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Assessment of Mining Students' Perception of Industrial Attachment Programme at Malawi Polytechnic

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Abstract

Industrial attachments were added to the engineering academic curriculum at the Polytechnic to ensure students are industry-ready when they graduate. The question that arises is how effective are these industrial attachments to the students. Present study seeks to address this question through a survey questionnaire utilizing a Likert Scale with "1" for "very poor", "2" for "poor", "3" for "good", "4" for "very good" and "5" for "excellent" so as to gauge the students' perception of their three-month industrial attachment programme. There were six perception aspects comprising learning experience, pre-placement activities, student industrial attachment committee, host organization, evaluation process and supervisor-supervisee relationship. These six perception aspects had variables A1-A10, B1-B4, C1-C4, D1-D6, E1-E8 and F1-F4 respectively. In total, 36 questionnaires were returned fully completed from a total of 44 questionnaires distributed (*a return rate of 82 percent*). The collected data was tabulated and analyzed using descriptive statistics such as frequency, percentage and mean in Microsoft Excel. The results indicated that majority of the Mining Engineering Department students' perception ranged from "good" to "excellent" with an overall mean score of 3.6 on the Likert scale. Overall, 88% of the students rated the industrial attachment programme favorably from "good" to "excellent" on the Likert scale while 12% rated it unfavorably from "very poor" to "poor". Of particular concern were the variables "gain writing skills", "well-structured training programme", "lifetime learning capacity and entrepreneurial skill" and "attending to arising issue promptly" which had "poor" ratings of 33%, 17%, 25% and 17% respectively. Nevertheless, the students' favourable perception imply that the Faculty of Engineering curriculum aligns well with the needs of the industry thereby making the students to proactively acquire the work culture at host organizations. Industrial attachments in respective universities are tailored according to various industrial needs hence the findings from this research will benefit higher learning institutions, government institutions and host organizations with similar or different attachment training programmes for future improvement.

Keywords: Higher Education, Internship, Job Prospects, Universities, Work-Based Learning

1. Introduction

The industrial attachment programme is an essential part of the academic curriculum of all Faculty of Engineering (FoE) programmes at the Malawi Polytechnic. FoE has made it compulsory for its undergraduate students to undergo a three-month internship programme prior to the completion of their studies. When students complete

their program of study and get employed in an organization they are first trained on the job, but having gone through the industrial attachment, this session does not last long or may not be necessary (Andoh et al. 2016). According to Norina et al. (2012), employers and academic researchers had identified gaps between corporate needs and graduates' attributes which indicated that graduates had little real world experience, lacked communication, teamwork and problem solving skills as well as having poor working attitudes. There is a need to help students move from the "book and theories" to the "real clients and real work places" (Maistre and Pare, 2004). Host organizations are expected to provide adequate training, job skills and work experience to these students at the work place. The students on the other hand expect to acquire much practical knowledge, gain experiences and job skills from the training; the Malawi Polytechnic expects the host organization to provide training opportunities and also hopes the students acquire as much skills and knowledge in the training. According to Renganathan et al. (2012), the seven important dimensions that contribute towards developing well-rounded graduates are technical know-how, communication and behavioural skills, analytical and critical thinking, practical aptitude, solution synthesis ability, lifetime learning capacity and entrepreneurial skills.

Therefore, it can be implied that the main objective of an industrial attachment programme is to help students apply theoretical knowledge in real work situations or challenges thereby closing the gap on the mismatch of the quality of university graduates with that of industrial expectations. The Malawi Polytechnic' introduction of the attachment programme strengthened the employer's involvement in higher education activities of preparing students for employment and entrepreneurship in industry. The industrial attachment programme is faced with a lot of challenges and prominent among them is the placement of the students for attachment. According to Renganathan et al. (2012), unless there are industries that are ready to receive students on attachment, it is difficult for attachment programmes to contribute to the university instructional process.

This research seeks to find out how the undergraduate students perceive the effectiveness of this industrial attachment programme. In order to determine this, the students' perception regarding six perception aspects is assessed:

i.   Learning experiences during the industrial attachment;
ii.   Efficiency of the pre-placement activities for the industrial attachment;
iii.   Assistance and helpfulness provided by the Students' Industrial Attachment Committee (SIAC);
iv.   Support provided by the host organization (HO) during the industrial attachment;
v.   Evaluation process during the industrial attachment; and
vi.   Industrial supervisor-supervisee relationship.

It is hoped that the outcome of this research will help improve the delivery of the newly introduced mining programmes at Malawi Polytechnic thereby meeting the needs of the industry.

2.   Methods and Materials

Data was collected through a survey questionnaire distributed to 44 fourth year students who are the first cohort in the newly established Mining Engineering Department (MED) to do their industrial attachments at various host organizations comprising Department of Mines, Geological Survey Department, Akatswiri Minerals, Terrastone Quarry, MotaEngil Quarry, Lafarge, Mining Solutions, Masterstone Breakers, Central Materials Laboratory, Sovereign Metals, Shayona Cement, Mchenga Coal Mine, Kaziwiziwi Coal Mine and Chombe Coal Mine.

