The influence of participation in extracurricular activities to the employability of Industrial Engineering graduates of one Private University in the Philippines

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Abstract – Filipinos have been regarding education as the leading avenue of success. Having the system patterned from the American Education structure, education in the country provides basic learning needs and a foundation on which successive learning can be based on. Aside from traditional learning inside the classroom, extracurricular activities (ECAs) are also provided for students, which basically have the same goal as that of courses in a curriculum. These activities however, let the students have experiences not included in formal education. Moreover, ECAs are being promoted in some college institutions considering that it benefits students in ways that would prepare them for their future. Certain companies focus on investing on leadership development of their employees to make them globally competitive. This paper focused on determining the degree or extent of influence of ECAs to the employability of the University of Santo Tomas (UST) Industrial Engineering graduates of Batches 2013, 2014, and 2015. A survey was administered to 43 sampled graduates. Logistic regression was used in determining the influence of participation in ECAs to the employability of the graduates. Correlational analysis showed that there exists a significant relationship between and among independent variables of number of jobs, number of initial interview, level of participation and soft skills developed through ECAs. Meanwhile, Paired Sample Means Test exhibited that at 95% level of significance, there exists no relationship between the soft skills possessed by the graduates and as expected by the company with which they are employed. Recommendations were provided to enhance the activities offered in UST towards increasing employability rate of graduate students.

Keywords - employability, extracurricular activities, Industrial Engineering, soft skills

INTRODUCTION

The rapidly changing technology and the emergence of globalization have greatly influenced the world. One area that it has affected is the business world. Nowadays, companies have been very keen in hiring employees because of the need of high-skilled employees to keep pace with these new trends and developments and be globally competitive. According to the results in the survey conducted by the American Management Association (AMA) [1], a number of soft skills along with certain hard skills are the attributes that should already be incorporated as early as possible in the learning experience.

At present, employment requirements include soft skills as one of the qualifications when applying for a job. According to Lippman, Ryberg, Carney and Moore [2], “soft skills refer to a broad set of skills, competencies, behaviours, attitudes, and personal qualities that enable people to effectively navigate their environment, work well with others, perform well and achieve their goals.” Moreover, the article entitled, “The Soft Skills Disconnect”, presented that it is not enough to only be highly trained in technical work but one should also develop soft skills [3]. Furthermore, a study conducted by Harvard University, Carnegie Foundation, and Stanford University, showed that 85% of job success comes from having well-developed soft and people skills and only 15% of job success comes from technical skills and knowledge [3]. This only shows that employers
do not only look on to the educational attainment of an applicant, but also on the intangible aspects, such as their abilities and personalities, are also now being scrutinized by the company.

The high competition for the newly graduates in the labour market requires competency from each individual. Because of this, employers expect graduates to make themselves more distinguished from other individuals. Employers and policy makers tapped the educators to provide a medium of instruction that would incorporate both the “hard” and “soft” skills for the students to be “workplace-ready” when entering the job market[4]. This implies that the workforce that comprises the newly graduates do not possess the necessary soft skills that employers are looking for. Farrugia [5] stated in his study that since fresh graduates have little or no work experience, participation from extracurricular activities provides the qualities not listed in the resume which as a result affects the individual’s labour market.

To address the problems stated earlier, extracurricular activities (ECAs) are being promoted in higher education institutions. ECAs, as of present, have no clear definition. Although studies have been conducted to shed light on what it really means. A proposed definition was presented by a group of researchers who wished to suggest a precise interpretation of extracurricular activities. ECAs are defined as academic or non-academic activities that are conducted under the auspices of the school but occur outside of normal classroom time and are not part of the curriculum [6]. Given this proposed definition, the researchers can confidently claim that active involvement to student organizations recognized by school administration is considered an extracurricular activity.

Since ECAs are duly recognized by universities, they present several benefits to students who wish to participate. A study was conducted by Massoni [7] to have knowledge of the positive effects of ECAs to students. One notable effect presented, which is also relevant to this paper, is the “positive aspects that students need to become productive students and adults” [7]. According to Massoni, participating in ECAs help students learn and develop skills like leadership, teamwork, organization, and other traits that companies usually look for in an applicant they plan to employ. A study by Lau, Hsu, Acosta & Hsu [8] shows that there are a number of studies that link extracurricular activities to the development of employability skills.

