'Turning Job Seekers to Job Creators': Talent Management Module Development for TVET Graduates

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Abstract: The COVID-19 pandemic negatively impacted the economy, particularly the downsizing of operations and retrenchment, which affected various sectors. Post-pandemic prompted a shift in the perspective; rather than waiting for jobs, it seems that individuals needed to become job creators. In this regard, the Technical and Vocational Education and Training (TVET) is believed to be a prominent field of study that could facilitate graduates to become job creators. Nevertheless, some of graduates would not consider owning businesses after graduation, indicating the difficulty of becoming job creators. Therefore, this study emphasising TVET program built and validated a Talent Management Module (MTM) involving creation (Job Creator) based on the Cognitive Information Processing (CIP) theory. It comprised both quantitative and qualitative phases. First, a series of interviews were carried out to explore the perceptions of talent management (TM) among seven experts. Second, a quantitative study involving data interpretation analysis based on the validity of the module content was obtained using the interview technique. Third, the module content validation process involved seven experts comprising academics and Malaysian career academy entrepreneurs whose backgrounds included entrepreneurship and TVET. The results showed that nine variables were involved, namely 1) Communication, 2) Critical Thinking and Problem-Solving Skills, 3) Teamwork Skills, 4) Continuous Learning and Information Management, 5) Entrepreneurial Skills, 6) Leadership Skills, 7) Professional Ethics and Moral, 8) Career Adaptability, and 9) Digital technology. Overall, MTM that was built in this study was consented to by the appointed experts. The development of this module might better be considered to encourage graduates to create prospective job creation that could reduce the unemployment rate. Therefore, the proposed MTM might be an appropriate solution to address unemployment through the identified important components in the implementation and empowerment of career programmes across TVET graduates.

Keywords: CIP theory, COVID-19, entrepreneurship, HEI, module, talent management, TVET

1.   Introduction

The rapid pace of 21st-century globalisation poses a major challenge to all countries to remain competitive in developing their respective economies. Furthermore, the opening of the Chinese and Indian markets to the global economy significantly changed the economic environment of developed and developing countries (Dobronogov, 2019). However, following the COVID-19 pandemic, the world economy, including Malaysia, underwent dramatic changes. The pandemic slowed down the economy and led to the downsizing of operations and layoffs, especially for severely affected sectors such as tourism and transportation (ILO, 2020). The COVID-19 pandemic impacted the national economy and the social aspects of the population. As such, the public saw shifts in lifestyle that posed a direct impact on employment and source of income. The economic changes indirectly affected graduate employment and subsequently posed greater challenges to developing acquired skills and talents (Ma'dan, Imail, & Daud, 2020). Changes in the economic sector that resulted from the pandemic also served as a challenge to graduates as it prompted more issues, for example, career competition, retrenchment, and changes in the industrial technology applications (Aucejo, French, Ugalde Araya, & Zafar, 2020). Therefore, choosing a career has become increasingly tedious and complex due to the significant environmental changes led by the COVID-19 pandemic.

Thus, graduates might better not remain as job seekers but rather job creators. By focusing on creating jobs, graduates might better utilise acquired skills and venture into new fields such as business and digital businesses that promise more demands and lucrative income as opposed to relying on monthly salaries (United Nations Conference on Trade and Development, 2020). The changes emphasising job creation which have become more prominent irrespective of graduates' readiness might better be considered as many conventional jobs have shifted and adapted modern technology into their operations. Furthermore, it was predicted that the Fourth Industrial Revolution (IR4.0) among the current younger generation generated shifts that emphasised the use of technology, the internet, and digitalisation to numerous conventional manpower-intensive jobs (Sima, Gheorghe, Subić, & Nancu, 2020). As such, TVET has prepared local graduates with the necessary field-specific skills to defy IR4.0 and occupational technological changes.

Furthermore, the TVET program is key to creating employment opportunities and subsequently building graduates' careers that will contribute to economic growth. The program has significantly reduced the unemployment rate (Jwasshaka & Fadila, 2020). First, TVET programmes contributed immensely to economic growth, poverty reduction, and job creation through the acquisition of skills for self-employment and absorption into the labour market (Opoko, 2018). Second, the development of Malaysian TVET is consistent to accommodate industrial needs which demand a highly skilled workforce (Jamaludin, Alias, & DeWitt, 2018). Currently, more than 1,400 TVET colleges have been established under various ministries to support industrial development in Malaysia (MIDA, 2020). The government has also provided numerous support and opportunities throughout the COVID-19 pandemic as part of the effort to encourage more TVET individual involvement to meet the diversified needs of skill-specific sectors.

TVET graduates could also generate sustainable income by diversifying their knowledge, capabilities, and skills. Income could be sustained because the skills learnt through TVET programmes could prompt technical field entrepreneurs to run businesses and create more job opportunities for others (Roslan, Misnan, & Musa, 2020). Therefore, measures to cultivate and consolidate university-level entrepreneurial culture might better be implemented. How TVET is encouraged among students and graduates might be equated with entrepreneurial mindsets that could be nurtured as early as the first year at higher education institutions (Dahalan, D'Silva, Ismail, & Mohamed, 2020). However, TVET graduates get to choose between becoming job seekers or creators by venturing into employment that bears a resemblance to the university programmes.

To become a job creator is to realise the dreams of many people whose journeys and challenges vary across individuals. There is diversity in the field of entrepreneurship regardless of the size of the businesses (Roslan, Misnan, & Musa, 2020). Successful entrepreneurs are characterised by talents, for example, 1) workforce planning, 2) recruitment, 3) strategic planning and coordination of goals, 4) executive building, 5) leadership development, 6) recognition programmes, 7) diversity and participation, 8) engagement and 9) retention (10). Therefore, graduates should be exposed to ways of managing and nurturing talents to excel as job creators.

1.1   Research Background

The lifelong education policy has resulted in an annual increase in Malaysian higher education student enrolment. However, unfavourable economic conditions have imposed significant difficulties for graduates to find suitable employment. First, the data derived from statistics suggested that the number of unemployed graduates saw an increase of 22.5% in 2020 from 2019 (DOMO, 2021). Second, it was reported that 30,765 (59.9%) out of 51,365 undergraduate degree recipients were yet to secure jobs following one year of graduation. It was found that a small number of graduates were far from ready to work; the effort to achieve 100% marketability of university graduates was nearly impossible to achieve (Dahalan, D'Silva, Ismail, & Mohamed, 2020).