In total, 36 questionnaires (refer to *Appendix*) were returned fully completed from a total of 44 questionnaires distributed (*a return rate of 82 percent*). The structuring of the questionnaire was based on the six perception aspects (*i-vi*) outlined above. A five-point Likert scale was used to measure the respondents' feedback, with **"1"** for **"very poor"**, **"2"** for **"poor"**, **"3"** for **"good"**, **"4"** for **"very good"** and **"5"** for **"excellent"**. Refer to *Tables 1-6* for the description of the variables that were used on the questionnaire to represent respondents' perceptions.

Table 1. Mining students' perception of their learning experience

Variables	Description (I am able to […])	Likert scale				
		1	2	3	4	5
A1	Apply theoretical knowledge with practices in industry					
A2	Acquire industry work culture					
A3	Practice team work including multidisciplinary team					
A4	Gain writing skills					
A5	Develop oral or presentation skills					
A6	Execute problem-solving activities					
A7	Develop managerial skills					
A8	Appreciate the social and ethical responsibility					
A9	Attain business insightfulness					
A10	Aspire for future education and career					

Table 2. Mining students' perception of some pre-placement activities

Variables	Description	Likert scale				
		1	2	3	4	5
B1	The briefings were sufficient and informative					
B2	The guidelines were comprehensive					
B3	The placement procedures were efficient					
B4	The evaluation criteria were relevant					

Table 3. Mining students' perception of Student Industrial Attachment Committee (SIAC)

Variables	Description	Likert scale				
		1	2	3	4	5
C1	SIAC staff were helpful					
C2	SIAC staff were always available when required					
C3	SIAC staff attended to arising issue promptly					
C4	SIAC was able to maintain a good rapport with students and HO					

Table 4. Mining students' perception of their host organization (HO)

Variables	Description	Likert scale				
		1	2	3	4	5
D1	Training provided was related to my course					
D2	HO provided maximum opportunity for training					
D3	HO has a well-structured training programme					
D4	HO provided real job experience					
D5	HO was supportive of the attachment programme					
D6	Operational issues learnt in classroom are similar to industry					

Table 5. Mining students' perception of their evaluation process

Variables	Description	Likert scale				
		1	2	3	4	5
E1	Evaluation process was relevant					
E2	Evaluation process tested technical know-how					
E3	Evaluation process tested communication and behavioural skill					
E4	Evaluation process tested analytical and critical thinking skill					
E5	Evaluation process tested practical aptitude					
E6	Evaluation process tested solution synthesis ability					
E7	Evaluation process tested lifetime learning capacity					
E8	Evaluation process tested entrepreneurial skill					

Table 6. Mining students' perception of their industrial supervisor-supervisee relationship

Variables	Description	Likert scale				
		1	2	3	4	5
F1	Supervisor was helpful					
F2	Supervisor was always available when required					
F3	Supervisor attended to arising issue promptly					
F4	Supervisor was able to maintain a good rapport with students					

Mean scores were derived (see **Table 7**) to determine whether the students have positive (favourable) or negative (unfavourable) perception regarding the industrial attachment programme. Since a five-point Likert scale was used, a mean score of more than three indicates a favourable response while a mean score of less than three indicates an unfavourable response.

After collecting all the data, the students' responses were tabulated and analyzed using Microsoft Excel. Descriptive statistics such as frequency, percentage and mean of learning experiences; pre-placement activities; SIAC; HO; evaluation process; and industrial supervisor-supervisee relationship were derived. Thereafter, important implications were drawn so that relevant changes and improvements can be made to the industrial attachment programme.

3.   Results and Discussion

Microsoft Excel was used to tabulate and analyze the Likert Scale data. Refer to *Appendix (Table 9 to Table 13)* for the frequency, percentage, mean score and graphs of student' perception on the various variables with respect to the six perception aspects.

Majority of the students' perception ranged from "good" to "excellent" with an overall mean score of 3.6 on the Likert scale. The average mean ratings for learning experience, pre-placement activities, student industrial attachment committee, host organization, evaluation process and supervisor-supervisee relationship are 3.8, 3.6, 3.7, 3.3, 3.4, 3.5 respectively. These findings imply that the MED students perceive the industrial attachment programme favourably and this indicates that The Malawi Polytechnic' industrial attachment programme is effective from the students' point of view. Host organization and Evaluation process gave the lowest mean scores

of 3.3 and 3.4 respectively implying the need to improve them further as compared to the other perception aspects. In order to get a better insight, the research analyzed the percentage of students' perception on each variable.

