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JOB-RELATED SKILLS AND ITS RELATIONSHIPS WITH THE BIG-5 PERSONALITY TRAITS IN THE INDUSTRIAL REVOLUTION 4.0: A STUDY FOCUSED ON ARTS AND SCIENCE STUDENTS' PERSPECTIVES

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Abstract: *This study focuses on the relationship between seven job-related skills (intrapersonal, interpersonal, computing, entrepreneurship, management, personal organization & leadership) with the big-five traits personality (i.e., openness, conscientiousness, extroversion, agreeableness & emotional stability) and the four job-related skills (creativity, communication, critical thinking & collaboration) suggested in the Fourth Industrial Revolution (4IR). The study also explored the difference between Arts and Science university students in perceiving the importance of the 13 interview attributes. A questionnaire which consists of five parts; Part A; Demographic variables, Part B: seven job-related skills by adapting the Employability questionnaires from Goldsmith's soft skills inventory; Part C; Job-related skills of the 4IR; Part D: the Big-5 traits personality and Part E: The 13 interview attributes were used. Altogether 386 (Arts=251 and Science=135) final year university students from various faculties took part in this study. The results showed positive and significant relationships between the two personality traits i.e. Openness and conscientiousness with each of seven job-related skills and four elements of job-related skills in the 4IR. Agreeableness as a personality trait only showed a positive correlation with the four job-related skills (i.e., interpersonal, intrapersonal, computing & management) and four job-skills in the 4IR. While the extraversion personality traits correlated positively with three elements in job-related skills (i.e., intrapersonal, management & personal organization) and one element in the 4R (i.e., critical*

thinking). For the emotional stability personality trait, it correlated positively with intrapersonal, management and personal organization and three job-related skills in 4IR (i.e., critical thinking, communication & collaboration). As for interview attributes, Arts students perceived individual attitude, attitude towards work, behavioural aspects and verbal skills, while Science students perceived personal engagement, value addition to company and entrepreneurship skills as most important. Apart from giving insights about employability challenges in 4IR, the research findings can also help to enhance understanding among university students and organizations regarding the relationships between job-related skills and students' personality traits as well as the difference in perception among Arts and Science students with regard to 13 interview attributes.

Keywords: personality traits, job-related skills, interview attributes.

1. Introduction

In today's job market, one of the major concerns among university students, particularly the final year students is to be employed and to gain a better job. The rates of unemployability and high competition in entering the workplace market among graduates raise great worries among university students. The new graduates are struggling to enter the workplace market because of high competition in the job market (Tanius, 2018). As students approach graduation, a time when choices about their future needs to be made, there is a drop in confidence among them (Stoner & Milner,2010). Qenani, MacDougall, and Sexton (2014) stated that students are increasingly less confident in their employability as they progress through their time at university, attributing this to 'the fact that the prospect of looking for a job becomes more immediate and the uncertainty of finding one more apparent as they get closer to entering the labor market after university' (Qenani et al.,2014 p. 210). The transition from education world to world of work represent the realization of students' career aspiration and the opportunity to embark a career of choice that will provide them financial security for their lives (Chung, Ching, Cheok, & Hill, 2015).

In referring to Malaysian youth scenario including university students, the Institute for Youth Research Malaysia (2018) perceived youth as a key asset in determining the direction and success of the country towards a high-income nation by 2020. The economic factors such as employability are one of the factors that may contribute to the success of Malaysia in achieving a high-income nation (Institute for Youth Research Malaysia (IYRES), 2018). The employability issue has raised concerns among graduates; industries; relevant authorities, such as the Ministry of Higher Education; and universities. Graduates' hope and expectation to gain a better future career based on their academic degree might be tumble-down because of the limited and stricken job opportunity. This may force them to conduct a job that is mismatched with their degree. There is around 30,000 graduate work in a field that did not match with their qualifications (Hossain et al.,2018). Graduates who have different majors want to get a job at the same time, their job searching can have different outcomes depending on the demands of the market.

Besides, the high job competition and unmatched job with students' qualifications, the other major concerns among university students is to instill job-related skills such as leadership, teamwork, communication, critical thinking, and problem-solving which are taken into consideration by the industry and employers when hiring employees. In regard to the point view of employers in the industry, today's graduates are lacking the relevant skills and qualifications to meet industry needs, particularly communication and problem-solving skills (Rahmah et al. 2011). University students may derive the job-related skills from various sources such as training programs, community work, academic learning and experiential learning which are provided by the university and other organizations. In this new era, university students might have different perceptions in perceiving the role of job-related skills and the importance of interview attributes such as attitude towards work, leadership, verbal skills and social competence in hunting a job.

Although in today's digital economy, employees with digital skills are in demand, soft skills are also an important requirement in recruiting employees (Sani, 2019). Graduates' greatest challenge in finding a job is they must ensure they are well prepared to compete with other graduates who are more qualified, not only in academics but also in non-academic skills. Past studies (e.g. Cai, 2012; Bui & Porter, 2010; Nikitina & Furuoka,2012) revealed that soft skills, such as the ability to adapt to the work environment, a proactive attitude and a willingness to learn new things, are some traits that graduates should be considered. Based on a review of Jobstreet.com most graduates are unable to land a job because of poor communication skills and poor attitudes and personalities (Sabah Daily Express, 2017).