By comparison, the Malaysian unemployment rate is extremely worrying to other Asian countries. Malaysian graduate unemployment in Malaysia stood at 10.8%, a stark difference from Singapore (4.6%), Thailand (5.9%), and Vietnam (7.9%) (DOMO, 2021). The significant increase in the unemployment rate caused various polemics that may have raised suspicion and degraded the quality of local public university graduates for failing to provide programmes that

are aligned with the current industrial needs. In response to the issue involving university programmes, the Department of Higher Education redesigned and dropped several programmes that were irrelevant to the industrial needs and dispensable to job opportunities (Misni, Nik Mahmood, & Jamil, 2021). To overcome this problem, higher education institutions (HEI) offered various TVET-related programmes that meet the needed industrial skills. However, the level of work readiness among graduates who completed TVET programmes was questioned (Kenayathulla, 2021). It was found that some TVET graduates were not considered to own businesses (Sandroto, Riyanti, & Tri Warmiyati). Such a condition clearly illustrates that our education system has encouraged graduates to rely on jobs as opposed to being highly skilled for becoming business owners and job creators.

To become a job creator is to be wise in managing TVET-related talents. Malaysia is moving towards empowering IR4.0, a looming technology development that will alter the global industrial landscape (MITI, 2018). However, the success of developing technologies could only be fully realised with the presence of a highly skilled workforce and talented TVET graduates (Sulaiman & Salleh, 2016). First, organisational progress was often hampered by challenges related to talent limitations than capital limits because talent is a key predictor in improving and maintaining organisational performance (Al Aina & Atan, 2020). Second, well-managed talents support continuous competitive advantage and improve exceptional organisational resource performance. Generally, the main source that shaped the success of an organisation is talent (Ghomi & Ahmadi, 2018). Nevertheless, the biggest challenge faced by existing public and private organisations concerned developing and retaining talents. Thus, learning and developing skills are important keys to organisational ability and capability to succeed.

The above issue is also driven by the employers' perception that HEI does not bestow TVET graduates' job-ready skills. Although TVET graduates possessed specialised knowledge and hard skills, they did not have the soft skills needed to create jobs (Ismail, Chik, & Hemdi, 2021). Recent research identified several soft skills elements such as entrepreneurial, teamwork, communication, career adaptability, and problem-solving skills that are important in preparing and prompting graduates to use their existing talents to become entrepreneurs (Dwi Riyanti, Sandroto, & Warmiyati, 2016). These soft skills are key predictors to differentiate TVET from other graduates. Such an issue is further exacerbated by the lack of studies on talented graduate management to become job creators at the educational institution level (Mohamad, 2015). Several studies advocated good management practices through human capital, but most HEI managements did not accommodate a comprehensive talent management model as a strategic goal (Mohamed Jais, Yahaya, & Ghani, 2021). Furthermore, one of the current problems faced by organisations was that the demand for talent exceeded the supply (Sulaiman, Ismail, Saukani, & Lelchumanan, 2021). Talented individuals are among the prominent predictors of ongoing competitive advantage and organisational goals.

This study emphasises TVET built and validated MTM to empower job creation (Job Creator). The results of MTM validation could help, guide, maintain, and improve TVET graduate talents at the university level. By focusing on this module, incurred costs are reduced because of managing and training existing talents of organisational employees for survival.

1.2   Talent Management (TM)

TM is an important element in enhancing individuals' abilities. Talent management may be equated with a good impact on organisations that act as employers. The task played by organisations is to provide employees with a variety of training, advice, equipment, and methods to produce quality products (Human Resources Management and Training, 2014). Nonetheless, organisations also expect commensurate returns to such investments in the form of quality products, loyalty, high commitment, and trustworthy and sincere employees in carrying out jobs and responsibilities. The bottom line is that organisational success is dependent upon talented employees who positively perceive and execute the tasks entrusted to them (Osborne & Hammoud, 2017).

One of the prominent factors for organisations or companies to develop higher employee performance is hiring several talented employees to maximise job performance. Talents refer to individuals' abilities that contribute significant differences towards company performance and achievements now and in the future (Al Aina & Atan, 2020). In this context, TM covers the aspects of identification, attraction, integration, development, motivation, and retention of individuals who are important to organisations. TM is also said to mediate the processes of attracting, recruiting, and retaining talented employees (Gallardo-Gallardo, Thunnisse, & Scullion, 2020). It also describes the effort to attract, retain, motivate, and develop the talents needed by an organisation for efficient and competitive operation for long-term success. Thus, it can be concluded that there is a significant relationship between employees' TM with organisational work or output to enhance the national economic development capacity.

TM employs a strategic approach to managing human capital throughout the career cycle. It also functions to attract, retain, develop, and transition the most important assets. In a strategic approach, attracting qualified talent is an important step so that organisational goals are met to mould talented employees and improve job performance (Painter-Morland, Kirk, Deslandes, & Tansley, 2019). Proper employee matching is central to organisations. The strategic approach also comprises talent development which has many advantages to improving job performance (Narayanan, Rajithakumar, & Menon, 2019). Without talent development, employees may be less productive and job performance will be affected.

1.3   CIP Theory

MTM construction draws upon the CIP theory. The theory is often used during the coaching process in helping individuals during career counselling. CIP is one of the theories used by counsellors in helping students (Hunter & Lovelace, 2021). One of the main functions of CIP theory is to help individuals 1) obtain information, 2) raise the consciousness of making career choices, and 3) improve problem-solving and decision-making skills that will be used in their career (Osborn, Sides, & Brown, 2020). Research showed that there was a negative correlation between career decision-making and individuals' unprepared thinking (Chuang, Lee, & Kwok, 2021); a positive correlation was reported between individuals' unprepared thinking with career decision-making difficulty (Hunter & Lovelace, 2021). Thus, individuals often find it difficult to make career decisions because it stems from the thought of career unpreparedness.