Table 7. Mining students' perception of industrial attachment programme

Serial No.	Perception Aspects	Mean score (/5)
1	Learning experience	3.8
2	Pre-placement activities	3.6
3	Student Industrial Attachment Committee	3.7
4	Host organization	3.3
5	Evaluation process	3.4
6	Supervisor-supervisee relationship	3.5

The following sections examine in detail the findings obtained on the variables of the six perception aspects identified in this study as contributing to the effectiveness and improvement of Malawi Polytechnic' MED industrial attachment programme:

3.1. Mining students' perception of their attachment learning experience

Table 8 and Figure 1 show that the variable A1 got the highest percentage of "67" for Good with "0" Poor ratings. This is important as it addresses the need of current employers who not only demand for graduates who are competent academically but also graduates who have developed the required core competencies at workplace. In addition, this shows that the MED curriculum aligns well with the needs of the industry and the students positively acquired the work culture hence the favourable ratings. Variables A4, A5, A6, A7, A9, and A10 had slightly Poor ratings requiring the need to improve further. The students need to be given more managerial tasks at HO so as to improve their writing skills, oral presentation skills and business insightfulness which in turn will make them aspire more for further education and career. This will ensure that the mining industry has a continuous supply of highly motivated graduates ready to tackle all industrial challenges. Also, variable A10 had a higher percentage of "50" showing the commitment and satisfaction of students with the MED programmes. Overall, the learning experience perception aspect was rated favorably by the students.

Table 8. Percentage of students' ratings for learning experience

Respondent ID	TOTAL	Very Poor (%)	Poor (%)	Good (%)	Very Good (%)	Excellent (%)	TOTAL
Learning Experience Variable A1	36	0%	0%	67%	25%	8%	100%
Learning Experience Variable A2	36	0%	0%	33%	33%	33%	100%
Learning Experience Variable A3	36	0%	0%	17%	42%	42%	100%
Learning Experience Variable A4	36	8%	33%	14%	36%	8%	100%
Learning Experience Variable A5	36	0%	25%	33%	25%	17%	100%
Learning Experience Variable A6	36	0%	17%	42%	25%	17%	100%
Learning Experience Variable A7	36	17%	19%	22%	14%	28%	100%
Learning Experience Variable A8	36	0%	0%	17%	42%	42%	100%

		Very Poor(%)	Poor(%)	Good(%)	Very Good(%)	Excellent(%)	TOTAL
Learning Experience Variable A9	**36**	0%	19%	25%	22%	33%	**100%**
Learning Experience Variable A10	**36**	8%	8%	11%	22%	50%	**100%**
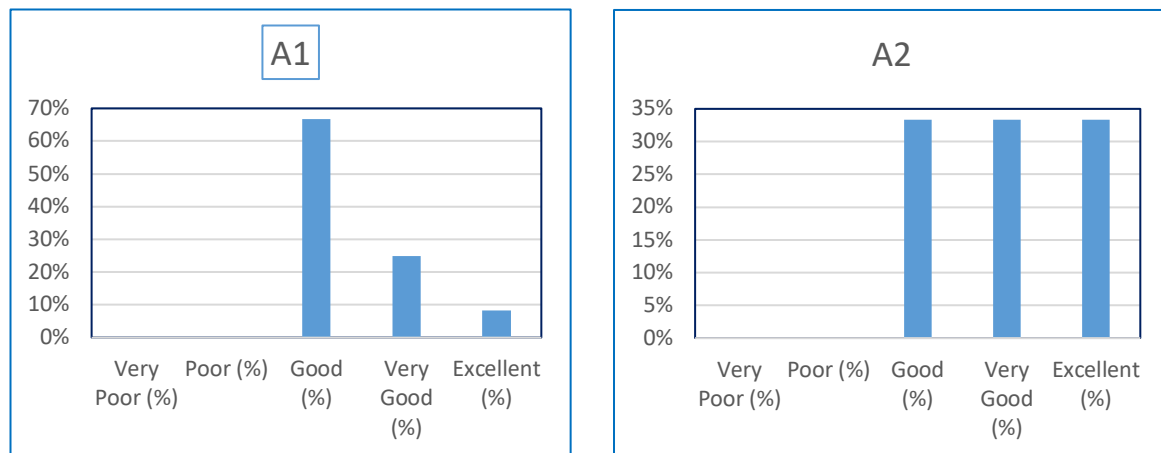
Figure 1. Graph of variable A1 "Apply theoretical knowledge with practices in industry" and A2 "Acquire industry work culture"

3.2. Mining students' perception of some pre-placement activities

Table 9 shows that the 14% of the students rated variable B1 as Poor (Figure 2) showing that some students did not fully understand the briefings hence the need to improve on delivery. A solution might be to conduct more than one pre-placement meetings during the first semester and distribute the FoE students' industrial attachment manual so as to give the students more time to prepare and ask further questions prior to the start of their attachment in the second semester of the academic calendar. Nevertheless, the pre-placement activities aspect was rated favorably by the students as higher percentages are observed in Table 9 from Good to Excellent.