2. Literature Review

Past studies (e.g., Cai, 2012; Bui & Porter,2010; Thomson,2016) have revealed that soft skills and academic skills are elements that contribute to employability. A person who has achieved good academic results will be even more successful if they have good soft skills. Yorke (2006) stated that although the achievement of good academic qualifications is highly valued, it no longer appears sufficient to secure employment. Most industries prefer to hire graduates that are good in both departments. For example, to become a good engineer, one must be able to create an effective work team that can help him to accomplish a task or goal (Cimatti, 2016).

The World Economic Forum (Thomson, 2016) revealed that 35% of skills highlighted by the industry might change five years from now. Nowadays, the job market has changed, and graduates need to be more focused on learning the new skills required by the industry. In the Fourth Industrial Revolution, graduates need to embrace four elements to ensure they have met industry needs: critical thinking ability, problem-solving skills, collaboration and communicating effectively (National Education Association, 2012). Therefore, graduates today need to cultivate job-related skills to ensure they can compete in the job market. Job-related skills are the attributes that help workers adapt to new jobs, overcome obstacles, develop productive relationships with their co-workers and supervisors, and thrive in the workplace (Appleby, 2017).

Communication skills, teamwork, problem-solving and decision-making skills, planning, and organization skills writing, and computer skills, analysis, and data processing skills and information processing skills are important elements that may help graduates to get jobs (Chinotti, 2015). A study by Chamorro-Premuzic, Arteche, Bremner, Greven, and Furnham (2010) revealed that university students should have non-academic skills instilled in them, such as teamwork and emotional intelligence, which may help them in their future careers. Academic qualifications are not the only factor for helping graduates to join the work market (Yorke, 2006).

Higdon (2016) study revealed that many undergraduates and graduates perceive the employability model as incongruent and disingenuous to their experiences in gaining and sustaining work. The research participants argue that many careers are not about accessing skills acquisition but are more about accessing the inner circles within the industry and gaining access to the gatekeepers of potential work opportunities. A study by Beaumont, Gedye, and Richardson (2016) examined Marine Sport students' perception of their own employability and their confidence in gaining graduate employment after they have had careers education embedded within their programs. In this study, Beaumont et al. (2016) found that graduates perceived that possessing a degree is merely a pre-requisite for their employment, they must also deliver other 'value-added' experience, skills, and qualities.

Besides job-related skills, personality traits also played a role and may be related to job-related skills. For instance, referring to the big-5 traits personality, people high in conscientiousness are likely to be successful in school and in their careers, to excel in leadership positions, and to doggedly pursue their goals with determination and forethought (Lebowitz, 2016). Conscientiousness is also the only personality trait correlated with work performance across a range of performance measures (Barrick, Mount & Judge, 2001). While for Openness people, they are strong and creative leaders and tend to come up with the next big innovation (Ackerman, 2019). For agreeable people, they often display good deeds in the workplace such as helping and form good relationships. In regard to extraversion traits, Envick and Langford (2000), found that entrepreneurs were less extraverted. Other Big-5 personality traits such as emotional stability was also correlated with some elements of job-related skills such as leadership, creativity, personal organization.

The correlation of personality and the job-related skills were revealed in past studies; (e.g., Silvia et al.,2009) found that openness to experience had a medium correlation with self-perceived general creativity, and (e.g., Barrick & Mount, 1991) found that consciousness trait related to performance criteria across occupational groups. This showed that the personality of employees is important to make sure the organization can accomplish the process and activities successfully (Youshan & Hassan, 2015).

In regard to the difference between Arts and Science final year students in perceiving the importance of job-related skills, according to Mohd Emran and Abdul Rahman (2013), a majority of science students are not involved in science careers. It is common to see former science students pursuing careers in sales and marketing, administration, and other non-science professions. On the other hand, Arts students cannot build a career in science as science-related professions require in-depth technical knowledge that is not in any of the art syllabi. In addition, Science students focus on developing technical skills, while Arts students enhance soft skills among individuals (Tyson, 2013). This may affect Science and Arts student's way to perceive the level of importance of interview attributes which will be examined in this study.

2.1 Problem Statement

The employability issue has raised concerns among graduates regardless of their programs. The Department of Statistics Malaysia (2011) found that the unemployment rate in Malaysia increased from 3.2% in 2007 to 3.7% in 2009 (Hanapi & Nordin, 2014). Meanwhile, in Sabah, according to Othman Abdullah, the number of fresh graduates without jobs remains high (Sabah Daily Express, 2017). The Department of Statistics Malaysia stated that Sabah's unemployment rate in 2015 stood at 5% and increased to 5.4% in 2016 (Star online, 2017). There are 54,103 graduates in total were unemployed after they completed their studies in 2016. The highest numbers of unemployed were graduates from business administration, applied science, human resource management, accounting, arts and social science programmes. This is based on the Graduands Detection Survey System (Borneo Post,2017).

People attend the university with the hope of attaining a good job with a good salary. In comparison to today's graduates, it was easier for graduates to get a job in the past. Was this because they had potential skills such as proactive attitude and communication and problem-solving skills that could help them adapt to the work environment or their personalities? In today's job market, the greatest challenge for graduates is finding a job; they must ensure they are well prepared to compete with other graduates who are more qualified, not only in academic but also in non-academic skills. Based on a review of Jobstreet.com most graduates are unable to land a job because of poor communication skills and poor attitudes and personalities (Sabah Daily Express, 2017).

