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A Study on Internship Determinants that Influence Company Contentment among Computer Science Students in UiTM Tapah

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Abstract

In Universiti Teknologi MARA (UiTM), the internship training for Diploma in Computer Science students is conducted over the course of two months per semester. It is stipulated in the curriculum, aiming to develop the students' ability to apply academic knowledge and theories at the workplaces, enhance their soft skills, and familiarize themselves with the actual working environments. It also intends to make the students' skills being relevant in the job market by exploring and engaging various partners and networks among the industries. It is because many employers regard this period as a chance to vet new employees for future employment. However, the number of graduates continues to increase annually, and this could increase the graduate unemployment rate. Therefore, this study intends to discover the determinants that influence Company Contentment using Multiple Linear Regression Analysis. The obtained results could help the students to seek a way out due to the intense competition among them. This study involved 113 Diploma in Computer Science students at UiTM Perak Branch, Tapah Campus who attended internship at particular companies. The data is the evaluation marks assessed by the internship supervisors in the companies to the assigned students. The evaluation marks were awarded by considering seven determinants of Interpersonal Skills, Communication Skills, Intellectual Skills, Initiative Skills, Job Attitude, Personal Efficiency, and Leadership Skills. It was found that Communication Skills, Job Attitude, and Leadership Skills influenced Company Contentment.

Keywords: Internship, Company Contentment, Multiple Linear Regression.

Introduction

As technology evolves rapidly, the field of computing becomes a worldwide-focus that results in a high demand for programmers. A large number of universities aims to produce graduates who are proficient in software development with a strong foundation in Information Technology (IT). Universiti Teknologi MARA (UiTM) also offers Computer Science Programmes starting from undergraduate to postgraduate levels – Diploma to Doctor of Philosophy (PhD).

UiTM designed good study plans and curriculum for Diploma in Computer Science by providing courses from abstraction to implementation and application. The content planned for the curriculum includes courses such as basic computing, programming, operating systems, networking, databases, as well as mathematics and English. Part of this curriculum is designed to give internship experiences to the students in various companies, manufacturers, and offices across the country to let them feel and uncover the real working environments. Graduates of this programme can seek employment in the fields of software development, web design, web programming, Personal Computer (PC) maintenance, and computer-related fields. The internship training for Diploma in Computer Science students is conducted over the course of two months in every semester.

Generally, an internship programme is a great exposure for the students involve themselves with the real working environments in order to develop employability skills for their future career (Posner, 2008). The internship training experiences are valuable to enhance their academic knowledge, soft skills, and help them acquire additional skills that are needed in the workplace in the near future. The internship programme is ordinarily offered to undergraduates worldwide. It becomes one of the prerequisite courses that must be taken before certain programmes' graduation. One of the Ministry of Higher Education's (MOHE) objectives in education is to produce professionals who meet the needs of human resources. This objective initiates a curriculum review to integrate internship programmes with academics in the higher education curriculum (Lai et al., 2011).

The number of graduates continues to increase from year to year, resulting in the increase in competition for the labor market among Higher Education Institutions (Wan et al., 2013; Agus et al., 2011). Typically, each graduate will strive to find a job that is relevant or closely related to their field of study upon graduation. The Malaysian government is concerned with the problem of graduate unemployment and seeks a way out due to the intense competition among them (Ismail et al., 2004). This problem arises due to the lack of work experiences among the graduates, coupled with the lack of confidence among employers to hire new graduates to work (The Star, 2007). This also occurs due to the mismatches between graduate skills and employers' requirements (Asma & Lim, 2000; Yogeswaran, 2005; Wong & Hamali, 2006).

Internships make the students' skills become relevant in the job market by exploring and engaging various partners and networks among the industries. Many employers regard this period as a chance to vet new employees for the future employment. According to Knouse et al (1999), aside from gaining experiences and improving students' self-confidence through internship trainings, students who underwent internship programmes are offered job opportunities by the organizations faster compared to students who have never attended any internship programmes. This study intends to identify determinants that influence Company Contentment among Computer Science students throughout the internship period.

Previous Studies

Internship training has generally been seen as an effective instrument for equipping students with employment opportunities. It gives the students their first experiences of real-world jobs while simultaneously providing them with the opportunity to gain hands-on experiences in the sectors of their preferences. Furthermore, Barrow and Walsh (2002) elaborated the

higher education being a fundamental of generic learning objectives, whereas training emphasizes job specifics and is within the employer's supervision. Both of these factors influence the efficacy of lifelong learning. Additionally, Lai et al. (2007) concluded that the training programmes provide valuable inputs that enable a platform for the students to enhance their soft skill competencies while also attaining their hard skills.