The module construction based on the CIP theory identified aspects that help students in highlighting their talents beginning at the university level. The module directly helps unravel decision-making confusion, commitment concerns, and external conflicts. It also guides participants to prompt positive career thinking, appreciate preparedness, and build early action plans for successful career decision-making skills. Thoughts on career unpreparedness and difficulty in making career decisions are typically dependent upon two vocational constructs that are frequently associated with significant influence on career-related activities (Kronholz & Osborn, 2016). Career decision-making is considered a developmental process in which individuals make and implement career-related decisions (Chuang, Lee, & Kwok, 2021). Career decision-making difficulties are some of the most common career problems encountered (Sart, 2014) that usually involve decisions such as choosing a major in college, changing careers, or deciding when to retire. Negative thoughts on career preparedness, thoughts, and beliefs about one's a career path and decision-making processes, in general, could affect one's ability to solve problems or make relevant career decisions (Chuang, Lee, & Kwok, 2021). As such, counsellors use CIP theory to help individuals transition from negative career thinking to more prepared career thinking.

The CIP approach is designed to assist individuals in making current and future career choices. The CIP theoretical approach states that career problem-solving and decision-making are skills that can be learnt and practised (Chuang, Lee, & Kwok, 2021). Once individuals have improved their problem-solving and decision-making skills, they can then apply the same skills to prospective choices. According to the CIP approach, the key aspects of career problem-solving and decision-making include self-knowledge, occupational knowledge, decision-making skills, and metacognitive (Sart, 2014).

The TM module was built based on the Cognitive Information Processing (CIP) theory founded by Sampson and their team in 1996 (Sampson, 2017). Thoughts of career unpreparedness appear in individuals' negative misunderstandings, self-harming assumptions, self-harming behaviour, elements of one's myths or fables, self-regulation, self-harming statements, irrational self-harming expectations or predictions, and dysfunctional self-thinking, cognition, and beliefs. It is also suggested that by reducing the thoughts of career unpreparedness, clients might be able to effectively process the information needed to solve career problems and make decisions. Individuals become more efficient at challenging non-functioning career thinking. They are also more likely to think more creatively, particularly, about the realities of their chosen career.

The CIP theory also involves the CASVE cycle model (Communication, Analysis, Synthesis, Valuing, and Evaluation). The CASVE cycle is the existing process of problem-solving and career decision-making that is designed to enhance decision-making skills and increase awareness of career problem-solving and decision-making processes (Sampson, 2017). It covers five stages, namely, communication, analysis, synthesis, evaluation, and action. Figure 1 summarises the five stages:
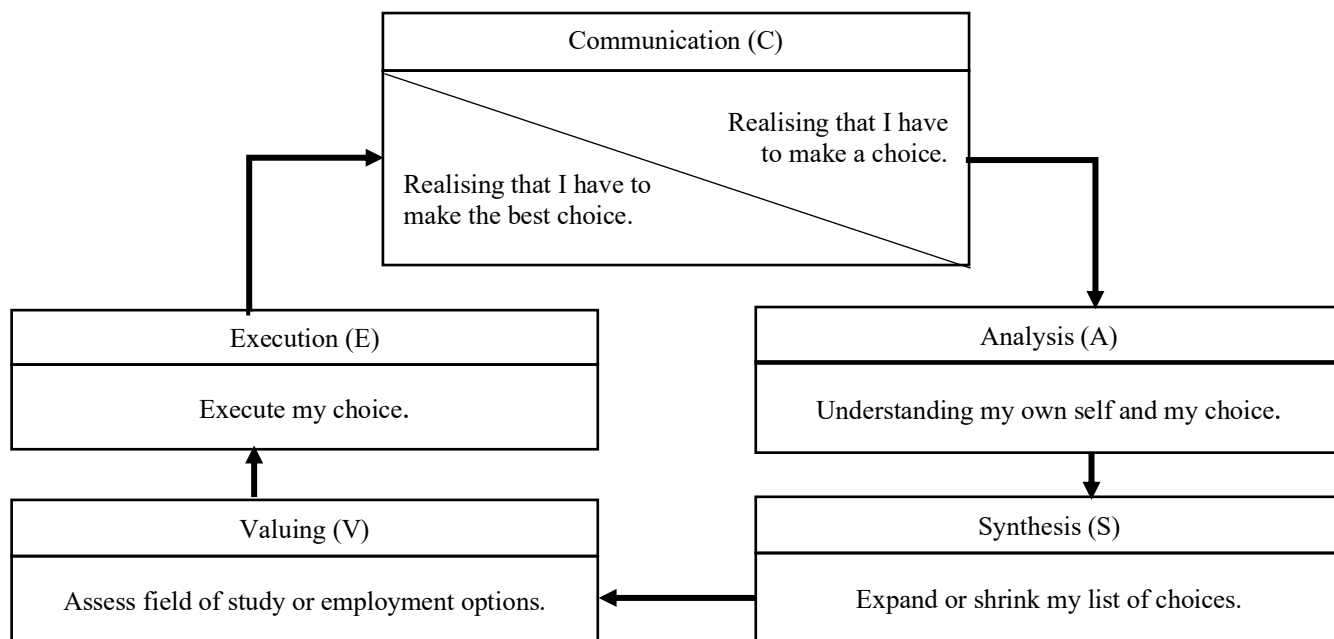
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┌─────────────────────────────────────────┐
│          Communication (C)              │
│  ╲                                       │
│    ╲            Realising that I have    │
│      ╲            to make a choice.      │
│  Realising that I have to  ╲             │
│  make the best choice.       ╲           │
└─────────────────────────────────────────┘
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Execution (E)	Analysis (A)
Execute my choice.	Understanding my own self and my choice.

Valuing (V)	Synthesis (S)
Assess field of study or employment options.	Expand or shrink my list of choices.

Fig. 1 - CASVE cycle based on the CIP theory Source: Sampson et al. (1996)

2.   Research Methodology

A qualitative and quantitative investigation was carried out through a descriptive research design. Descriptive research provided 'pictures' and information about situations across periods and helped prospective plans (Bhat, 2018). Analyses or summaries of information or data obtained for a population or sample were done through the descriptive research design. However, using a quantitative approach alone could not have answered questions related to the perception of TM among TVET graduates. In other words, change information could not have been absorbed solely through a quantitative approach (Bryman, 2006). Therefore, a qualitative approach was used to determine the perception of TM. TM involved seven TVET, entrepreneurship, and graduate marketability experts who were interviewed.

The next step is the quantitative approach. First, the quantitative research approach comprised the main data collection method to evaluate the validity of the developed TM module based on the variables obtained from the qualitative dimension. Second, the quantitative component involved the interpretation of quantitative findings based on the validity of the module content. Third, content validity was assigned to the seven experts who were selected using purposive sampling. The expert panels comprised academics (lecturers at higher learning institutes) and operators of career consulting academies with Malaysian entrepreneurial and TVET backgrounds.