Furthermore, a literature review was accomplished by Cicekli [9] which provided a list of qualities that employers require the graduates applying to companies. Among these are communication, interpersonal and teamwork skills, leadership skills, cognitive skills, and others. Soft skills are now more sought after in the global workforce. These generic qualities have been collected from different previous studies that focused on the soft skills that Human Resources (HR) seeks from the new graduate employees.

The shift from technical skills to generic skills, more commonly known as the soft skills, have reached the Philippines due to globalization that is widely prevalent at present. Based on the Commission on Higher Education Memorandum Order (CMO) No. 15 Series of 2008 on the Revised Policies and Standards for the Degree of Bachelor of Science in Industrial Engineering [14], graduates of the BS IE program must have specialized knowledge and skills in the mathematics (e.g. algebra, trigonometry, calculus, statistics, etc.), physical sciences (e.g. chemistry, physics, etc.), core courses (e.g. operations research, productions systems, ergonomics, systems engineering, etc.) and allied courses (e.g. economics, accounting, engineering management, etc.); which pertain to the technical or hard skills. Moreover, the said CMO also requires that the BS IE curriculum to contain language, social science, and humanities courses; which implies the non-technical or soft skills. The non-technical courses comprise 53 out of 185 or 29% of the minimum credit units of the BS IE curriculum. The CMO mandates that all private higher education institutions such as the University of Santo Tomas who offers BS IE program to adhere to these policies and standards in order for its graduates to keep pace with the demands of global competitiveness.

The study aims to determine the influence of extracurricular activities to the employability of UST IE graduates of Batches 2013, 2014, and 2015. It also aims to measure the gap between the soft skills required by the employers and the soft skills acquired by the graduates through extracurricular activities.

**OBJECTIVES OF THE STUDY**

The primary objective of the study is to determine whether participation in extracurricular activities has an influence to the employability of the Industrial Engineering graduates of the University of Santo Tomas, Manila, Philippines. Also, the soft skills or
attributes required by a hiring company, the soft skills acquired in joining extracurricular activities and the gap between the soft skills acquired and required would be addressed to scrutinize how each of the factors contribute to the study.

**Materials and Methods**

The research design that was used by the researchers was correlation. Correlation measures statistically the relationship between two or more factors [10]. It presents how one factor may affect the other but does not necessarily imply that this factor causes the other. The researchers used two survey questionnaires to obtain the data needed for the study. These questionnaires were distributed online through Google Forms. The respondents that were considered for the two survey questionnaires were the official graduates of BS Industrial Engineering program from Batches 2013, 2014, and 2015 and the HR Department of the company with which the graduates are working for. The official list of graduates was requested from the UST Registrar’s Office. The survey was adopted from the questionnaire developed by Thomas Farrugia [5] and was modified by the researchers to obtain the needed information in the study. The Likert scale was utilized for both survey questionnaires to obtain the perception of each respondent when it comes to the particular statement being asked. This was used in order to gauge the degree of agreement of the respondents which would affect the hypothesis of the study. The questions provided in the survey questionnaire for the HR Department was similar to the second part of the survey questionnaires provided to the IE graduates. The Likert scale was used to measure the perception of each respondent towards the question. In analysing the data gathered from each respondent, i.e. the graduates and HR representatives, the researchers used the Statistical Package for the Social Science (SPSS) version 23. The gap between the answer of the HR representative and the graduate was identified through descriptive statistics. Paired Two Sample for Means t-test was used to identify the correlation between the possessed and expected soft skills. After which, logistic regression analysis was used to determine if participation in ECAs affects the employability of the graduate.

**Sampling Size Determination**

Based on the official list of IE graduates of Batches 2013, 2014, and 2015 that was provided by the UST Registrar’s Office, the total population is 286. To determine the appropriate sample size for this study, the researchers used Cochran’s Sample Size Formula since the survey questionnaire contains both continuous and categorical or dichotomous variables. The primary variables used in Cochran’s Sample Size Formula are:

1. **Alpha Level**- is the probability of the difference or risk the researcher is willing to accept even though there exists no differences between the statistical analyses [11]. In most educational research studies, the acceptable alpha level used is either 0.05 or 0.01. The researchers used the alpha level of 0.05 in determining the sample size of the study.

2. **Margin of Error**- the risk the researcher is willing to accept in the study [11]. The acceptable margin of error in most educational research studies that contains continuous and categorical variables is 0.03 and 0.05 respectively. In this study, the researchers used a 0.05 margin of error.