Table 9. Percentage of students' ratings for pre-placement activities

Respondent ID	TOTAL	Very Poor(%)	Poor(%)	Good(%)	Very Good(%)	Excellent(%)	TOTAL
Preplacement Variable B1	**36**	0%	14%	53%	25%	8%	**100%**
Preplacement Variable B2	**36**	0%	6%	47%	22%	25%	**100%**
Preplacement Variable B3	**36**	0%	8%	42%	17%	33%	**100%**
Preplacement Variable B4	**36**	0%	8%	42%	17%	33%	**100%**
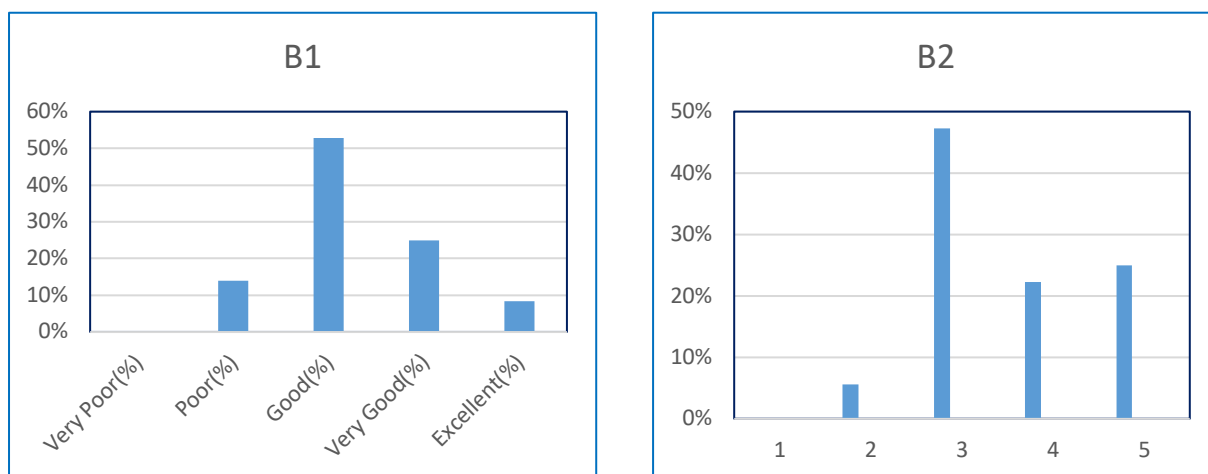
Figure 2. Graph of Variable B1 "The briefings were sufficient and informative" and B2 "The guidelines were comprehensive"

3.3. Mining students' perception of Student Industrial Attachment Committee (SIAC)

Despite the few poor ratings for SIAC, the students highly appreciated the effort put by SIAC in collaborating with HO, finding attachment places and allocating them hence the higher percentages in Good to Excellent. This implies that the students favorably rated the SIAC (Table 10 and Figure 3).

Table 10. Percentage of students' ratings for SIAC

Respondent ID	TOTAL	Very Poor(%)	Poor(%)	Good(%)	Very Good(%)	Excellent(%)	TOTAL
SIAC Variable C1	**36**	8%	6%	44%	8%	33%	**100%**
SIAC Variable C2	**36**	0%	6%	47%	22%	25%	**100%**
SIAC Variable C3	**36**	0%	8%	42%	17%	33%	**100%**
SIAC Variable C4	**36**	0%	8%	42%	17%	33%	**100%**
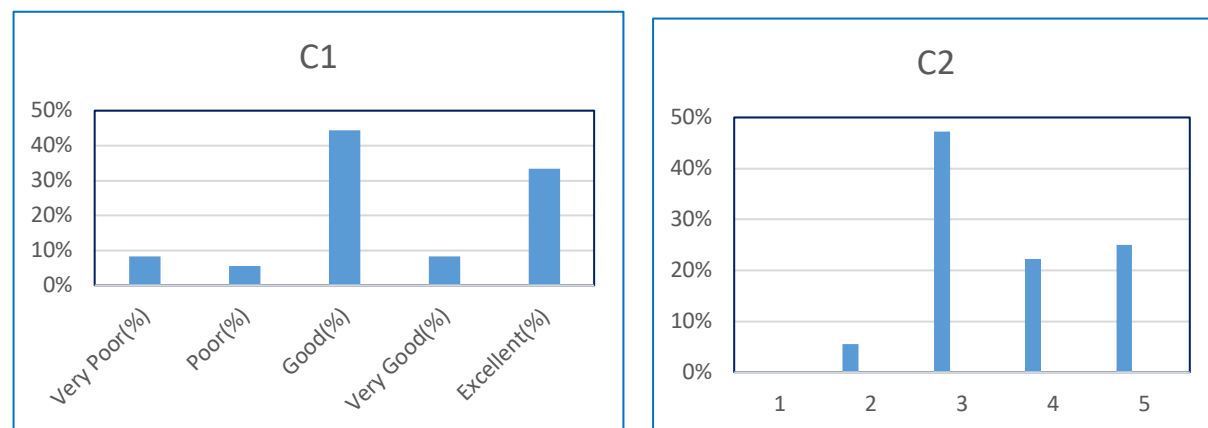
Figure 3. Graph of Variable C1 "SIAC staff were helpful" and C2 "SIAC staff were always available when required"

3.4. Mining students' perception of their host organization (HO)

Though there were higher ratings in the Good to Excellent range, the frequency of Poor ratings is a cause for concern. Table 11 and Figure 4 shows that 8% to 17% of the students rated HO variables as Poor showing their dissatisfaction with the approach of the HO. It would be imperative if all HO had a well-structured training programme as this would actively keep the students on their toes and make them feel valued at the HO. The HO might also include mini-projects for the students to apply their theoretical knowledge to the work environment thereby closing the gap between theory and practice.