2.1   Expert Interviews

According to Edwards & Holland (2013), interviews can be classified based on their nature of implementation and ideal motives. Hence, for the aim of this study, nine experts from two backgrounds, i. lecturers, and ii. trainers are selected as expert interviews. They are selected as they have deep understanding and competence in terms of knowledge, skill and experience through practice and education in a particular field. In addition to that, all of them have more than ten years of experience in career talk, research, and training. Also, the trainers who are involved in the interview are the ones who have training centres and conduct career training for students and employers. Expert background as in Table 1.

Table 1 - Experts' interview background

Expert Interview	Position	Experience (years)	Area of expertise
Expert_1	Lecturer	15	Leadership
Expert_2	Lecturer	17	Entrepreneurship education
Expert_3	Lecturer	25	Engineering education
Expert_4	Lecturer	20	Career in TVET
Expert_5	Lecturer	28	Employability skills
Expert_6	Trainer	11	Career development
Expert_7	Trainer	10	Soft skills
Expert_8	Trainer	15	Entrepreneurship
Expert_9	Trainer	12	Hard skills

In qualitative research, the most used type of interview is partial interview (Alshenqeeti, 2014). Partial interviews have no strict rules. Their execution is reliant on how the interviewee replies to the researcher's question or issues. Taking this into account, the interview that has been conducted in this study is a partial interview. As mentioned by Stuckey (2013), the structure of which this interview is only focused on the proposed title and scope.

In this study, the data collected through interviews was recorded through field notes along with video recording. It is chosen because of these reasons:

(a)   Field notes can help researcher to describe the details activity during the interview,

(b)   Video recording make the data collection more effective, accurate and authentic.

2.2   Instrument

After conducting expert interviews, a set of questionnaires was created as the study instrument. Findings from expert interviews, questionnaire items based on independent and dependent variables were created. The questionnaire was developed and adapted from previous studies and was verified by seven experts in the field of Technical and Vocational Education and Training (TVET). These expert panels will have two weeks to review and comment on the questionnaire's items. Table 2 shows the background of expert panels for the questionnaire.

Table 2 - Experts panels background

Expert panels	Position	Experience (years)	Area of expertise
Expert_1	Lecturer	15	Engineering education
Expert_2	Lecturer	25	Engineering education
Expert_3	Lecturer	12	Career in TVET
Expert_4	Lecturer	28	Employability skills
Expert_5	Trainer	11	Career in TVET
Expert_6	Trainer	11	TVET skills
Expert_7	Trainer	13	TVET skills

The questionnaire consists of 117 items which divided in nine parts. Table 3 shows division of questionnaire with the source adopted.

Table 3 - Division of questionnaire

No.	Partition	Number of items	Sources
1.	Communication	11	1. Andrew B. S., Andrew S., Denise Mc G., Susan O., & Elie A. A., 2009. A Tool for Self-Assessment of Communication Skills and Professionalism in Residents. BMC Medical Education, Febuary,1-7 2. Alex D. B., 2001. A Needs Assessment of Communication Skills Needed by Trade and Industry Program Graduates of Wisconsin Indianhead Technical College. Research Report, University of Wisconsin-Stout, 58-61.
2.	Critical Thinking and Problem-Solving Skills	12	1. Shazaitul Azreen Rodzalan, Maisarah Mohamed Saat. 2015. The Perception of Critical Thinking and Problem-Solving Skill among Malaysian Undergraduate Students, Procedia - Social and Behavioral Sciences, 172, 725-732, 2. Kampylis, P. & Berki, E. (2014). Nurturing creative thinking. International Academy of Education, UNESCO Report. 3. Amelink, Catherine & Wade, Christina & Watford, Bevlee & Cuadrado-Medina, Joseph & Folgar-Lopez, Juan & Lewis, Stephanie. (2014). Measuring Innovative Thinking Skills in Innovation Challenge Activities. 121st ASEE Annual Conference & Exposition.
3.	Teamwork Skills	15	1. Agency for Healthcare Research & Quality, 2017. Teamwork attitudes Questionnaire. Teamwork Report. 1-12. 2. Paris S. Strom & Robert D. Strom (2011) Teamwork skills assessment for cooperative learning, Educational Research and Evaluation, 17(4), 233-251,
4.	Continuous Learning and Information Management	9	1. Meeran, Subhan & Koh, Denise & Osman, Kamisah & Zakaria, Effandi & Iksan, Zanaton & Tuan Soh, Tuan Mastura. (2011). Measuring Lifelong Learning in the Malaysian Institute of Higher

Learning Context. Procedia - Social and Behavioral Sciences. 18. 560-564.

2. Davgid, K. MKichele S., & Diana G., 2017. AARP Survey of Lifelong Learning. NRTA Report.

3. Uzunboylu, Hüseyin & Hürsen, Çiğdem. (2011). Lifelong learning competence scale (Lllcs): The study of validity and reliability. Research Report, Near East University.

No.	Partition	Number of items	Sources
5.	Entrepreneurial Skills	15	1. Andrew G. Bill R., & Sarah L., 2019. Mindset Matters: Encouraging an Entrepreneurial Mindset in K-12 Curriculum. Beedie School of Business. 2. Ikhlaq S. & Paris D. 2015. Effect of Comfort Zone on Entrepreneurship Potential, Innovation Culture, and Career Satisfaction. 122nd ASEE Annual Conference & Exposition. 3. Dan C. 2021. Creating and Recognizing New Opportunities SAGE Publications. 56-75.
6.	Leadership Skills	15	1. Peter G. N., 2021. Developing Leadership Skills: Leadership Skills Questionnaire. SAGE Publications. 81-82. 2. Elaine R. 2017. Student Leadership Course. Intl Centre Report. 23-28. 3. Andrew G., Donald, C. Mellisa G., & Katie H., 2019. Development of A Leadership and Entrepreneurship Skills Assessment Instrument. Research Report, Lawrence Technological University. 15-36.
7.	Professional Ethics and Moral	18	1. Bruce et al., 2016. Ethics among five Countries. Research Report. University of Quebec at Trois-Rivières. 25-29
8.	Career Adaptability	11	1. Laura N., Maria C. G., & Salvatore S., 2012. The Career and Work Adaptability Questionnaire (CWAQ): A first contribution to its validation. Journal of Adolescence, 35 (6), 1557-1569.
9.	Digital Technology	11	1. AAL Report, 2017. Assistive Care and Lifestyle Improvement. Digital Skill Questionnaire. 1-3.