The Malaysia Education Blueprint 2015–2025 (Higher Education) highlights the need for graduates who can successfully manage difficult issues such as global warming and economic crises among others. As a result, graduates must not only have the necessary knowledge and technical competence, but also the ability to make ethical decisions and the resilience to deal with the fast change (Kenayathulla et al., 2019). In addition, the Malaysia Qualification Framework (MQF) Version 2.0 (2017) was clustered, re-profiled, and maintained from the first version to provide a framework to bridge the gap between education, work, and responsible global citizenship while integrating the systems. This is verifiable by the skills and knowledge of the learners to perform particularly in professional, educational, and their other life experiences followed five clusters of learning outcomes designed such as knowledge and understanding, cognitive skills, functional work skills (focus on practical skills, interpersonal skills, communication skills, digital skills, numeracy skills and leadership, autonomy and responsibility), personal and entrepreneurial skills and ethics and professionalism.

The skills of the students vary depending on the programme they are enrolled in. The majority of employers have their own goals and objectives for their trainers. A study by Mustapha et al. (2018) found that there was a difference in assessment scores between company expectations and observation marks related to Interpersonal, Communication, Intellectual, Initiative, Work Attitude, Self -Competence and Leadership Skills. The study reported that computer science students showed excellent performance and achieved company expectations in their internships as they were able to apply job knowledge and skills to gain valuable experience in preparing for a real work environment in the future. According to Abdullah et al. (2007), the required technical skills for engineering students include acquiring and applying fundamental engineering knowledge, competency in theoretical and research engineering, competency in application and practically-oriented engineering, competency in theoretical and research engineering, technical competence in a specific engineering discipline, the ability to use a system approach to design and evaluate operational performance, the ability to design and conduct experiments, as well as the ability to analyze and interpret data.

Prior researches in Malaysia has shown that researchers with engineering backgrounds and technological disciplines are more interested in investigating employability skills through industrial training from the perspective of employers (Abdullah et al., 2007; Lai et al., 2007; Lim et al., 2016; Ahmad et al., 2018; Mustapha et al., 2018). Later, a study by Kenayathulla et al (2019) also realized the importance and competency of hospitality for culinary and bakery students to master the students' knowledge and skills. Therefore, some studies designed questionnaires or evaluation form based on five elements of generic student attributes (GSA) established by MOHE namely communication skills, teamwork skills, critical thinking, moral ethics, and long-term learning (Khalid et al., 2014; Hassan et al., 2012).

However, there are some scholars who preferred to separate the attributes into two categories that address soft skills and hard skills (Lai et al., 2007; Lim et al., 2016).

From the employer's perspective, most of the findings are satisfactory, but there are some gaps that need to be filled. Hassan et al (2012) revealed that all the employers rated their trainees' critical thinking skills with the lowest rating compared to other GSAs. It indicated that the trainees still having difficulties in applying their academic knowledge and experiences in industrial environment. This raises the question of whether the curriculum of most programs exposes their students to higher order thinking skills or not. Patacsil & Tablatin (2017) suggested that universities should enrich soft skills and entry level hard skill components of their curriculum. In addition, students ought to be constructive critical thinkers in a creative way (Zehrer & Mossenlechner, 2009).

Aside from critical thinking, the trainees must also improve their communication skills (Hassan et al., 2012; Ahmad et al., 2018; Khalid et al., 2014). Employers thought that trainees needed to enhance their English communication skills, according to the studies. Some students are hesitant to speak in English. According to Subramaniam & Harun (2013), employers have recognized that internship students lack public speaking skills, particularly when dealing with consumers. To address this difficulty, the study advised that students learn oral communication and have strong competence, particularly marketing students who are exposed to a lot of collaborative collaborations with other English-speaking customers at their workplaces.

Methodology

This study involved 113 Diploma in Computer Science (CS110) students of UiTM Perak Branch, Tapah Campus who underwent internship at different selected companies chosen by themselves. The data is about the evaluation marks assessed by the internship supervisors of the respective companies. The evaluation marks were given by considering seven determinants (criteria) namely Interpersonal Skills, Communication Skills, Intellectual Skills, Initiative Skills, Job Attitude, Personal Efficiency and Leadership Skills as designed in an evaluation form named "The Company's Assessment of Industrial Training Students, UiTM Perak Branch, Tapah Campus (Mustapha et al., 2018). The dependent and independent variables involved in this study are presented in Figure 1.