Table 11. Percentage of students' ratings for host organization

Respondent ID	TOTAL	Very Poor(%)	Poor(%)	Good(%)	Very Good(%)	Excellent(%)	TOTAL
HO Variable D1	36	0%	8%	17%	33%	42%	100%
HO Variable D2	36	17%	8%	33%	17%	25%	100%
HO Variable D3	36	17%	17%	33%	17%	17%	100%
HO Variable D4	36	8%	17%	25%	25%	25%	100%
HO Variable D5	36	0%	17%	50%	8%	25%	100%
HO Variable D6	36	0%	17%	42%	17%	25%	100%
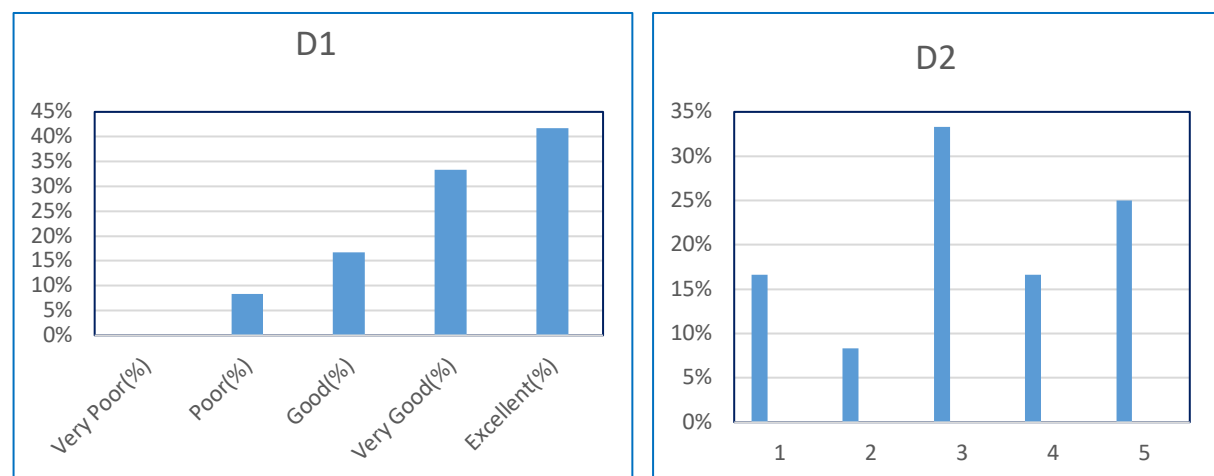
Figure 4. Graph of variable D1 "Training provided was related to my course" and D2 "HO provided maximum opportunity for training"

3.5. Mining students' perception of their evaluation process

Table 12 and Figure 5 shows that the variables E7, E8 had a Poor rating of 25% and this shows the need to improve on lifelong learning capacity and entrepreneurial skill. The improvement will help the students develop constructive business ideas before they graduate. Nevertheless, majority of the students rated the evaluation process favorably due to higher percentages in Good to Excellent.

Table 12. Percentage of students' ratings for evaluation process

Respondent ID	TOTAL	Very Poor(%)	Poor(%)	Good(%)	Very Good(%)	Excellent(%)	TOTAL
Evaluation Variable E1	36	0%	0%	33%	50%	17%	100%
Evaluation Variable E2	36	0%	17%	42%	25%	17%	100%

Evaluation Variable E3	36	0%	8%	17%	50%	25%	100%
Evaluation Variable E4	36	0%	8%	17%	67%	8%	100%
Evaluation Variable E5	36	8%	17%	42%	25%	8%	100%
Evaluation Variable E6	36	8%	17%	33%	25%	17%	100%
Evaluation Variable E7	36	0%	25%	42%	17%	17%	100%
Evaluation Variable E8	36	25%	8%	42%	17%	8%	100%
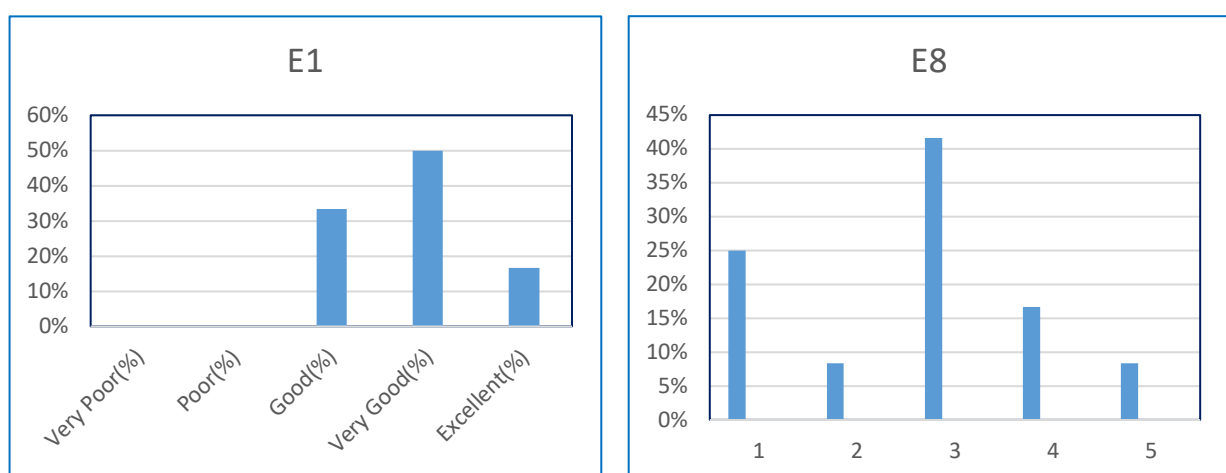
Figure 5. Graph of Variable E1 "Evaluation process was relevant" and E8 "Evaluation process tested entrepreneurial skill"