The World Economic Forum, a study conducted among 900 companies from across the country, found that such traits as teamwork, knowledge in digital gadgets, an understanding of rules and regulations, responsibility and commitment to work are elements relevant to future employability (Thomson, 2016). According to Regier (2011), academically successful graduates find it easier to get a job, and they tend to have high self-esteem and self-confidence. However, in today's world industry, good academic qualification is not the only factor that contributes to the employability of graduates. Most industries prefer to hire graduates that are good in both departments. For example, to become a good engineer, one must be able to create an effective work team that can help him to accomplish a task or goal (Cimatti, 2016).

Different opinions regarding which employability skills need to be given priority can be addressed by examining the perception gap towards employability that exists between graduates and the industry. Reports from different organizations have shown a slight difference in the important attributes that need to be given priority in the job market (Kember, Leung, & Rosa, 2007). Therefore, there is a need to conduct a study to examine the difference between the perceptions of graduates and employers regarding job-related skills and their effects on graduate employability in the Fourth Industrial Revolution. To support the industries, authorities and university students in understanding the employability issues among university students, a study was conducted focusing on final year students on their perceptions pertaining to job-related skills and their relationships with the big-5 trait personality. In addition, the study also interested to examine the comparison between Arts and Science final year students in perceiving the importance of 13 interview attributes in gaining a future job.

3. Method

A survey research design was conducted to collect research data, administering both online and paper surveys among final year students from both Arts and Science stream of University Malaysia Sabah. The online survey was used to reach out to final year students from other Universiti Malaysia Sabah branches located in Labuan and Sandakan districts

3.1 Materials

A questionnaire consisting of five parts was used in this study.

Part A: Demographic profiles

This part measure participants demographic background such as faculty and programme, year of graduation, work experience, age, gender, duration of the first job and current job.

Part B: Seven elements of job-related skills.

The research question is adapted from Goldsmith's soft skills inventory (Chamorro-Premuzic et al., 2010). Participants assessed their perceptions of the importance of job-related skills, namely, interpersonal (12 items), intrapersonal (8 items), computing skills (9 items), entrepreneual skills (9 items), management skills (10 items), personal organization (8 items) and leadership (5 items). The response scale is from 1 'very unimportant' to 5 'very important'. Overall there are 61 items used to measure the job-related skills.

Part C: Four job-related skills of the Fourth Revolution Industry

There are four items measured (i.e., communication, critical thinking creativity & collaboration). Participants were rated on a 5-point Likert-type scale (ranging from 1 = 'very unimportant' to 5 = 'very important'). The items were created by referring to the four dimensions of the Fourth Industrial Revolution that discussed in past studies (e.g., Bektheshi, 2017; Lamb & Doeche, 2017; Guo, 2016).

Part D: Ten Item Personality Traits

The TIPT is a 10-item measure of the Big Five (or Five-factor model) dimension which was created by Gosling, Rentfrow and Swann (2003). The scale response for this questionnaire is from 1 'strongly disagree' to 7 'strongly agree'. The sample items are 'I see myself as extroverted and enthusiastic,' and 'I see myself as anxious, easily upset. There are five items need to be reversed score (item number 2,4,6,8 and 10).

Part E: Interview attributes

This scale was adapted from Ramisetty and Desai (2017) and Chamrro-Premuzic et al., 2010). There are 13 items and the response is scale from 1 'least important' to 6 'most important'. Sample interview attributes are 'social competence', 'presentability of the person','attitudes towards work', and 'knowledge about the company'.

3.1.1 Samples

Final year students pursuing a bachelor's degree in the university were the target of this study. They were selected based on criteria suggested by Cohen (1988) for each item on the scale. Ten participants will be allocated for each item, and the total number of items for all scales is 36, multiplied by 10 participants. Participation was completely voluntary, anonymous, and confidential and they were informed that their results will be kept for research and publication purposes.

3.1.2 Site

Participants came from various faculties in University Malaysia Sabah and branchers (i.e. Labuan and Sandakan). Participants were chosen based on purposive sampling, which includes the criteria of final year students and those who were known to fit the criteria were invited to join the study by sending the link to their email, Facebook, and WhatsApp or approaching them one-on-one basis. Participants were approached in different areas where they tend to gather such as outside the library, faculties, outside the lecture hall and café.

3.1.3 Procedures

Each participant was provided brief information of the study and was informed that all data are anonymous and confidential. This is to ensure the participants give accurate data and be more accountable in giving their responses. According to Sharma (2017), one of the factors that may affect participants to be less accountable and compromising on the quality of responses was not provided information (2017). Participants who responded online were also given brief research information in the front cover page of the online form. Each participant answered a set of questionnaires which consists of five parts and this took approximately 15-20 minutes to complete.

3.2 Measurement

Once data were collected and keyed-in in SPSS 24, data screening was conducted to check the data normality before the descriptive and inferential analyses were run. The pilot study was conducted earlier to check the reliability and validity of each questionnaire used in this study. In the actual study, there were 401 participants completed the study. However, 15 outlier's data from participants were excluded. Therefore, they are only 386 participants were included in the final analysis. Table 1 showed the value for skewness and kurtosis before and after the outlier data were excluded.