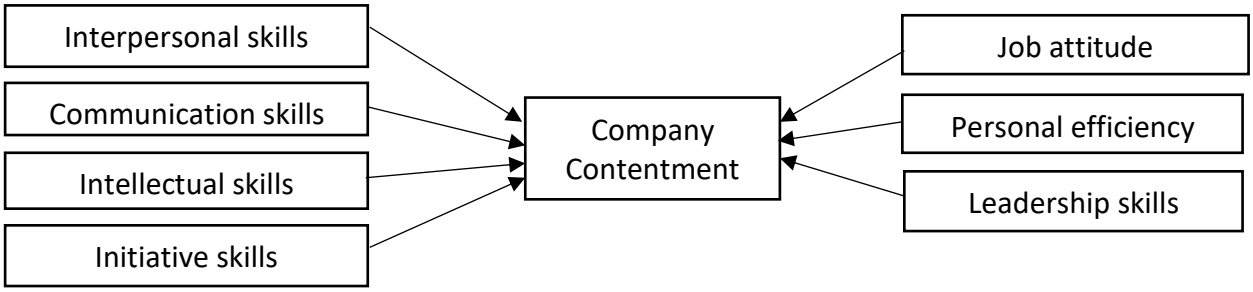

Figure 1. Conceptual Framework of the Study

This study employed the Multiple Linear Regression Analysis to investigate the determinants that had the potentials in influencing Company Contentment. Initially, the Multiple Linear

Regression assumptions had to be fulfilled before performing the regression analysis, whereby the hypotheses of this study are stated and tested as follows:
H_0: Interpersonal Skills, Communication Skills, Intellectual Skills, Initiative Skills, Job Attitude, Personal Efficiency, and Leadership Skills do not influence Company Contentment.
H_1: Interpersonal Skills, Communication Skills, Intellectual Skills, Initiative Skills, Job Attitude, Personal Efficiency, and Leadership Skills influence Company Contentment.

By referring to Montgomery et al., (2001) and Zulkifli et al. (2019), H_0 will be rejected if p-value ≤ significance value (α) = 0.05. Rejection of H_0 means that the variable (s) significantly influences Company Contentment. The multiple linear regression model is shown below (1).

$$Y=\beta_0+\beta_1X_1+\beta_2X_2+...+\beta_nX_n+\varepsilon \quad (1)$$

where Y is the dependent variable, $X_1, X_2, ..., X_n$ are the independent variables, ε is the model's error term, β_0 is the intercept (constant) term and the β's are the slope coefficient for each of independent variable. There are assumptions that must be fulfilled to ensure that the analysis is reliable and valid.

i. Linear of residuals
The linearity assumption is tested using scatter plots. The linearity assumption is met if the scatter plot follows a linear pattern (not a curvilinear pattern).

ii. Normality of residuals
This assumption is justified using Normal Probability (Normal P-P) Plot. It helps in determining if the errors are normally distributed by comparing the observed (sample) standardized residuals.

iii. Multicollinearity among independent variables.
Multicollinearity is assessed using Variance Inflation Factor (VIF) to measure how much the variance of the regression coefficients is inflated by multicollinearity problems. It exists whenever an independent variable is highly correlated with one or more independent variables in a multiple regression equation. A maximum accepted VIF would be 5.0. If the degree of correlation between the variables is high, it can cause problems in fitting the model and interpreting the results. Then, this study further looked at the tolerance statistics. Tolerance statistics of more than 0.2 is claimed as having no multicollinearity problems.

iv. Independence of error terms.
This assumption is evaluated using Durbin-Watson statistic that statistically measures autocorrelation and serial correlation in residuals from regression analysis. The Durbin-Watson statistic will always have a value of between 0 and 4. This assumption claims that the residuals are independent as the Durbin-Watson statistic falls within the range of between 1 and 3.

Results and Discussions

This section discusses the assumptions of the analysis and the multiple linear regression results obtained by this study.

Assumptions of Multiple Linear Regression

Linear of Residuals Results

This is a scatter plot of the standardized residuals versus the predicted dependent (Company Contentment) value. There is a linear relationship that existed between the independent variables and the dependent variables as the scatter plot follows a linear pattern as displayed in Figure 2.