3. **Standard Deviation**- a measure of the variations within a set of data [12]. Since the researchers used continuous variables in the study, the estimate of standard deviation in the population is computed as follows:

   \[
   s = \frac{4 \text{ (number of points on the scale)}}{6 \text{ (number of standard deviation)}} = 0.6667
   \]

   The formula and computation for the sample size used in the study is shown below.

   \[
   n = \frac{(t)^2 \times (s)^2}{(d)^2}
   \]

   \[
   n = \frac{(1.96)^2 \times (0.6667)^2}{(4 \times 0.05)^2} = 43
   \]

   Where:

   \( t = \) value for selected alpha level of .025 in each tail

   \( s = \) estimate of standard deviation in the population

   \( d = \) margin of error for mean being estimated

Therefore, for a population of 286 graduates, the required sample size is 43.

**Ethical Considerations**

According to the Centre for Innovation in Research and Teaching [13], considering ethics in a research study is important mainly because it prevents the researchers from giving false information to the public, it promotes an honest environment between the researcher/s and other participating person/s or institution/s used in the study, and it assures the public that the research has been conducted properly in accordance with the applicable standards of different issues. In line with this, the researchers did the following to establish a study that is ethical:
1. Cited the authors of the journal articles, studies, and other documents that were used in the study
2. Sought consent from the respondents of the survey and guaranteed the confidentiality and anonymity of their answers with respect to the study
3. Ensured that the work of the respondents was not affected by sending survey questionnaire during their non-office hours
4. Ensured that only the voluntary respondents were included in the study
5. Ensured the accuracy and factualness of the data provided
6. Cited Thomas Farrugia for modifying and adopting the research instrument that he used in his study
7. Guaranteed the confidentiality of the information provided by the HR representative who responded in the survey.

RESULTS AND DISCUSSION

Correlation Analysis. The strength and direction of the relationship between two variables were measured using the correlation analysis. The Pearson Correlation provided in SPSS was used by the researchers across all independent variables to determine the strength and relationship between two variables. Pearson’s coefficient of correlation ranges from positive (+1) to negative (-1). A positive one (+1) correlation indicates a perfect positive relation while a negative one (-1) correlation indicates a perfect negative relation. A value of zero (0) means that the two variables have no correlation at all. Table 1 shows the correlation matrix across all independent variables that are significant at 0.05 level (see Table 1 in the Appendix).

The following were derived from the survey results:
1. The number of jobs has a correlation with the number of initial interviews.
   There is a positive correlation between the two (2) independent variables; this implies that the higher the number of initial interviews called for the higher the number of jobs that a respondent can occupy.
2. Level of participation has a correlation with creativity and innovation skills developed.
   The two independent variables are positively correlated. This means that the respondents’ level of participation to any type of extracurricular activities can increase their creativity and innovation skills.
3. Collaboration and team building skills developed have a correlation with critical thinking and problem solving skills developed.
   The two independent variables are positively correlated. This shows that as critical thinking and problem skills of an individual are developed, collaboration and team building skills are developed as well. This is applicable in a setting where an individual is working with a group.
4. Effective time management skills developed have a correlation with critical thinking and problem solving skills developed.
   The two independent variables are positively correlated. This shows that as critical thinking and problem solving skills are developed, the effective time management skills are developed as well.
5. Data/Information and technology related skills developed have a correlation with collaboration and team building skills developed.
   The two independent variables are positively correlated. This shows that as data/information and technology related skills are developed, collaboration and team building skills are developed as well. This is applicable in a setting where an individual is working with a group.
6. Data/Information and technology related skills developed have a correlation with effective time management skills developed.
   The two independent variables are positively correlated. This means that effective time management skills are developed together with the data/information and technology related skills developed.
7. Leadership skills developed have a correlation with effective time management skills developed.
   The two independent variables are positively correlated. This means that as the leadership skills are developed, effective time management skills of an individual are developed as well.

Paired Sample t-Test Expected Soft Skills that Graduates Possess and Graduates Perception of the Soft Skills they Possess

In analysing the relationship between the level of participation in ECAs with the employability of the graduates of the UST Industrial Engineering
Department, the researchers used t-Test in order to identify if such relationship exists.

The relationship between the soft skills that is expected by the company and is possessed by the graduates is shown in Table 2. Pairs 1 & 2 showed a positive correlation which denotes that these skills are factors considered in the employment of an individual. Pair 4, 7 & 8 on the other hand, showed a negative correlation which means that this skill is not a factor for consideration in the employment of an individual.