Table 1: Skewness and kurtosis for each variable before and after outliers have been removed

	15 id remove		Before ID remove (401 participants)		After ID remove (386 participants)	
Variables	ID removed (number of item)	Score	skewness	Kurtosis	Skewness	Kurtosis
Attribute interview	344,363,364 ,388 389 281,282	33 35	-1.46	4.08	-.66	1.21
Interpersonal			-.42	-.59	-.46	-.52
Intrapersonal			-.50	-.25	-.54	-.23
Computing			-.72	.15	-.72	.24
Enterprise	373,297,328	18	-1.15	2.44	-.66	1.87
Management					-.80	.39
Personal organization	388,389 363.364	20 21	-1.30	2.31	-.90	.69
Leadership			-.83	.70	-.78	.52
Attitude towards ethics			-1.09	1.08	-.99	.95
Collaboration	227	10	-1.36	3.90	-.90	.69
Thinking	257,288,370 ,319	11	-1.35	2.08	-1.25	1.83
Extraversion			.28	-.45	.27	.38
Agreeableness			=.24	-.74	-.21	-.72
Conscientiousness			-.50	-.32	-.53	-.21
Emotion			.15	-.14	.12	-.07
Openness			.00	-.91	.01	-.87

3.3 Data Analysis

3.3.1 Validity and Reliability

Table 2 showed the internal consistency of each variable. The reliability values ranged from .60 to .91.

Table 2: The Internal Consistency of each Scale (N=386)

Scales	Number of items	Reliability values
Interview attributes	.85	13
Interpersonal	.89	12
Intrapersonal	.83	8
Computing	.86	9
Enterprise	.91	9
Management	.89	10
Personal	.88	9
Leadership	.84	5
Creativity	.87	6
Communication	.90	16
Thinking	.96	8
Collaboration	.92	9
Personality	.70	10

4. Results and Discussion

4.1 Results

Based on the demographic results, it showed that there are 386 final year university students who took part in this study, comprised of Arts students, 251 (65%) and Science students, 135 (35%) from different faculties. A majority of participants are female, 272 (70.50%) and male, 113 (29.30%) and 1 (0.30%) did not mention the gender. In terms of ethnicity, a majority are among the Sabah indigenous people, 189 (49%), followed by Malay, 122 (31.60%), Chinese, 34 (8.80%), Sarawak indigenous people, 20 (5.20%), India, 14 (14%) and the remaining is from another group of ethnicities For the academic achievement level, it is measured based on students' Cumulative Grade Point Average (CGPA). There are 15 students in the first-class category, 215 (55.70%) under second class upper and 148 (38.30%) categorized under the second class lower. Eight students did not reveal their CGPA.

Table 3: The Demographic Profile of Participants (N=386)

Variables	Number	Percentage
Gender		
Male	113	29.30
Female	272	70.50
Missing values	1	0.30
Type of faculty		
Arts	251	65.00
Science	135	35.00

Science faculties		
Faculty of Engineering	63	16.30
Faculty of Food Science	34	8.80
Faculty of Natural Resources	33	8.50
Faculty of Computer and Informatics	4	1.0
Faculty of Agriculture	1	0.30
Science		
Faculty of Psychology and Education	176	45.60
Faculty of Arts and Heritage	23	6.0
Faculty of Economy	52	13.5
Ethnicity		
Indigenous People of Sabah (Kadazandusuns, Bajau, Murut, Rungus, Kedayan, Brunei, Bisaya, Iranun, Bugis)	189	49.00
Indigenous people of Sarawak (Iban, Bidayuh)	20	5.20
Malay	122	31.60
Chinese	34	8.80
India	14	3.60
Others (Siamese, Toraja)	4	1.0
Missing values	3	0.80
Cumulative Grade Point Average (CGPA)		
First Class (3.67-4.00)	15	3.90
Second Class Upper (3.00-3.66)	215	55.70
Second Class Lower (2.00-2.99)	148	38.30
Missing values	8	2.10

Table 4: The correlation between each personality trait with each component for employability skills (N=386)

Employability skills	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Personality Traits				*r values*			
Extraversion	.09	**.12***	.06	.05	**.13***	**.11***	.07
Agreeableness	**.20***	**.17***	**.12***	.01	**.14***	.17	.06
Conscientiousness	**.21***	**.22***	**.23***	**.11***	**.17***	**.31***	**.15***
Emotional stability	.08	**.16***	.06	.06	**.12***	**.12***	.06
Openness	**.30***	**.26***	**.26***	**.20***	**.22***	**.28***	**.16***

Note:1 Interpersonal; 2 Intrapersonal; 3 Computing; 4 Enterpreneurship, 5 Management, 6 Personal; 7 Leadership

The results showed positive and significant relationships between the two personality traits i.e. Openness and conscientiousness with each of seven job-related skills and four job-related skills in the 4IR. Agreeableness as a personality trait only showed a positive correlation with the four job-related skills (i.e., interpersonal, intrapersonal, computing & management) and four job-skills in the 4IR. While the extraversion personality traits correlated positively with three job-related skills (i.e., intrapersonal, management & personal organization and critical thinking). For emotional stability traits, it correlated positively with intrapersonal, management and personal organization and three job-related skills in 4IR (i.e., critical thinking, communication & collaboration).

