combination is the secret of the success of every executive. The presence of human skills along the entire executive path is evident, which demonstrates the importance of adequately relating in any business context.

4. Methodology

In this study, the survey instrument is used to collect the data. Primary data collected through a survey questionnaire, the questionnaire is attached in the appendices section. The quantitative research method adopted to examine the research questions. The reliability test used to assess the primary data reliability, while the descriptive statistics used to clarify the characteristics. The population of this study is represented by the total employees of the telecommunication sector in Malaysia, the total employees of the sector are 50,800 people employed, which includes many departments that responsible for managing and operating the telecommunication sector. This number of population was estimated based on the governmental study issued in 2013. This was the only update available. So the population of the current study is all the owners, managers, and employees for the telecommunication sector in Malaysia. The samples for this study will randomly select based on the random sampling method. The sample for this study is 328 managers and employees working in the telecommunication sector in Malaysia. The sample determination size relied on the optimal sample size equation of Krejcie and Morgan (1970).. The respondents to the questionnaire are requested to do Likert five points scale that is used for this part as follow: strongly disagree, disagree, neutral, agree, and strongly agree. The questions were adopted from Northouse (2018). For the purpose of analyzing the primary data, SPSS software version 23 is utilized to conduct the required tests. The descriptive analysis is used to determine the level of each variable in term of mean and standard deviation. Meanwhile, the correlation test is used to examine the relationship between the research variables, which are human skills, technical skills, and conceptual skills.

5. Data Analysis And Results

The first examination is applied to the feedback of the questionnaires from participants. The main reason for this examination is to make sure that a random sampling method was utilized in distributing the questionnaires to the participants of the research by ensuring that all the participants have come from different backgrounds. In this research, there were five characteristics for the respondents' profile questions, which are gender, age, educational level, job position, and experience. The respondents' gender characteristic had two categories, which are male and female. The obtained results are showing the followings: Male characteristic had 80.8% with n=265 respondents. The age characteristic had five key categories, which are the from 18 to 25 years old, from 26 to 30 years old, from 31 to 35 years old, from 36 to 40 years old, and above 40 years old. The acquired results are showing the followings: From 18 to 25 years old category had 10.1% with n=33 respondents. From 26 to 30 years old category had 26.8% with n=88 respondents. From 31 to 35 years old category had 21.3% with n=70 respondents. From 36 to 40 years old category had 31.1% with n=102 respondents. Above 40 years old category had 10.7% with n=35 respondents. Female characteristic had 19.2% with n=63 respondents. The educational level characteristic had five key categories, which are the Diploma, Bachelor, Master, PhD, and Others. The acquired results are showing the followings: The Diploma category had 16.5% with n=54 respondents. The Bachelor category had 63.4% with n=208 respondents. The Master category had 6.7% with n=22 respondents. The PhD category had 9.8% with n=32 respondents. The other category had 3.7% with n=12 respondents. The job position characteristic had four key categories, which are the Top, Middle, Operational, and Others. The acquired results are showing the followings: The Top category had 25.3% with n=83 respondents. The Middle category had 42.4% with n=139 respondents. The Operational category had 30.5% with n=100 respondents. The other category had 1.8% with n=6 respondents. The experience characteristic had three key categories, which are from 1 to 3 years, from 4 to 6 years, and from 7 and above years. The acquired results are showing the followings: From 1 to 3 years category had 9.1% with n=30 respondents. From 4 to 6 years category had 66.8% with n=219 respondents. From 7 and above years, category had 24.1% with n=79 respondents.

Table 1: Respondents profile

Gender	Frequency	Percent
Male	265	80.8
Female	63	19.2
Total	328	100.0

Education level	Frequency	Percent
Diploma	54	16.5
Bachelor	208	63.4
Master	22	6.7
PH.D	32	9.8
Others	12	3.7
Total	328	100.0

Age	Frequency	Percent
18-25 yrs	33	10.1

26-30 yrs	88	26.8
31- 35 yrs	70	21.3
36- 40 yrs	102	31.1
> 40 years	35	10.7
Total	328	100.0

Job position	Frequency	Percent
Top	83	25.3
Middle	139	42.4
Operational	100	30.5
Other	6	1.8
Total	328	100.0

Experience	Frequency	Per cent
1 to 3	30	9.1
4 to 6	219	66.8
7 and above	79	24.1
Total	328	100.0

The second test was done on the feedback from the pilot test that was distributed to a certain number of samples. This examination was applied to find out whether the questionnaire items (questions and statements) are clear enough and valid to be distributed to the study's samples. The measurement used in this test was the Cronbach Alpha; if the Cronbach Alpha result is above 0.7 then the items are reliable and valid to be distributed to the study's samples. The following table 2 shows the results for the reliability test, followed by a brief explanation of the results.