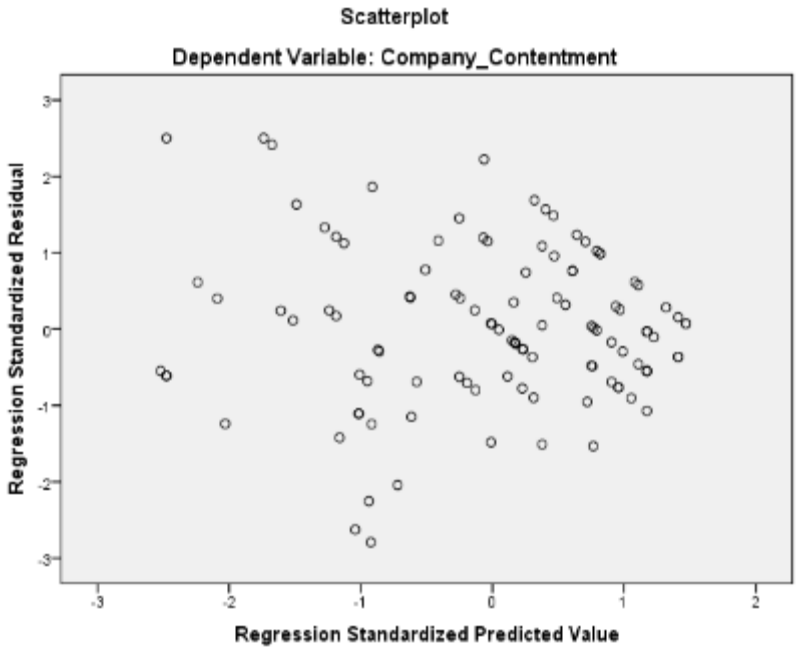

Figure 2. Scatter plot of Regression Standardized Residuals against Regression Standardized Predicted Value

Normality of Residuals Results

Figure 3 shows the normal P-P plot for the residuals of the model. The straight line angled at 45 degree is the normal distribution and the actual distribution (observed) is shown as a deviation from the straight line. This means that the residuals is not violated whenever all the points move closer to diagonal line. Thus, the residuals of the model are normally distributed.

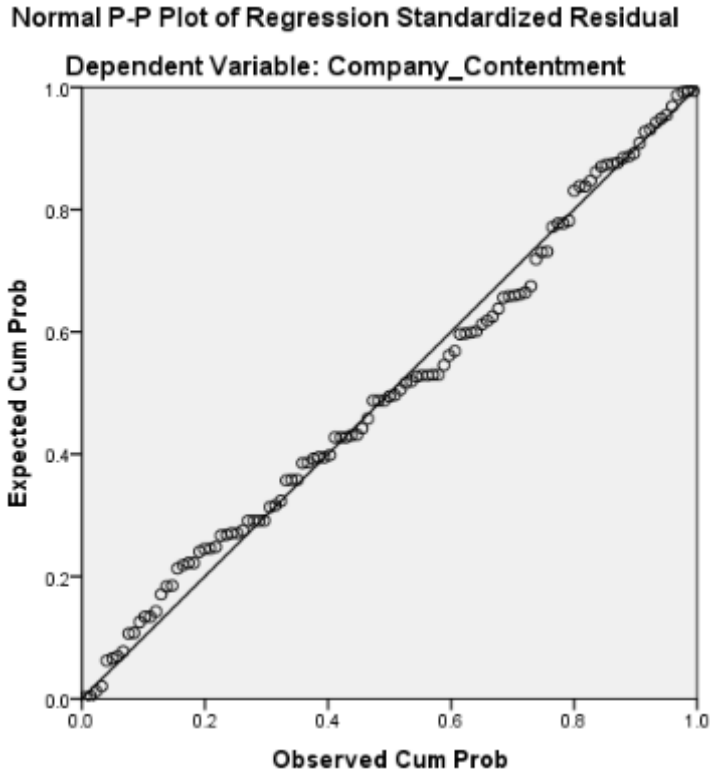

Figure 3. The normal P-P plot for the residuals of the model

Independent for Residual Results

The Durbin-Watson statistic obtained in this study was 1.742 which implied the independent for the residuals since the statistic lies between 1 and 3. It means that there is no autocorrelation in the data. Thus, this assumption was also met.

Multicollinearity among Independent Variables Results

Table 1 displays the collinearity statistics of the study. It is found that this multicollinearity assumption is satisfied as all the independent variables showed Tolerance statistics of above 0.2 and VIF statistics of below 5. Thus, this assumption is also met because there is no multicollinearity that exists in the data.