After the questionnaire was reviewed and evaluated by the experts, the questionnaires were distributed to the students from four different fields of bachelor's degree which are Design and Technology, Design, Agricultural Science, and Home Economics at Faculty Technical and Vocational, Universiti Pendidikan Sultan Idris. Out of 415 students, only 132 students were selected. There are nine variables in the questionnaires and considered an appropriate instrument to facilitate graduates to become job creators. The sampling method for this study was the simple random sampling method. The random sampling method was used for this study because it shows the sample represented the population and any bias in the population would be equally distributed among the people chosen (Creswell, 2012).

2.3   Data Analysis

After the data collection step, the next culminating activity is data analysis. As mentioned earlier, a qualitative approach was used to determine the perception of TM. Braun and Clarke (2006) reported that thematic analysis is a qualitative data analysis method that involves exploring throughout a data collection to identify, analyse, and report on repeating patterns. It is a data description approach, but it also requires interpretation in the processes of selecting codes and generating themes. This method is chosen due to its simplicity and ease of application. Moreover, it is an effective data analysis method that enables researchers to summarise, highlight significant themes, and understand a wide range of data sets. Later, the quantitative approach has been conducted. The data obtained were analysed using the SPSS version 22 software via the ANOVA method. The Analysis of Variance (ANOVA) test is employed to determine whether the mean between main element characteristics is significant or otherwise (Ostertagova & Ostertag, 2013).

3.   Research Findings

Nine variables were established following the results of the qualitative dimension. These elements were then used to build a module and complete the activity plan. Table 4 shows the quotation, coding, and theme that were obtained from interviews with experts to find out the elements of talent required in TM and Table 5 shows the elements, sub-elements, and activities concerning TM among TVET students.

Table 4 - Quotation, Category, and Theme for elements of TM

R	Quotation	Category	Theme
R1	. he is active, he has achievement in co -curriculum, in other areas in the association. Because in many students, this is the one who sees that he has the characteristics of a leader. So he has to have leadership.	Leadership	
R2	Another element that can be considered is resilient. Resilient is an attitude, a leadership attitude ..		
R3	..through the course later he will be able to hone his leadership talents ..		
R1	The most important thing for this talent is that students need to have soft skills. that is, there must be communication ..	Communication	
R3	The first is communication. Communication is the ability he understands a question, the ability he can answer and the extent to which he uses it.		

R	Quotation	Category
R1	..he has to have critical thinking ..	Problem solving and Critical thinking
R2	Fourth, students need an element of critical thinking which can think innovatively.	
R3	Lastly responsiveness. That is how the person has the characteristics to respond in problem solving by thinking more creatively..	
R1	..he has information management where the student always wants to learn something new along with the development of information.	Continuous Learning and Information Management
R3	Technology is old such as online teaching, online coaching, it is old and rarely used by people, but when Covid-19 happens, it is an important thing to know. So students need to be prepared for the use of technology.	Technology ability
R4	..the talent of using the Internet, the use of information technology ..	
R1	..he has teamwork ..	teamwork
R2	Next is you have to have a general skill. That is a teamwork lah. You have to ability to work together.	
R3	The element of talent must also be present in terms of teamwork.	
R1	Next there must also be entrepreneur skills..	entrepreneur skill
R3	Next is named as an entrepreneur. Actually, those things are all entrepreneurs. In the entrepreneurial program have. But how to arrange the syllabus of the entrepreneur program so that he can get that skill. And that skill is usually developed at university.	
R4	The entrepreneurship mindset needs to be there even if he works with people ..	
R1	..after that he has moral and professional ethics ..	moral and professional ethic
R3	The other is that he knows something, if you go near any industry, if he does, he has a certain one. Her name she respectful knows. He kind of respects and harmonizes the situation.	
R2	..their talent management must have work skills, that is, their willingness to work, to do work.	Career adaptability
R3	...I think he has to have passion. Passion. Passion means near here he is like eh, he is indeed, "I learned to work for my future". He is more into career adaptability. It means his ability to accept the career in him.	
R4	The key needs to be managed in talent management. We call it career adaptability	

The "Theme" column value "Elements of TM" spans across the lower portion of the table.

Table 5 - Elements, sub-elements, and activities in TM Module

No.	Elements	Sub-elements	Activities
1.	*Communication* -listen to and transmit ideas, information, and opinions clearly and convincingly, both verbally and in writing.	Communication Processes and Elements	a. See It and Believe It b. Sign and body language
		Effective Communication	a. U speak I speak b. Ice-breaking
2.	*Critical Thinking and Problem-Solving Skills*	Information Analysis	a. King of Thinkers

	-contribute new ideas to improve organisational products, services, and activities performed within the job.		b. Pen and paper
		Synthesis and Application	a. Magic box and I
			b. Brainstorming
3.	*Teamwork Skills* -build relationships based on participation and cooperation with one another.	Cooperation	a. Whodunit
			b. United we stand, divided we fall
		Trust	a. Two truths and one lie
			b. Find 10 things in common

No.	Elements	Sub-elements	c. Activities
i.	*Continuous Learning and Information Management* -provide a self-assessment of necessary theoretical or practical knowledge and take measures to acquire and implement the knowledge.	Construction of Ideas	a. If You Had a Magic Wand
			b. Where in the World?
		Evaluation of Ideas	a. If You Could Take a Different Path
			b. Expectations
ii.	*Entrepreneurial Skills* -conduct managerial and entrepreneurial processes in multicultural environments.	Development of Business Ideas	a. The Envelope Exercise
			b. Word Scramble
		Marketing and Sales Methods	a. Brain Teaser
			b. Ice-breaking: Role Play
iii.	*Leadership Skills* -motivate and guide others for effective contribution.	Leadership Personality	a. Make a Shape
			b. Hosts and Guests
		Style of Leadership	a. Captain on Deck
			b. River Crossing
iv.	*Professional Ethics and Moral* -take actions while considering daily professional principles and ethics.	Professional Ethics	a. The white and the black
			b. Where are you?
		Moral Principles	a. Sunken ship
			b. Guardian of treasure
v.	*Career Adaptability* -psychosocial constructs (concern, control, curiosity, and confidence) imply the resources required by individuals to successfully cope with existing and expected career transitions.	Thinkers	a. Concern
			b. Curiosity
		Planners	a. Control
			b. Confident
vi.	*Digital Technology* -set of abilities and skills in which aural, visual, and digital literacy overlap.	Digital Capability	a. Vision Boards
			b. Avatar Bucket Lists
		Leadership Capability	a. 30 Hands
			b. Forced Analogies