Table 4: The Correlation between Each Personality Trait with Each Component for the Fourth Industrial Revolution (N=386)

Employability skills	**1**	**2**	**3**	**4**
Personality Traits	*r values*			
	1	2	3	4
Extraversion	.03	.06	.12*	.05
Agreeableness	.13*	.12*	.27*	.25*
Conscientiousness	.13*	.10	.25*	.27*
Emotional stability	.06	.12*	.16*	.14*
Openness	.27*	.20*	.24*	.28*

Note:1 Creativity; 2 Communication; 3 Critical thinking & 4 Collaboration

As for interview attributes, Arts students perceived individual attitude, attitude towards work, behavioral aspects and verbal skills as more important that the Science students. While for Science students perceived personal engagement, value addition to company and entrepreneurship skills as more important compared to Arts students.

Table 6: The Difference between Arts and Science final year students in perceiving the 13 important of attribute interviews

Attribute Interviews	Faculty	N	Mean	SD	t value	Sig
B1: Individual attitude	Arts	251	4.53	.60	2.84	.00
	Science	135	4.33	.67		
B2: Attitude towards Work	Arts	251	4.50	.54	3.03	.00
	Science	135	4.30	.65		
B3: Behavioural aspects	Arts	251	4.57	.87	2.08	.04
	Science	135	4.45	.70		
B4: Personal engagement	Arts	251	4.21	.70	-3.53	.00
	Science	135	4.44	.60		
B5: value addition to the Company	Arts	251	4.22	.70	-2.74	.00
	Science	135	4.41	.60		
B6: Entrepreneurship skills	Arts	251	3.86	.80	-4.09	.00
	Science	135	4.17	.66		
B7: Professional competence	Arts	251	4.40	.66	-1.22	.22
	Science	135	4.48	.57		
B8: Knowledge about the Company	Arts	251	4.24	.70	-.36	.72
	Science	135	4.26	.57		
B9: Leadership and managerial skills	Arts	251	4.44	.66	-.96	.34
	Science	135	4.50	.57		
B10: Presentability of the Person	Arts	251	4.53	.75	.98	.33
	Science	135	4.47	.64		
B11: Physical appearance	Arts	251	4.16	2.72	-.46	.65
	Science	135	4.19	2.64		
B12: Social competence	Arts	251	4.42	3.95	-.34	.73
	Science	135	4.44	5.16		
B13: Verbal skills (ability to communicate effectively)	Arts	251	4.60	3.95	1.70	.03
	Science	135	4.47	5.16		

Data analysis is the most crucial part of the research. Data analysis summarizes collected data. It involves the interpretation of data gathered through the use of analytical and logical reasoning to determine patterns, relationships or trends. Discussion provides the explanation and interpretation of results or findings by comparing with the findings in prior studies.

4.2 Discussion

The relationship between job-related skills and the big-five trait personality of final year students will be discussed thoroughly in this section. The discussion also highlighted a comparison between Arts and Science final year university students based on the 13 interview attributes.

4.2.1 The Relationship Between Seven Job-Related Skills and The Big-5 Traits Personality

Openness and Conscientiousness Personality -The study revealed that both personality traits; Openness and Conscientiousness showed positive and significant relationships with the seven job-related skills (i.e. interpersonal, intrapersonal, computing, entrepreneurship, personal organization, management & leadership). Job-related skills can derive from various sources such as education, community work, and training programs. Others can be acquired through experiential learning on the job and extra-curricular courses in the university. Besides, certain job-related skills may also be derived from one's personality. This as revealed in our study that the higher are Openness personality traits and Conscientiousness traits, the higher is the score of seven job-related skills. These showed that participants with high scored in Openness and Conscientiousness traits perceived the seven job-related skills as important. This maybe they believe that the seven job-related skills may assist them to be more prepared and fit in the job industry after graduation and can be strengthened with the two traits of personality.

Job-related skills are those abilities that allow a candidate for employment to excel in a particular job (Doyle, 2019). For instance, in the interpersonal skills, Holifield (In Paljug, 2019, p.1), the owner-operator of a $10 million Poolwerx franchise stated that 'It's not about electronics or internet skills, it's not about mechanics. It's all about interpersonal relationships,". In addition, Holifield said. "You have to have likable people … good eye contact, firm handshake, [willingness] to help people … You can't teach someone to put a smile on'. Good interpersonal skills that accompany conscientiousness and openness traits may help a person to be more excel in industry. This showed that the personality of employees is important to make sure the organization can accomplish the process and activities successfully as stated by Youshan and Hassan (2015).

In regard to Openness trait, an individual who is high in openness to experience like meeting new people, loves to learn, enjoys the arts, engages in a creative career or hobby (Lebowitz, 2016). Openness to experience leads to gains in knowledge and skills, and it naturally increases as a person ages and has more experiences to learn from. In contrast, an individual who is low in openness to experience probably prefers routine over a variety of sticks to what he or she knows and prefers fewer abstract arts and entertainment. In other words, they tend to be conventional and stay in their comfort zones. In addition, they can become strong and creative leaders and are most likely to come up with the next big innovation (Ackerman, 2019). People who scored high in openness personality are generally artistic and curious and they tend to become bored with routine jobs (Costa & McCrae, 1992; Schweizer, 2006). In our study, we found that the higher the score in Openness personality, the higher the participants' perceived the seven job-related skills as important.