3.6. Mining students' perception of their industrial supervisor-supervisee relationship

Majority of the students were satisfied with the performance of their industrial supervisors. Table 13 and Figure 6 shows that 8% to 17% of the students rated the relationship as Poor. Indeed supervisors are very busy people making sure the HO achieves its daily objectives but it would be helpful if students are attended to as the need arises so as to maintain a good rapport. Some students expressed concern that the supervisors allocated to them by the HO are of different disciplines to their field of study hence making it difficult for the students to understand and ask questions. It is therefore recommended that the HO should allocate supervisors who match the field of study of the students.

Table 13. Percentage of students' ratings for industrial supervisor-supervisee relationship

Respondent ID	TOTAL	Very Poor(%)	Poor(%)	Good(%)	Very Good(%)	Excellent(%)	TOTAL
Relationship Variable F1	**36**	8%	8%	28%	14%	42%	**100%**
Relationship Variable F2	**36**	17%	8%	25%	25%	25%	**100%**
Relationship Variable F3	**36**	17%	17%	25%	17%	25%	**100%**

Relationship Variable F4	**36**	17%	8%	8%	25%	42%	**100%**
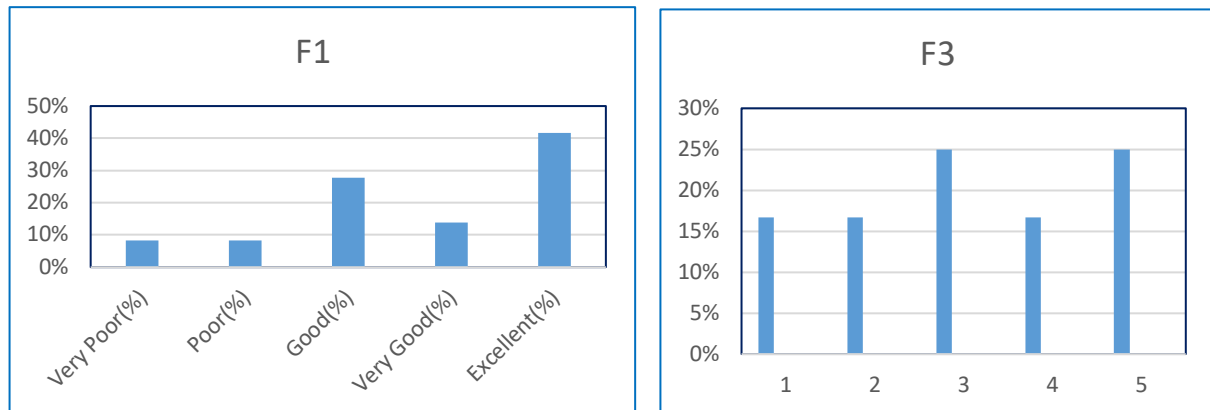
Figure 6. Graph of Variable F1 "Supervisor was helpful" and F3 "Supervisor attended to arising issue promptly"

Conclusion

This research assessed the perceptions of mining students as regards to industrial attachment programme. Some variables were rated positively while others negatively. The findings show that the current delivery of the attachment programme is favourable to the students but there is still need for further improvement on the delivery of the attachment programme so as to fully close the gap between theoretical and practical knowledge of the students to ensure survival in the job market. Overall, the industrial attachment programme act as a bridge between undergraduates and the professional world; and its inclusion as part of their assessment methodology prior to graduation and joining the mining industry is highly rated.

Nevertheless, it is recommended to increase the sample size by carrying out further research on all other programmes that offer industrial attachment at the Malawi Polytechnic. In addition, future studies can include feedback from host organizations, industrial and academic supervisors. This will help the Malawi Polytechnic to understand the overall impact of the industrial attachment programme not only to students but also to industry; and help in its planning purposes for growth and improvement. Industrial attachment programmes are the future of student-centered learning which will accelerate the creation of industry ready-graduates thereby helping industry cut down on on-the-job training budgets.