Table 2: Paired Samples Correlations of Perception of Soft Skill Possessed

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Correlation</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1</td>
<td>4</td>
<td>.688</td>
<td>.312</td>
</tr>
<tr>
<td>Pair 2</td>
<td>4</td>
<td>.577</td>
<td>.423</td>
</tr>
<tr>
<td>Pair 3</td>
<td>4</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>Pair 4</td>
<td>4</td>
<td>-.577</td>
<td>.423</td>
</tr>
<tr>
<td>Pair 5</td>
<td>4</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>Pair 6</td>
<td>4</td>
<td>-.927</td>
<td>.073</td>
</tr>
<tr>
<td>Pair 7</td>
<td>4</td>
<td>-.174</td>
<td>.826</td>
</tr>
</tbody>
</table>

Table 2 shows the results of the statistical analysis of the paired sample t-Test. Sig. (2-tailed) represents the p-value which should be greater than alpha (α = 0.05) in order for the null hypothesis to be accepted. For each pair, it can be seen that the p-value is greater than alpha, thus, there is no relationship between the possessed soft skills by the graduates and expected soft skills by the company in the employability of the graduates.

Table 3: Paired Samples Tests of Perception of Soft Skill Possessed

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>t</th>
<th>Sig (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1</td>
<td>-.75000</td>
<td>.95743</td>
<td>.47871</td>
<td>-1.567</td>
<td>.215</td>
</tr>
<tr>
<td>Pair 2</td>
<td>-.25000</td>
<td>.50000</td>
<td>.25000</td>
<td>-1.000</td>
<td>.391</td>
</tr>
<tr>
<td>Pair 3</td>
<td>-.75000</td>
<td>.50000</td>
<td>.25000</td>
<td>-3.000</td>
<td>.058</td>
</tr>
<tr>
<td>Pair 4</td>
<td>-.25000</td>
<td>.95743</td>
<td>.47871</td>
<td>-.522</td>
<td>.638</td>
</tr>
<tr>
<td>Pair 5</td>
<td>-.12500</td>
<td>.95743</td>
<td>.47871</td>
<td>-2.611</td>
<td>.080</td>
</tr>
<tr>
<td>Pair 6</td>
<td>-.50000</td>
<td>1.73205</td>
<td>.86603</td>
<td>-.577</td>
<td>.604</td>
</tr>
<tr>
<td>Pair 7</td>
<td>-1.00000</td>
<td>1.1547</td>
<td>.57735</td>
<td>-1.732</td>
<td>.182</td>
</tr>
</tbody>
</table>

Logistic Regression Analysis. Table 4 shows the Chi-square Statistics and its significance level. The value of the significant level (Sig.) for the Step, Model and Block are all the same and is equal to 0.390. The value of the Sig. can help in determining whether the model is statistically significant. Since the p-value is greater than the critical p-value the model is statistically insignificant.

Table 5 shows the prediction equation which is:

\[
\log\left(\frac{p}{1-p}\right) = b_0 + b_1 \times x_1 + b_2 \times x_2 + b_3 \times x_3 + b_4 \times x_4 + b_5 \times x_5 + b_6 \times x_6 + b_7 \times x_7 + b_8 \times x_8 + b_9 \times x_9
\]

\[
Y = -.7515 + .827x_7 + 2.175x_8 - 1.876x_9 - 3.781x_{10} + 2.450x_{11} + 2.921x_{12} - 1.565x_{13} - .708x_{14} + 1.321x_4
\]

\[
\log\left(\frac{p}{1-p}\right) = -.7515 + .827x_7 + 2.175x_8 + -1.876x_9 + -3.781x_{10} + 2.450x_{11} + 2.921x_{12} + -1.565x_{13} + -0.708x_{14} + 1.321x_4
\]

Where: \( Y = \log(odds) \)

\( x_4 \) = Level of Participation
\( x_7 \) = Critical Thinking and Problem Solving Skills
\( x_8 \) = Communication Skills
\( x_9 \) = Collaboration and Team Building Skills
\( x_{10} \) = Creativity and Innovation Skills
\( x_{11} \) = Cognitive Skills
\( x_{12} \) = Effective communication Skills
\( x_{13} \) = Data/Information and Technology Related Skills
\( x_{14} \) = Leadership Skills
Binary Logistic Regression Analysis. For the graduates who did not participate in any extracurricular activities during their collegiate years, the researchers conducted Binary Logistic Regression to determine whether their possessed soft skills have an effect to their employability.