Table 1.
Collinearity Statistics

Independent variables	Tolerance	VIF
Interpersonal Skills	0.245	4.090
Communication Skills	0.260	3.845
Intellectual Skills	0.317	3.150
Initiative Skills	0.365	2.741
Job Attitide	0.220	4.539
Personal Efficiency	0.400	2.502
Leadership Skills	0.305	3.275

Results of the Existence for the Outliers

Table 2 displays the Cook's Distance statistics. It identified that the minimum, maximum, mean and standard deviation statistics were all below 1. It means, individual cases were not improperly influencing the model. This indicates that no significant outliers exist.

Table 2.
Residuals Statistics

Cook's Distance	Statistics
Minimum	0.000
Maximum	0.426
Mean	0.018
Standard deviation	0.054
N	113

Multiple Linear Regression Analysis Results

This analysis found that the F-statistics was 30.258 with the p-value of 0.000, being less than the significance level of 0.05 – indicating that the estimated regression was valid and statistically significant. Thus, the model explained a significant amount of the variance in Company Contentment and the estimated regression was valid. The multiple linear regression results found that the coefficient of determination (R^2) in this study was 0.673. This means, the linear regression explained 67.3% of the variance in the data.

Based on Table 3, the regression results discovered that Communication Skills, Job Attitude, and Leadership Skills were significant at 0.05. This information highlights that these three independent variables significantly contribute to Company Contentment during the internship. The estimated coefficient of Communication Skills, Job Attitude, and Leadership Skills were 0.178, 0.529 and 0.192 respectively. The model was written as in (2).

$$\hat{Y} = 1.428 + 0.178X_2 + 0.529X_3 + 0.192\epsilon$$

(2)

For Communication Skills, the coefficient was 0.178, implying that for every addition in Communication Skills, Company Contentment level will rise by 0.178, while the other independent variables remain constant. Then, for every addition in Job Attitude level, Company Contentment level will rise by 0.529, while the other independent variables remain constant. Lastly, for every 1 level rise in Leadership Skills, the Company Contentment level will rise by 0.102, while the other independent variables remain constant.

Table 3.
Multiple Regression Analysis Results

Independent variables	Model	Coefficient, β	Standard deviation	t	p-value
Constant	β_0	1.423	0.623	2.284	0.024*
Interpersonal skills	X_1	-0.048	0.093	-0.519	0.605
Communication skills	X_2	0.178	0.086	2.068	0.041*
Intelectual skills	X_3	-0.007	0.154	-0.048	0.961
Initiative skills	X_4	-0.021	0.151	-0.138	0.891
Job attitide	X_5	0.529	0.128	4.130	0.000*
Personal efficiency	X_6	0.102	0.141	0.724	0.471
Leadership skills	X_7	0.192	0.089	2.163	0.033*

Note: * p-value ≤ 0.05

Conclusion

In conlusion, this study sought the determinants that potentially influenced Company Contentment among Diploma in Computer Science students during their internships. Three significant determinants of Communication Skills, Job Attitude, and Leadership Skills influenced Company Contentment. The internship information yielded from this study can assist university managements and educators in preparing their students with the knowledge and skills required to succeed in the real workplaces in the future, before completing their university studies. This is because internship training is also a part and a parcel of the university's and faculty's responsibility. It is hoped that this information can contribute to the literature reviews of intership contentment in the future.

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References

Abdullah, S., Zaharim, A., Harris, S., Omar, M. Z., & Basri, H. (2007). Engineering Education: Using Technical Attributes to Analyse The Employers' Expectation of Future Engineering Graduates in Malaysia. *Proceedings of the 4th WSEAS/IASME International Conference on Engineering Educatio*n, 191–195.

Agus, A., Awang, A. H., Yussof, I., & Makhbul, Z. K. (2011). The Gap Analysis of Graduate Employees' Work Skills in Malaysia. *Proceedings of Business and Information, Bangkok, Thailand: International Business Academics Consortium and Academy of Taiwan Information Systems Research,* 8, 1–15.

Ahmad, M. F., Hisyam, M., Ali, M., & Sulaiman, Z. (2018). Employability Skills through Industrial Training: Employers' Perspective. *Journal of Social Science and Humanities*, 1(5), 1–5.

Asma, A., & Lim, L. (2000). Cultural Dimensions of Anglos, Australians and Malaysians. *Malaysian Management Review, 36*(2), 1-17.