In regard to the Conscientiousness trait, Barrick and Mount (1991) stated that conscientiousness is related to performance criteria across occupational groups. Conscientiousness personality in this study correlated positively with the seven job-related skills (i.e., interpersonal, intrapersonal, management, personal organization, entrepreneurship, computing & leadership). Someone who scores higher in conscientiousness is more goal-oriented, tends to control impulses and is usually very organized. Furthermore, they also excel in their ability to delay gratification, work within the rules, and plan and organize effectively. Conscientiousness traits are also correlated with creativity and collaboration. In contrast, people low in conscientiousness are much more likely to procrastinate and to be flighty, impetuous, and impulsive (Ackerman, 2019). Success in schools and careers and excel in leading others always related to people high in conscientiousness (Lebowitz, 2016). This was supported by Barrick et al. (2001) that conscientiousness traits correlated with work performance across a range of performance measures. In addition, perseverance is also one of the dimensions of conscientiousness (Lamb & Doeche, 2017).

Based on the preceding argument, we believe that significant characteristic of Openness personality (e.g., curiosity, imaginative & creative) and for conscientiousness (e.g., perseverance, goal-oriented and organized) can explained the existed positive relationship that found with the seven job-related skills such as capability in working and negotiating with others (interpersonal), learn new skills and accomplish unexpected work project (intrapersonal), use the database programs (computing), be self-employed (entrepreneurial), work independently (management), manage and do several tasks at once (personal organization) and ability to gives direction and guidance to others (leadership). The specific characteristics of conscientiousness traits of a person may increase their level of importance based on their perception towards job-related skills as revealed in this study. Therefore, we believe that personality traits play an important role in linking the job-related skills among university students and the students' perception of the interview attributes, besides academic. This as highlighted by Higdon (2016) that graduate employability cannot be linked only to the undergraduate degree experience, course and institution alone.

Agreeableness- In this study, agreeable participants perceived higher the importance of four job-related skills (i.e., interpersonal, intrapersonal, computing & management). According to Lebowitz (2016), agreeable people are well-liked, respected, and sensitive to the needs of others. They tend to have few enemies and are affectionate to their friends and loved ones, as well as sympathetic to the plights of strangers. They also tend to follow the rules, helping others and display good organizational citizenship behaviors. An agreeable person is more likely to believe that cooperation is more successful than the competition (Matthews, 2015).

Based on the previous explanation of agreeable people, we assume that agreeable people did not perceive entrepreneur skills as important might be because to become an entrepreneur, a person is likely tougher, more demanding and more prone to drive a hard bargain as stated by Griest (2012). According to Envick and Langford (2012) and Antoncie, Kregar, Singh, and DeNoble (2015), entrepreneurs to be significantly lower on agreeableness and conscientiousness. People with low agreeableness have been shown to be less likely to abide by laws, procedures and cultural norms (Heinstrom,2010). Some researchers hypothesize that because most entrepreneurs eventually become the Chief Executive Officer (CEOs) of their own ventures, they do not need to worry about pleasing other people around them (Kerr, Kerr & Xu, 2018) or in other words they do not concern about respect and sensitivity toward others. Agreeableness traits may inhibit one's willingness to drive hard bargains, look out for one's own self-interest, and influence or manipulate others for one's own advantage (Zhao & Seibert, 2006).

Our study revealed that agreeableness trait such as caring and trustworthy did not perceive the personal organization and leadership skills as important. This may be because agreeable people have difficulty in giving criticism, and standing up for themselves to others (Markman, 2014) and this is in contrast with their traits that are more courteousness, good-natured and caring. As leaders, they must have the personal courage to stand up for what is right (Striclin, 2014). Individuals with low agreeableness or disagreeability have a lack of desire to give cooperate with others because they do not trust people. This may affect their relationship with others (Youshan & Hassan, 2015). Disagreeable people are cold and suspicious of others, and they are less likely to cooperate (Pappas, 2017).

Extraversion -Our study found that extraversion personality correlated positively with intrapersonal, management and personal organization. This showed that participants who scored higher in extraversion perceived the three previous job-related skills as more important. To understand these findings, we may refer to the specific traits of extroversion traits. According to Ackerman (2019), people with high extraversion are generally more assertive, socially confident and recharge from interacting with people. Whereas, those who score lower are more likely to seek solitude and take charge of situations. Extraversion may express a set of beliefs that one is socially dominant and that one is admired by others (Matthews, 2015). People who scored high on extraversion tend to be cheerful, like people and large groups, and seek excitement and stimulation (Zhao & Seibert, 2006). Besides that, Schwarzer (1994) reported that the personality traits of extraversion correlated with self-efficacy and this in line with other past studies (e.g. Thoms, Moore & Scott, 1996; Zhang et al., 2019) that extraversion was a positive predictor on self-efficacy. Self-efficacy is the optimistic self-belief that in our competence or chances of successfully accomplishing a task and producing a favorable outcome (Akhtar, 2008). The preceding explanations of extraversion might help us to understand the reason for those who are extroversion perceived the intrapersonal, management and personal organization as more important compared to the other job-related skills that examined in this study. This showed that participants high in extraversion perceived skills that focus on self, such as the ability to understand work self-efficacy and learn new skills (intrapersonal), optimize the use of resources and time (management skills) and ability to manage and do several tasks and sets priorities (personal organization) as important.