Based on the results shown in Table 6, there is sufficient evidence at 0.05 level of significance to accept the claim that the soft skills possessed by the graduates have an effect on their employability.

Table 5: Variables in the Equation (Step 1*)

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>x7</td>
<td>.827</td>
<td>1.574</td>
<td>.276</td>
<td>.599</td>
<td>2.286</td>
</tr>
<tr>
<td>x8</td>
<td>2.175</td>
<td>2.623</td>
<td>.688</td>
<td>.407</td>
<td>8.801</td>
</tr>
<tr>
<td>x9</td>
<td>-1.876</td>
<td>3.254</td>
<td>.332</td>
<td>.564</td>
<td>.153</td>
</tr>
<tr>
<td>x10</td>
<td>-3.781</td>
<td>2.316</td>
<td>2.665</td>
<td>.103</td>
<td>.023</td>
</tr>
<tr>
<td>x11</td>
<td>2.450</td>
<td>1.624</td>
<td>2.277</td>
<td>.131</td>
<td>11.594</td>
</tr>
<tr>
<td>x12</td>
<td>2.921</td>
<td>2.052</td>
<td>2.027</td>
<td>.155</td>
<td>18.557</td>
</tr>
<tr>
<td>x13</td>
<td>-1.565</td>
<td>1.080</td>
<td>2.100</td>
<td>.147</td>
<td>.209</td>
</tr>
<tr>
<td>x14</td>
<td>-.708</td>
<td>3.080</td>
<td>.053</td>
<td>.818</td>
<td>.493</td>
</tr>
<tr>
<td>x4</td>
<td>1.321</td>
<td>.868</td>
<td>2.314</td>
<td>.128</td>
<td>3.746</td>
</tr>
<tr>
<td>Constant</td>
<td>-7.515</td>
<td>6.051</td>
<td>1.542</td>
<td>.214</td>
<td>.001</td>
</tr>
</tbody>
</table>

\[ df = 1 \]

There is sufficient evidence at 0.05 level of significance to reject the claim that participation in ECAs has influence in the employability of the UST IE graduates of Batches 2013, 2014, and 2015.

Table 6: Omnibus Tests of Model Coefficients

<table>
<thead>
<tr>
<th></th>
<th>Chi-square</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step</td>
<td>22.915</td>
<td>8</td>
<td>.003</td>
</tr>
<tr>
<td>Block</td>
<td>22.915</td>
<td>8</td>
<td>.003</td>
</tr>
<tr>
<td>Model</td>
<td>22.915</td>
<td>8</td>
<td>.003</td>
</tr>
</tbody>
</table>

CONCLUSION AND RECOMMENDATION

One hundred (100) percent of the HR Personnel respondents said that a fresh graduate must possess the following soft skills: critical thinking and problem solving skills, communication skills, collaboration and team building skills, creativity and innovation skills, cognitive skills, effective time management skills, data/information and technology related skill, and leadership skills.

One hundred (100) percent of the graduates said that they have acquired communication skills, collaboration and team building skills, effective time management skills, and leadership skills in their participation in ECAs during their collegiate years. However, some of the respondents answered that they did not acquire the other soft skills. Thus, there exist a gap between the soft skills acquired by the graduates and soft skills required by the companies.

Correlational analysis showed that there exists a significant relationship at 0.05 level between and among independent variables of number of jobs, number of initial interview, level of participation and soft skills developed through ECAs.

Paired Sample Means Test showed that at 95% level of significance, there exists no relationship between the soft skills possessed by the graduates and expected by the company.

The logistic regression model that was developed in predicting employability has passed the overall goodness fit test and statistical significance test. The equation has found all independent variables to be useful in predicting employability.

The binary logistic regression analysis showed that the soft skills possessed by the graduates who did not participate in any extracurricular activities during their collegiate years have an effect on their employability.

The study was conducted for the benefit of the students, administration of the UST IE Department, and future employers of the graduates. First, the IE graduates would be informed of the significance of engaging in extracurricular activities in developing their skills. Second, the administration of the said university would be able to identify the strengths and weaknesses of their department which can help in making further improvements to their education system, course offerings, and curriculum and in producing competent graduates. Lastly, the future employers of the graduates would benefit by hiring already highly-skilled workforce who are confident to face the real world.

The results showed that participation in extracurricular activities have no direct influence to the employability of the graduates. It is also quite interesting to note that further analysis showed that the soft skills of graduates who did not participate in any ECAs while studying in college have an effect to their employability.