Barrows, C., & Walsh, J. (2002). Bridging the Gap between Hospitality Management Programs and the Private Club Industry. *International Journal of Contemporary Hospitality Management*, 14(3), 120–127.

Hassan, S., Zamberi, M.M., Khalil, S., Sanusi, N., Wasbari, F., & Kamarolzaman, A.A. (2012). Company Perception on the Employability Skills of Industrial Training Students. *Journal of Technical Education and Training,* 4(2), 1–8.

Ismail, A. H., Tan, L. L., & Wee, S. H. (2004). The Relationship of Relevant Accounting Internship and Subsequent Academic Performance, 1–24.

Kenayathulla, H. B., Ahmad, N. A., & Idris, A. R. (2019). Gaps between competence and importance of employability skills: evidence from Malaysia. *Higher Education Evaluation and Development*.

Khalid, N., Hamid, N. H., & Sailin, R. (2014). Importance of Soft Skills for Industrial Training Program: Employers' Perspective. *Asian Journal of Social Sciences and Humanities*, 3, 10–18.

Knouse, S., Tanner, J., & Harris, E. (1999). The Relation of College Internships, College Performance, and Subsequent Job Opportunity. *Journal of Employment Counselling*, 36, 35–43.

Lai, F. W., Abd Karim, Z. A., & Johl S. K. (2007). Examining a Successful Industrial Training Program Model: Inter-Relationship among the Three Main Stakeholders: Students, University and Host Companies. *Proceedings of the 2nd Regional Conference on Engineering Education*, 24–30.

Lai, F. W., Karim, Z. A. A., & Johl, S. K. (2011). Examining a Successful Industrial Training Program Model: Inter-relationship among the Three Main Stakeholders: Students, University and Host Companies. *Review of Higher Education and Self-Learning*, 4(8), 16–26.

Lim, K. C., Mahat, N. I., Rashid, B., Razak, N. A., & Omar, H. (2016). Assessing Students' Knowledge and Soft Skills Competency in the Industrial Training Programme: The Employers' Perspective. Review of European Studies, 8 (1). pp. 123-133. ISSN 1918 7173.

Malaysia Qualification Framework (MQF) Version 2.0. (2017). Retrieved from https://www.mqa.gov.my/pv4/document/mqf/2019/Oct/updated%20MQF%20Ed%202%2024102019.pdf.

Montgomery, D. C., Peck, E. A., & Vining, G. G. (2021). *Introduction to linear regression analysis*. John Wiley & Sons.

Mustapha, N. R. N., Jamian, N. H., Ali, N. A., & Saleh, S. S. M. (2018). Company Perception on Practical Training: A Case Study of Computer Science Students UiTM Perak, Tapah Campus. *Multidisciplinary Informatics Journal*. 1(1), 1–8.

Patacsil, F. F., & Tablatin, C.L. (2017). Exploring the Importance of Soft and Hard Skills as Perceived by IT Internship Students and Industry: A Gap Analysis. *Journal of Technology and Science Education*, 7, 347–368.

Posner, B. Z. (2008). On leadership. AACSB International, 7, Biz Ed26–27 3.

Subramaniam, G. K. J., & Harun, R. N. S. R. (2013). The Ability of the Polytechnics Marketing Student in using Good English Oral Communication Skills during Industrial Training. *English for Specific Purposes World*. 14(39), 1–15.

The Star. (2021). Varsity-industry ties to boost employment. Retrieved from https://www.thestar.com.my/news/community/2007/09/05/varsityindustry-ties-to-boost-employment.

Yogeswaran, K. (2005). Regional Conference on Investment Climate and Competitiveness in East Asia. *Economic Plan Unit Malaysia*. 31–44.

Wan, C. S., Yang, J. T., Cheng, S. Y., & Su, C. (2013). A Longitudinal Study on Internship Effectiveness in Vocational Higher Education. *Educational Review*, 65(1), 36–55.

Wong, M., & Hamali, J. (2006). Higher Education and Employment in Malaysia. *International Journal of Business and Society*, 7 (1), 102–119.

Zehrer, A., & Mossenlechner, C. (2009). Key Competencies of Tourism Graduates: the Employers' Point of View. *Journal of Teaching in Travel & Tourism*, 9(3-4), 266–287.

Zukifli, I. Z., Jamian, N. H., & Zulkipli, F. (2019). Factors Influencing Environmental Sanitation among Undergraduates at UiTM, Tapah Campus. *International Journal of Recent Technology and Engineering (IJRTE)*, 8(2S11).