Table 2: Reliability test

Constructs	Items	Cronbach Alpha
Human skills	6	0.839
Technical skills	6	0.808
Conceptual skills	6	0.735

The correlation test is the most important test for this type of study. This study does not measure the impacts of an independent variable to a dependent variable; this study relies on finding out the relationships between the variables. This study aims to find out three relationships, which are the relationship between human skills and technical skills, the second is the relationship of human skills and conceptual skills, and the last one is the relationship between technical skills and conceptual skills. The main purpose of this correlation test is to find out whether the research hypotheses are supported or not. The following table 3 shows the obtained results followed by a brief explanation regarding the obtained results. According to table 3, the research hypotheses are all supported where there were positive and significant relationships found between the study's variables. The correlation test has come up with the following conclusions: There is a positive and significant relationship between the human skills and technical skills, where correlation ($P \leq 0.01$), taking note that ($r=0.567$). There is a positive and significant relationship between human skills and conceptual skills, where correlation ($P \leq 0.01$), taking note that ($r=0.389$). There is a positive and significant relationship between technical skills and conceptual skills, where correlation ($P \leq 0.01$), taking note that ($r=0.336$).

Table 3: Correlation Coefficients

		HS	TS	CS
HS	Pearson Correlation	1		
	Sig. (2-tailed)			
TS	Pearson Correlation	.567[**]	1	
	Sig. (2-tailed)	.000		
CS	Pearson Correlation	.389[**]	.336[**]	1

Sig. (2-tailed)	.000	.000	
**. Correlation is significant at the 0.01 level (2-tailed).			

According to the current study, the study tested three types of relationships, which are the relationship between human skills and technical skills, the relationship between human skills and conceptual skills, and the relationship between technical skills and conceptual skills. The mean score for the variables human skills, Technical skills, and conceptual skills variables were 3.46, 3.40, and 3.61, respectively. The results are showing that respondents' perceptions towards the variables were on average agreed with the statements regarding the role of human skills, Technical skills, and conceptual skills in increasing organizational performance, effectiveness, innovation, creativity, and the quality of telecommunication sector in Malaysia. Therefore, the respondents in the study have emphasized the implication of human skills, Technical skills, and conceptual skills in enhancing the employees' performance in telecommunication companies, which leads to improving the overall operations and services in the telecommunication sector. Furthermore, the standard deviations for the subscale variables (human skills, Technical skills, and conceptual skills) were 0.79, 0.79, and 0.60, respectively. The study also confirmed that all the tested relations had positive and significant relationships. Table 4 shows the hypotheses testing results.

Table 4: The Hypotheses Testing Results

Hypothesis		P Value	Result
Human Skills	Technical Skills	0. 567	Supported
Human Skills	Conceptual Skills	0. 389	Supported
Technical Skills	Conceptual Skills	0.336	Supported

6. Conclusion

Managerial skills are considered to be one of the famous fields of studies due to the important role that it plays in any organization operating in an industry. Different tasks and activities may require different skills for the performer of that particular task or activity. The human capital is considered as the main pillars of organizations today. Despite the urgent need for the human capital in different industries, but this need is constrained to the skilled labour that able to transform the organization through the new era changes and development. In this context, Malaysia country in general and the telecommunication industry, in particular, are looking forward to improving the country economic growth, which has been addressed by the government through adopting skilled brains (Mohamed, 2016).

The mission of importing high skilled labour is too much cost and complicated. Telecommunication industry in Malaysia strived to improve its workforce through providing an extensive training program, it would support its long term plan to achieve an advanced position within the Asian telecommunication industry (Krishnan et al., 2016). The targeted training and developing a program for skills required in the telecommunication industry is needed to be designed to commensurate the expectation requirement of the market competition. Furthermore, this study aims to pave the main base that helps the telecommunication industry in identifying the most significant skills (human skills, technical skills, and conceptual skills) that must be adopted by these programs. This research aimed to study and analyze the relationships between the three types of managerial skills that are required in the Malaysian telecommunication industry. The research has proved three hypotheses which are the relationship between human skills and technical skills, the relationship between human skills and conceptual skills, and the relationship between technical skills and conceptual skills. This research was conducted in the telecommunication industry in Malaysia, where the population was all the employees and managers in telecommunication companies in Malaysia, and the samples were 328 employees and managers who were chosen based on the random sampling method from telecommunication companies in Kuala Lumpur, the capital city for Malaysia. The research was conducted in a quantitative approach to provide primary data with accurate results. The results obtained from this research were supporting the hypotheses of the research.

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