Next, content validation was obtained from the seven experts based on the developed module. The module validation for the elements and activity planning were evaluated based on five key features. Table 6 shows element validation and activity planning characteristics:

Table 6 - Five main element validation characteristics

Characteristic	Element 1
1	The content of this module meets its target population.
2	The content of this module can be well implemented.
3	The content of this module corresponds to the allotted time.
4	The content of this module is in line with the stated objectives.
5	The content of this module can help students to become job creators.

The validation of the nine elements was measured using a seven-point Likert scale ranging from 1 (Extremely disagree), 2 (Strongly disagree), 3 (Slightly disagree), 4 (Disagree), 5 (Agree), 6 (Strongly agree), and 7 (Extremely agree). Table 7 and Figure 2 show the mean value for the elements evaluated based on the above characteristics:

Evaluation of the main element characteristics is based on the ANOVA test. In this study, the ANOVA test is employed to compare the effect of the main element characteristics on the developed module in communication, critical thinking and problem-solving, teamwork skills, continuous learning and information management, entrepreneurial skills leadership skills, professional ethics and morals, career adaptability and digital technology. The hypothesis for the ANOVA test as below:

H_0: Non-significant difference mean between the main element characteristics.
H_1: Significant difference means between the main element characteristics.

Table 7 - Mean value of the main element characteristics

No.	Element	Characteristics (mean value)					Average	Standard Deviation
		1	2	3	4	5		
1.	*Communication*	6.2	6.6	5.6	5.6	5.8	5.96	0.43359
2.	*Critical Thinking and Problem-Solving Skills*	6.4	6.6	6.2	6.0	6.0	6.24	0.260768
3.	*Teamwork Skills*	6.0	6.2	6.0	5.6	5.8	5.92	0.228035
4.	*Continuous Learning and Information Management*	6.6	6.8	6.2	6.2	6.8	6.52	0.303315
5.	*Entrepreneurial Skills*	6.6	6.8	5.6	6.2	6.4	6.32	0.460435
6.	*Leadership Skills*	6.6	6.6	5.6	5.6	6.6	6.2	0.547723
7.	*Professional Ethics and Morals*	6.6	6.6	6.0	5.8	6.0	6.2	0.374166
8.	*Career Adaptability*	6.8	6.8	6.2	6.2	6.4	6.48	0.303315
9.	*Digital Technology*	6.6	6.6	6.0	5.8	6.2	6.24	0.357771

In the event of the non-existence of difference means between the main element characteristics, this means that each element characteristic is the same. Then, there is a failure to reject the null hypothesis. Fail to reject the null hypothesis if the p-value is more than alpha, and otherwise. In this study, we used an alpha level of 0.05 for the test.

As illustrated in Table 8, ANOVA showed that the effect of the main element characteristics yielded an F ratio of $F(18,124) = 1.440252$, $p = 0.213752 > 0.05$, indicating that the nine main elements were non-significant.

Table 8 - Mean value of the main element characteristics

Source of Variation	SS	df	MS	F	P-value
Between Groups	1.628444	18	0.203556	1.440252	0.213753
Within Groups	5.088	124	0.141333		
Total	6.716444	132			

4. Discussion and Conclusion

MTM that empowers job creation (Job Creator) was a pilot project of a special HEI programme across university students. As a developed country that strives to reduce unemployment rates that are commonly exacerbated by the lack of suitable jobs, TVET and entrepreneurship are among the excellent choices for graduates. The researchers were confident that the elements stated i. Communication, ii. Critical Thinking and Problem-Solving Skills, iii. Teamwork Skills, iv. Continuous Learning and Information Management, v. Entrepreneurial Skills, vi. Leadership Skills, vii. Professional Ethics and Morals, viii. Career Adaptability, and ix. Digital Technology would function as important components in implementing and empowering career programs for TVET graduates.

Graduates nowadays should be embedded in the current skills which are needed by the industries. Graduates should be ready for the future of work and the key trends of skills. Formerly, industries are more tolerant of the graduate's skills, however as technologies change the skills of graduates also should be enhanced. Vecchi et al. (2021) mentioned that the talent planning strategy is very important because it can obtain an optimal level of talent, competencies, and skills. Therefore, HEI also should start planning their talented graduates to fulfil the demand from the industries. Developing and managing talented graduates with unique skills will lead them to the future of work. Besides that, preparing the graduates based on their talents also will help industries by providing them with quality and efficient job performance to achieve goals and objectives (Omotunde & Alegbeleye, 2021).

In addition, talents are the key factor nowadays that helps graduates become job creators, differentiate them from others and sustainability in careers. This has been agreed by Chege and Wang (2020) who stated technology innovation can lead to job creation as currently, the competencies of digital technology especially in entrepreneurship are more demanding. Apart from that, Chavali et al. (2022) found that the task of social entrepreneurship can turn graduates from job seekers to become job creators due to engagement with community issues. This task will give experiential value to graduates on critical thinking and problem-solving by creating solutions for the problems that there are facing. Due to this, graduates will have a brighter idea about their future careers by creating a job with their talents.

HEI might better consider raising the Business Development Fund (BDF) to create employment opportunities for graduates through start-up companies. First, it will encourage more graduates to begin their early employment with cooperatives to gain knowledge and help to become more productive. Second, graduates will be exposed to elements of better talent management and thirdly, bring positive changes in the job market. It is also hoped that the value of the existing funds will be increased and expanded to other fields of study. Thus, such an approach in exposing graduates to becoming job creators may reduce the unemployment rate due to the current pandemic; graduates are prepared for potential prospective economic problems.