Conflict of Interest
The Author has not declared any conflicts of interest.

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Appendix
Table 14 to 18 shows results of the frequency, percentage and mean of the perception variables done in Microsoft Excel sheets. Graphs of the variables are also included.

Table 14. Shows results of the frequency, percentage and mean of the perception aspect "Learning Experience" done in Microsoft Excel sheets. Some graphs of the variable are also included.

Respondent ID	Learning Experience Variable A1	Learning Experience Variable A2	Learning Experience Variable A3	Learning Experience Variable A4	Learning Experience Variable A5	Learning Experience Variable A6	Learning Experience Variable A7	Learning Experience Variable A8	Learning Experience Variable A9	Learning Experience Variable A10	
1	Good	Good	Good	Very Poor	Poor	Poor	Very Poor	Good	Poor	Very Poor	
2	Good	Good	Good	Very Poor	Poor	Poor	Very Poor	Good	Poor	Very Poor	
3	Good	Good	Good	Very Poor	Poor	Poor	Very Poor	Good	Poor	Very Poor	
4	Good	Good	Good	Poor	Poor	Poor	Very Poor	Good	Poor	Poor	
5	Good	Good	Good	Poor	Poor	Poor	Very Poor	Good	Poor	Poor	
6	Good	Good	Good	Poor	Poor	Poor	Very Poor	Good	Poor	Poor	
7	Good	Good	Very Good	Poor	Poor	Good	Poor	Very Good	Poor	Good	
8	Good	Good	Very Good	Poor	Poor	Good	Poor	Very Good	Good	Good	
9	Good	Good	Very Good	Poor	Poor	Good	Poor	Very Good	Good	Good	
10	Good	Good	Very Good	Poor	Good	Good	Poor	Very Good	Good	Good	
11	Good	Good	Very Good	Poor	Good	Good	Poor	Very Good	Good	Very Good	
12	Good	Good	Very Good	Poor	Good	Good	Poor	Very Good	Good	Very Good	
13	Good	Very Good	Very Good	Poor	Good	Good	Poor	Very Good	Good	Very Good	
14	Good	Very Good	Very Good	Poor	Good	Good	Good	Very Good	Good	Very Good	
15	Good	Very Good	Very Good	Poor	Good	Good	Good	Very Good	Good	Very Good	
16	Good	Very Good	Very Good	Good	Good	Good	Good	Very Good	Good	Very Good	
17	Good	Very Good	Very Good	Good	Good	Good	Good	Very Good	Very Good	Very Good	
18	Good	Very Good	Very Good	Good	Good	Good	Good	Very Good	Very Good	Very Good	
19	Good	Very Good	Very Good	Good	Good	Good	Good	Very Good	Very Good	Excellent	
20	Good	Very Good	Very Good	Good	Good	Good	Good	Very Good	Very Good	Excellent	
21	Good	Very Good	Very Good	Very Good	Good	Good	Good	Very Good	Very Good	Excellent	
22	Good	Very Good	Excellent	Very Good	Very Good	Very Good	Very Good	Excellent	Very Good	Excellent	

23	Good	Very Good	Excellent	Very Good	Very Good	Very Good	Very Good	Excellent	Very Good	Excellent	
24	Good	Very Good	Excellent	Very Good	Very Good	Very Good	Very Good	Excellent	Very Good	Excellent	
25	Very Good	Excellent	Excellent	Very Good	Very Good	Very Good	Very Good	Excellent	Excellent	Excellent	
26	Very Good	Excellent	Excellent	Very Good	Very Good	Very Good	Very Good	Excellent	Excellent	Excellent	
27	Very Good	Excellent	Excellent	Very Good	Very Good	Very Good	Excellent	Excellent	Excellent	Excellent	
28	Very Good	Excellent	Excellent	Very Good	Very Good	Very Good	Excellent	Excellent	Excellent	Excellent	
29	Very Good	Excellent	Excellent	Very Good	Very Good	Very Good	Excellent	Excellent	Excellent	Excellent	
30	Very Good	Excellent	Excellent	Very Good	Very Good	Very Good	Excellent	Excellent	Excellent	Excellent	
31	Very Good	Excellent	Excellent	Very Good	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
32	Very Good	Excellent	Excellent	Very Good	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
33	Very Good	Excellent	Excellent	Very Good	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
34	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
35	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
36	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
Count (N)	36	36	36	36	36	36	36	36	36	36	
Not Answered	0	0	0	0	0	0	0	0	0	0	
Total	36	36	36	36	36	36	36	36	36	36	
Very Poor	0	0	0	3	0	0	6	0	0	3	
Poor	0	0	0	12	9	6	7	0	7	3	
Good	24	12	6	5	12	15	8	6	9	4	
Very Good	9	12	15	13	9	9	5	15	8	8	
Excellent	3	12	15	3	6	6	10	15	12	18	
TOTAL	36	36	36	36	36	36	36	36	36	36	