Although this may be the case, the researchers still recommend that for the current IE students to still join and engage in extracurricular activities provided they manage and balance their time with their academics.

For the student organizations to provide more activities that would enhance the soft skills of its student members.

For the UST IE Department to include in its curriculum activities that will further develop students’ soft skills. Further, for the IE Department to design, develop and implement a tracer system of graduates to...
allow ease of communicating with them should their inputs be needed in future studies.

This study was somewhat similar to the study conducted by Farrugia [5] in terms of obtaining the perception of graduates in participating to ECAs but he focused on its effects to career development. With a large amount of responses, he was able to obtain a wider view of what graduates think and performed better generalization. The result of this study contradicts with the findings of pre-existing literature probably due to low response rate from the graduates and the fact that perception varies from person to person. Another new discovery from this study is the skills supplied by the graduates, which were not provided in the questionnaire, namely resourcefulness, emotional intelligence, multi-tasking and work ethics.

Further improvements in the study can be made by considering the following impediments:

The researchers only focused on selected batches of Industrial Engineering graduates. An improvement can be made by considering a larger population for a possible higher response rate to fully determine if participation in ECAs has a direct influence to the employability of a student.

Due to the possible hesitation of some HR personnel to divulge on such information, only four (4) out of 8 HR personnel answered the questionnaire. A larger population for HR respondents could also enhance this study. Questionnaires may not be enough to gather data from HR. Interviews may likewise be done to obtain useful information regarding the study.

Additional data sources by interviewing key personnel of various school organizations (college-based and/or university-wide), student council, student affairs office and alumni association regarding the effects of ECAs could also be beneficial in the analysis. The scope of the study could be extended by comparing the employability of UST IE graduates with the graduates of the same program from other colleges or universities; and including other skills aside from the eight (8) skills that were based on the related literatures reviewed by the researchers.

REFERENCES

REFERENCES

Pour avenir de communication avec eux en fonction de leurs inputs sera nécessaire dans les études futures.

Cette étude était assez similaire à l'étude menée par Farrugia [5] en termes d'obtention de la perception des étudiants en participant à des ECAs mais il a concentré sur ses effets au développement de carrière. Avec un grand nombre de réponses, il a pu obtenir une vision plus large de ce que les étudiants pensent et effectué une meilleure généralisation. Le résultat de cette étude concorde avec les résultats de la littérature préexistant probablement en raison de la faible réponse des étudiants et le fait que la perception varie d'une personne à l'autre. Une nouvelle découverte provenant de cette étude est les compétences fournies par les étudiants, qui n'étaient pas fournies dans le questionnaire, notamment la ressource, l'intelligence émotionnelle, la multitâche et les loisirs.

Améliorations futures de l'étude peuvent être faite en considérant les suivants impératifs:

Les chercheurs se sont uniquement concentrés sur des groupes de lots d'étudiants d'Ingénierie Industrielle. Une amélioration peut être faite en considérant une population plus grande pour un taux de réponse plus élevé pour déterminer si la participation à des ECAs a un effet direct sur l'employabilité d'un étudiant.

En raison de la possible hésitation de certains HR à divulguer sur de telles informations, seuls quatre (4) sur huit (8) HR ont répondu au questionnaire. Une population plus grande pour les HR pourrait également contribuer à cet étude. Les questionnaires ne seraient peut-être pas suffisants pour recueillir des données de HR. Les entretiens peuvent également être réalisés pour obtenir des informations utiles concernant l'étude.

Des données supplémentaires peuvent être obtenues à l'aide d'entretiens avec les principaux intervenants des organisations de différentes écoles (baser sur l'université et/ou en grade universitaire), conseil des étudiants, bureau des affaires étudiantes et association des anciens élèves concernant les effets des ECAs pourraient également être bénéfiques dans l'analyse. Le champ de l'étude pourrait être étendu en comparant l'employabilité des étudiants de l'IE de l'UST avec les étudiants du même programme d'autres écoles ou universités; et incluant d'autres compétences à part les huit (8) compétences qui étaient basées sur les différentes littératures examinées par les chercheurs.

REFERENCES

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### Table 1: Correlation Matrix for All Independent Variables

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<th>Correlations</th>
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<th>X2</th>
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<th>X8</th>
<th>X9</th>
<th>X10</th>
<th>X11</th>
<th>X12</th>
<th>X13</th>
<th>X14</th>
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*Correlation is significant at 0.05 level (2-tailed)