From the findings of this study, it can be concluded that nowadays students need to master these nine elements of talent management. This is in line with the needs of today's industry where the success of organizations depends on talented employees who positively see and perform the tasks entrusted to them (Osborne & Hammoud, 2017). Therefore, one of the prominent factors for organizations or companies to develop higher employee performance is to hire talented employees to maximize work performance. To expand this module, further research is proposed to explore new factors that contribute to the various fields so that a perfect talent management module can be developed specifically for students. This finding adds to human capital and social cognitive theories, and consequently, it may provide the government with more insight into changing the mindset of people from being job seekers to job creators. Besides, from these findings, universities can help to promote entrepreneurial self-employment by offering required support systems such as internship programmes, company incubation programmes, and entrepreneurial supporting environments.

Acknowledgement

References

AAL Report (2017). Assistive Care and Lifestyle Improvement. *Digital Skill Questionnaire*. 1-3.

Agency for Healthcare Research & Quality (2017). Teamwork attitudes Questionnaire. *Teamwork Report*. 1-12.

Al Aina, R. & Atan, T. (2020). The Impact of Implementing Talent Management Practices on Sustainable Organizational Performance. *Sustainability*. 12. 10.3390/su12208372.

Alex D. B. (2001). A Needs Assessment of Communication Skills Needed by Trade and Industry Program Graduates of Wisconsin Indianhead Technical College. Research Report, University of Wisconsin-Stout, 58-61.

Amelink, Catherine & Wade, Christina & Watford, Bevlee & Cuadrado-Medina, Joseph & Folgar-Lopez, Juan & Lewis, Stephanie. (2014). Measuring Innovative Thinking Skills in Innovation Challenge Activities. 121st ASEE Annual Conference & Exposition.

Andrew B. S., Andrew S., Denise Mc G., Susan O., & Elie A. A. (2009). A Tool for Self-Assessment of Communication Skills and Professionalism in Residents. BMC Medical Education, February,1-7

Andrew G. Bill R., & Sarah L. (2019). Mindset Matters: Encouraging an Entrepreneurial Mindset in K-12 Curriculum. Beedie School of Business.

Andrew G., Donald, C. Mellisa G., & Katie H. (2019). Development of A Leadership and Entrepreneurship Skills Assessment Instrument. Research Report, Lawrence Technological University. 15-36.

Aucejo, E. M., French, J., Ugalde Araya, M. P., & Zafar, B. (2020). The impact of COVID-19 on student experiences and expectations: Evidence from a survey. *Journal of Public Economics*, 191.

Bhat, A. (2018). Descriptive Research: Definition, Characteristics, Methods, Examples and Advantages. *QuestionPro*, 1-9. Retrieved from https://www.questionpro.com/blog/descriptive-research/

Bruce et al., 2016. Ethics among five Countries. Research Report. University of Quebec at Trois-Rivières. 25-29

Bryman, A. (2006). Integrating Quantitative and Qualitative Research: How Is It Done? *Qualitative Res.*, 6(1), 97-113.

Chavali, K., Mavuri, S., & Durrah, O. (2022). Factors Affecting Social Entrepreneurial Intent: Significance of Student Engagement Initiatives in Higher Education Institutions. *World Journal of Entrepreneurship, Management and Sustainable Development*, *18*(2), 233-251.

Chege, S. M., & Wang, D. (2020). Information technology innovation and its impact on job creation by SMEs in developing countries: an analysis of the literature review. *Technology Analysis and Strategic Mngmt.*, *32*(3), 256-271.

Chuang, N. K., Lee, P. C., & Kwok, L. (2020). Assisting Students with Career Decision-Making Difficulties: Can Career Decision-Making Self-Efficacy and Career Decision-Making Profile Help? *J. of Hospitality, Leisure, Sport, and Tourism Edu.*, 26.

Dahalan, D., D'Silva, J. L., Ismail, I. A., & Mohamed, N. A. (2020). Entrepreneurship Readiness among Students of Technical and Vocational Education and Training (TVET) Institutions in Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 10(15).

Dan C. (2021). Creating and Recognizing New Opportunities SAGE Publications. 56-75.

Davgid, K. MKichele S., & Diana G. (2017). AARP Survey of Lifelong Learning. NRTA Report.

Department of Statistics Malaysia (DOMO) (2021). Statistics of Unemployed Graduates in Malaysia.

Dobronogov, A., *et al.* (2019). China's Economic Rise: History, Trends, Challenges, And Implications for The United States. *Journal of Economic Studies*, 130(1), 1-11.

Dwi Riyanti, B. P., Sandroto, C. W., & Warmiyati D.W, M. T. (2016). Soft Skill Competencies, Hard Skill Competencies, and Intention to Become Entrepreneur of Vocational Graduates. *Int. Research J. of Business Studies*, 9(2), 119-132.

Elaine R. (2017). Student Leadership Course. Intl Centre Report. 23-28.

Gallardo-Gallardo, E., Thunnissen, M., & Scullion, H. (2020). Talent Management: Context Matters. *International Journal of Human Resource Management.* 31 (4), 457-473.

Ghomi, H. & Ahmadi, H. (2018). Assessment of student's talent management in a corporate university. *Management Science Letters*. 8. 1375-1386.

Human resources management and training. (2014). Human resources management and training. United Nations.

Hunter, S. T., & Lovelace, J. B. (2020). *Revisiting and extending the CIP Theory of Leadership: A Modern Perspective.* In Extending the Charismatic, Ideological, and Pragmatic Approach to Leadership: Multiple Pathways to Success, 254-283. Taylor and Francis.

Ikhlaq S. & Paris D. (2015). Effect of Comfort Zone on Entrepreneurship Potential, Innovation Culture, and Career Satisfaction. 122nd ASEE Annual Conference & Exposition.

ILO (2020). The impact of the COVID-19 Pandemic on Jobs and Incomes in G20 Economies. Retrieve from: https://www.ilo.org/wcmsp5/groups/public/---dgreports/---cabinet/documents/publication/wcms_756331.pdf

Ismail, J. B., Chik, C. T., & Hemdi, M. A. (2021). TVET Graduate Employability: Mismatching Traits Between Supply and Demand. *International Journal of Academic Research in Business and Social Sciences*, 11(13).

Jamaludin, K. A., Alias, N., & DeWitt, D. (2018). Sustainability for Malaysian TVET. *Journal of Sustainable Development Education and Research*, 2(1), 47.

Jwasshaka, S. K., & Fadila, N. (2020). Minimizing Unemployment of Graduates through Technical Education and Training: Meta-Analysis Approach in Nigeria. *Int. J. of Academic Res. in Business and Social Sciences*, 10(2), 34-44

Kampylis, P. & Berki, E. (2014). Nurturing creative thinking. International Academy of Education, UNESCO Report.