Emotional Stability -The emotional stability showed a positive correlation with intrapersonal, management and personal organization which means that participants who considered themselves as more calm, emotionally stable and not easily upset perceived the intrapersonal, management and personal organization as important. People who are low scored in the emotional stable tend to maybe temperamental or easily angered, be self-conscious and unsure of themselves (Lebowitz, 2016). In addition, they are generally prone to anxiety, worry, and sadness that lead to high in neuroticism. In this study, we found that the higher is emotional stability of participants, the more they perceived the three job-related skills i.e., intrapersonal, management and personal organization skills as important. This can be explained by the characteristics of emotional stability individuals who are more likely to feel confident, sure of themselves, and adventurous. They may also be brave and unencumbered by worry or self-doubt (Ackerman, 2019) and are characterized as self-confident, calm, even-tempered, and relaxed (Zhao & Seibert, 2006) In addition, they are more comfortable in their own self (Ackerman, 2019). The three job-related skills that perceived as more important by those who are high in emotional stability are more focuses on self-skills i.e., managing self and time well, understand their own strengths and weaknesses and ability to work independently.

4.2.2 The Relationship Between Four Job-Related Skills in the 4th Revolution Industry and The Big-5 Traits Personality

The results showed positive and significant relationships between the two personality traits i.e. Agreeableness and Openness with each of four elements of job-related skills in the 4IR (creativity, collaboration, communication & critical thinking). This revealed that the higher scored in both traits, the higher is participants perceived the four job-related skills as more important. Other traits such as conscientiousness perceived all skills in 4IR as important except for communication. Those with high emotional stability perceived the three elements in 4IR (i.e., critical thinking, communication & collaboration) as more important but not for creativity. Extraversion in this study only perceived critical thinking as important compared to other skills in 4IR.

From the results, we can summarize that the element of collaboration and critical thinking correlated positively and significantly with all the big-5 personality traits. Collaboration in this study defined as the ability to create networking with other groups or organizations and share resources and responsibilities. It is considering an important element in building a network with the other agencies. This as stated by Higdon (2016) that graduates identified key success factors i.e. collaboration which they felt helped them develop for 'potential' work. They needed networking contacts to create work opportunities and collaborations. The graduates wanted industry brought into the academic curriculum and visiting professionals to be involved in their teaching, learning, and assessment (Higdon, 2016). The government through the Ministry of Higher Education and Universities has taken relevant initiatives to focus on the collaboration with the industry by implementing the integrated cumulative grade point average (CGPA), the gap year, the 2u2i Program and the CEO@ Faculty Program. Through these programs, university students may have more opportunities to engage and enhance their job-related skills with outside organizations/industry.

In cooperating and engaging work with other groups that is to build a good network with the industry, a person needs to be more open in sharing ideas (openness to experience trait), planning and organizing plan effectively (conscientiousness trait) (Ackerman, 2019), showed high willingness to help others at work and display good organizational citizenship behaviors (agreeableness trait). Besides, the extraversion trait such as socially dominant and that one is admired by others (Matthews, 2015) and emotionally stable and not easily upset (emotional stability) are important in enhancing the collaboration skills (Lebowitz, 2016). The government of Malaysia stress on the importance of collaboration skills by creating good relationships with the industry for the graduates to gain employment skills. Good connections with people from the industry may help students to learn and understand how the industry worked. Furthermore, students may also gain work experience, find paid work and gained confidence by entering and succeeding within the industry (Higdon, 2016).

The five-big five traits also correlated with critical thinking. In this study, critical thinking defined as an ability to learn and apply new knowledge and skills. In addition to explain, analyze and evaluate information. We understand that people who are scored high each of the big-5 traits perceived critical thinking skills such as the ability to think critically, recognize and analyses problem as important. To think critically, a person needs to be more open to experience (openness), responsible and organized (conscientiousness), warm and considerate towards others and their surroundings (agreeableness), manage emotion well (emotionally stable), and enthusiastic and assertive (extraversion). All these elements can be found in the big-5 personality traits.

In regards to communication skills, only participants who scored high in Agreeableness, emotional stability and openness perceived communication skills as important. Communication in this study refers to the ability to listen attentively and express the idea clearly. People who are high in these three traits are inclined to be sensitive to the needs of others (agreeableness) and like meeting new people (Openness) (Lebowitz, 2016) and calm, even-tempered, and relaxed (emotional stability) (Zhao & Seibert, 2006). These positive traits can enhance the communication skills to an individual to communicate and understand others and at the same time manage their emotions well in interacting with others. In regards to communication skills, only participants who scored high in Agreeableness, emotional stability and openness perceived communication skills as important. Communication in this study refers to the ability to listen attentively and express idea clearly. People who are high in these three traits are inclined to be sensitive to the needs of others (agreeableness) and likes meeting new people (Openness) (Lebowitz, 2016) and calm, even tempered, and relaxed (emotional stability) (Zhao & Seibert, 2006). These positive traits can enhance the communication skills to an individual to communicate and understand others and at the same time manage their emotions well in interacting with others.

Creativity in this study showed a positive correlation with these personality traits i.e., agreeableness, openness, and conscientiousness. Creativity has been acknowledged as one of the most predominant factors contributing to individual performance in various domains of work, In this study, creativity is defined as the ability to work based on intrinsic motivation and ability to produce an original and valuable project. Past studies (Hornberg & Reiter-Palmon, 2017; Silvia et al., 2009) found that Openness to experiences frequently to have found a large and medium correlation with overall creative activity. A study conducted by Sung and Choi (2009) of 304 undergraduate students at a North American business school showed that openness to experience had significant positive effects on creative performance. While for Agreeableness, tend to show a small relationship with social and interactional aspects of creativity. This is in contrast with Sung and Choi's (2009) statement that agreeable people have difficulty in producing and expressing ideas that are different from those of others or conventional. Past studies (Silvia et al., 2009; Sung & Choi,2009) found that Openness to experience had a correlation with self-perceived general creativity. Openness to experience enables people to move away from traditional beliefs and conventions and engage in novel and unique ways of thinking. Individuals with high openness to experience are more flexible in embracing novel ideas even though these may be untested or fanciful. Open-minded people have strong tendencies to seek out unfamiliar situations that allow for greater access to new experiences and perspectives (Goldberg, 1990). Individuals with high openness to experience are more flexible in embracing novel ideas even though these maybe are not tested or fanciful. Open-minded people have strong tendencies to seek out unfamiliar situations that allow for greater access to new experiences and perspectives (Goldberg, 1990, in Sung and Choi, 2009). Other than openness, other personality traits such as conscientiousness trait also correlated with creativity (Feist, in Hornberg & Reiter-Palmon, 2017). Agreeableness showed a positive predictor of creative performance but only when the person's extrinsic motivation was low (Sung & Choi, 2009).

In the era of the 4th industrial revolution, the four job-related skills are important in dealing with the technology digital world. We believe with the right personality such as the big five traits, students will be more prepared to integrate themselves in the working world of the 4th industrial revolution. All these may help students who one day will shift from the academic world to the job industry to adapt and work with new technology and their colleagues. This makes a stronger team, which leads to better communication, more collaboration and a more productive working environment overall (Paljug, 2018).

4.2.3 The Difference Between Arts and Science Field Students on The Perceiving the Important of Interview Attributes

In regard to the level of importance of 13 interview traits that perceived by final year students across different streams, we found that Arts students perceived individual attitude, attitude towards work, behavioral aspects, and verbal skills as more important compared to Science students. Science students perceived personal engagement, value addition to company and entrepreneurship skills as more important. From these findings, we may conclude that Arts students focus more on the attitudes and behaviors attribute such as attitude towards work, one's attitude and behavioral aspects such as interaction with others and verbal skills. Whereas, Science students focus more on knowledge and additional skills such as personal engagement, value addition to company and entrepreneurship skills. In this study, the level of importance of each interview attribute ranged from 1 to 5 (very not important to very important).

With regard to Science students, in today's competitive job, Science students willing to work in areas that are not based on their fields or degrees. This as stated by Mohd Emran and Abdul Rahman (2013) that reality does not seem to support the theory of 'choice of education as a choice of career'. The majority of science students are not involved in science careers. It is common to see former science students pursuing careers in sales and marketing, administration, and other non-science professions. On the other hand, Arts students cannot build a career in science as science-related professions require in-depth technical knowledge that is not in any of the art syllabi. These statements may explain why Science students perceived more important the interview attribute of entrepreneurship skills and personal engagement.

Arts students, also pursuing working in different fields which are not based on their background. However, the way their perceived the importance of interview attributes is more to personal factors such as their attitude towards work and their own attitude and behavioral aspect. This may be because of their background that Science students focus on developing technical skills, while the Arts students enhance soft skills among individuals (Tyson, 2013). In addition, a study conducted by a Japanese neuroscientist, Takeuchi et al. (2014) found that in the light of Simon Baron-Cohen's "Empathizing-Systematizing" theory, some people are drawn to impersonal systems, so these people tend to like science, and are also more likely to be autistic. Whereas the humanities subjects, being about people, appeal to the more empathic types, the 'people persons. Based on the preceding argument may be explained of the differences between Science and Arts students in perceiving the importance of interview attributes.

5. Conclusion

The findings may help relevant university students to understand the relationship between the big-5 personality traits and job-related skills. These findings may help the organizations (governmental and non-governmental sectors) to understand the perception of university students on job-related skills which might be different from the industry's view. This may help them to review and reflect appropriate strategies to tackle the employability problems among graduates and to be ready in facing challenges in searching for a job particularly in the Fourth Industrial Revolution era. In addition to that, this study can be used as a guideline by relevant authorities to implement relevant programs that can support university students and graduates to increase their soft-skills as well as interview attributes. This is to ensure that they are more prepared to enter the work industry. This is because many graduating students do not begin to seriously consider and explore the possibilities of careers until after graduation (Kuan Heong & Kee Tuan, 2019).

For future study, it is suggested to involve participants from various academic levels and not only focuses on final year students. This is because according to Higdon (2016) the first-year students' conceptualization of employability is very different from the third-year undergraduates' perceptions, which seem less mainstream, more pluralistic, and related to who you know rather than what you know.

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