Kenayathulla, H. B. (2021). Are Malaysian TVET Graduates Ready for The Future? *Higher Edu. Quarterly*, 75(3), 453-467.

Kronholz, J. F., & Osborn, D. S. (2016). The Impact of Study Abroad Experiences on Vocational Identity among College Students. *Frontiers: The Interdisciplinary Journal of Study Abroad,* 27(1), 70-84.

Laura N., Maria C. G., & Salvatore S. (2012). The Career and Work Adaptability Questionnaire (CWAQ): A first contribution to its validation. *Journal of Adolescence*, 35 (6), 1557-1569.

Ma'dan, M., Imail, M. T., & Daud, S. (2020). Strategies to Enhance Graduate Employability: Insight from Malaysian Public University Policy-Makers. *Malaysian Journal of Learning and Instruction,* 17 (2), 137-165.

Malaysian Investment Development Authority (MIDA) (2020). Are Malaysians Ready for Future Jobs? Retrieve from: https://www.mida.gov.my/are-malaysians-ready-for-future-jobs/

Meeran, Subhan & Koh, Denise & Osman, Kamisah & Zakaria, Effandi & Iksan, Zanaton & Tuan Soh, Tuan Mastura. (2011). Measuring Lifelong Learning in the Malaysian Institute of Higher Learning Context. *Procedia - Social and Behavioral Sciences.* 18. 560-564.

Ministry of International Trade and Industry (MITI) (2018). Industry 4WRD: National Policy on Industry 4.0.

Misni, F., Nik Mahmood, N. H., & Jamil, R. (2020). The Effect of Curriculum Design on The Employability Competency of Malaysian Graduates. *Management Science Letters*, 10(4), 909-914.

Mohamad, M. (2015). A Study on Entrepreneurship Barriers and Entrepreneurial Inclination Among Malaysian Postgraduate Students. *SSRN Electronic Journal*.

Mohamed Jais, I. R., Yahaya, N., & Ghani, E. K. (2021). Talent management in higher education institutions: Developing leadership competencies. *Journal of Education and E-Learning Research*, 8(1), 8-15.

Narayanan, A., Rajithakumar, S., & Menon, M. (2019). Talent Management and Employee Retention: An Integrative Research Framework. *Human Resource Development Review*, 18(2), 228-247.

Omotunde, O. I., & Alegbeleye, G. O. (2021). Talent management practices and job performance of librarians in university libraries in Nigeria. *Journal of Academic Librarianship*, 47(2).

Opoko, A. P., et al. (2018). The Role of Technical and Vocational Education and Training (TVET) in Nation Building: A Review of the Nigerian Case. *International Journal of Mechanical Engineering and Technology*, 09(13), 1564-1571.

Osborn, D. S., Sides, R. D., & Brown, C. A. (2020). Comparing Career Development Outcomes Among Undergraduate Students in Cognitive Information Processing Theory-Based Versus Human Relations Courses. *Career Development Quarterly*, 68(1), 32-47.

Osborne, S., & Hammoud, M. S. (2017). Effective Employee Engagement in the Workplace. *International Journal of Applied Management and Technology*, 16(1).

Ostertagova, E. & Ostertag, O. (2013). Methodology and Application of One-way ANOVA. American Journal of Mechanical Engineering. 1. 256-261.

Painter-Morland, M., Kirk, S., Deslandes, G., & Tansley, C. (2019). Talent Management: The Good, the Bad, and the Possible. *European Management Review*, 16(1), 135-146.

Paris S. Strom & Robert D. Strom (2011) Teamwork skills assessment for cooperative learning. *Educational Research and Evaluation*, 17(4), 233-251,

Peter G. N. (2021). Developing Leadership Skills: Leadership Skills Questionnaire. SAGE Publications. 81-82.

Roslan, R., Misnan, N. I., & Musa, D. (2020). The Influence of Higher Learning Environment and Role Model towards an Entrepreneurial Intention among TVET Students. *Jurnal Intelek,* 15(1), 133-142.

Sampson, J. P. (2017). Cognitive Information Processing (CIP) Theory: Challenges and Opportunities for Integrating Theory, Research, and Practice. In Integrating Theory, Research, and Practice in Vocational Psychology: Current Status and Future Directions. Florida State University Libraries.

Sandroto, C. W., Riyanti, B. P. D., & Tri Warmiyati, M. (2018). Entrepreneurial intention and competencies of vocational and high school graduates in Indonesia. *Pertanika Journal of Social Sciences and Humanities*, 26(T), 225-236.

Sart, G. (2014). The impacts of strategic talent management assessments on improving innovation-oriented career decisions. *Anthropologist,* 18(3), 657-665.

Shazaitul Azreen Rodzalan, Maisarah Mohamed Saat (2015). The Perception of Critical Thinking and Problem-Solving Skill among Malaysian Undergraduate Students*, Procedia - Social and Behavioural Sciences*, 172, 725-732,

Sima, V., Gheorghe, I. G., Subić, J., & Nancu, D. (2020). Influences of the industry 4.0 revolution on the human capital development and consumer behaviour: A systematic review. *Sustainability* (Switzerland), 12(10).

Sulaiman, N. L., & Salleh, K. M. (2016). The development of technical and vocational education and training (tvet) profiling for workforce management in Malaysia: Ensuring the validity and reliability of TVET data. *Man in India*, 96(9), 2825-2835.

Sulaiman, N., Ismail, R., Saukani, N., & Lelchumanan, B. (2021). Skilled Labour Demand in The Malaysian Construction Sector. *Journal of Sustainability Science and Management,* 16(4), 236-252.

United Nations Conference on Trade and Development (2020). Covid-19 and E-Commerce: Impact on Businesses and Policy Responses. Retrieve from: https://unctad.org/system/files/official-document/dtlstictinf2020d2_en.pdf

Uzunboylu, Hüseyin & Hürsen, Çiğdem. (2011). Lifelong learning competence scale (Lllcs): The study of validity and reliability. Research Report, Near East University.

Vecchi, A., della Piana, B., Feola, R., & Crudele, C. (2021). Talent management processes and outcomes in a virtual organization. *Business Process Management Journal*, 27(7), 1937-1965.