| Very Poor(%)	0%	0%	0%	8%	0%	0%	17%	0%	0%	8%	
Poor(%)	0%	0%	0%	33%	25%	17%	19%	0%	19%	8%	
Good(%)	67%	33%	17%	14%	33%	42%	22%	17%	25%	11%	
Very Good(%)	25%	33%	42%	36%	25%	25%	14%	42%	22%	22%	
Excellent(%)	8%	33%	42%	8%	17%	17%	28%	42%	33%	50%	
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
											Overall Mean Score
Mean	3.4%	4.0%	4.3%	3.0%	3.3%	3.4%	3.2%	4.3%	3.7%	4.0%	3.7%
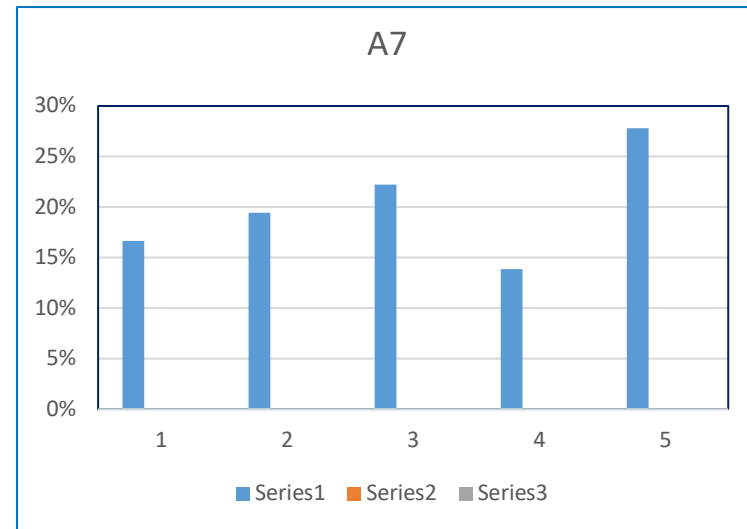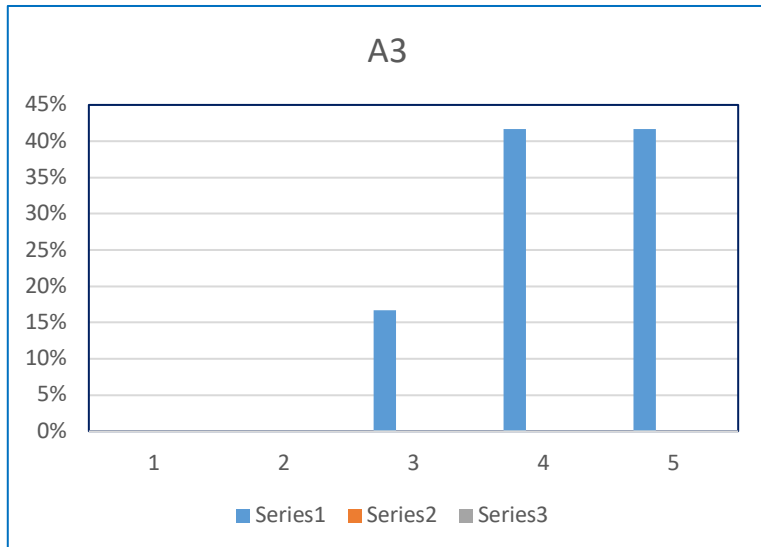
Figure 7. Graph of A3 and A7

Table 15. Shows results of the frequency, percentage and mean of the perception aspect "Pre-placement Activities" done in Microsoft Excel sheets. Some graphs of the variable are also included

Respondent ID	Preplacement Variable B1	Preplacement Variable B2	Preplacement Variable B3	Preplacement Variable B4	
1	Poor	Poor	Poor	Poor	
2	Poor	Poor	Poor	Poor	
3	Poor	Good	Poor	Poor	
4	Poor	Good	Good	Good	
5	Poor	Good	Good	Good	
6	Good	Good	Good	Good	
7	Good	Good	Good	Good	
8	Good	Good	Good	Good	
9	Good	Good	Good	Good	
10	Good	Good	Good	Good	
11	Good	Good	Good	Good	
12	Good	Good	Good	Good	
13	Good	Good	Good	Good	
14	Good	Good	Good	Good	
15	Good	Good	Good	Good	
16	Good	Good	Good	Good	
17	Good	Good	Good	Good	
18	Good	Good	Good	Good	
19	Good	Good	Very Good	Very Good	
20	Good	Very Good	Very Good	Very Good	
21	Good	Very Good	Very Good	Very Good	
22	Good	Very Good	Very Good	Very Good	
23	Good	Very Good	Very Good	Very Good	
24	Good	Very Good	Very Good	Very Good	
25	Very Good	Very Good	Excellent	Excellent	
26	Very Good	Very Good	Excellent	Excellent	
27	Very Good	Very Good	Excellent	Excellent	

28	Very Good	Excellent	Excellent	Excellent
29	Very Good	Excellent	Excellent	Excellent
30	Very Good	Excellent	Excellent	Excellent
31	Very Good	Excellent	Excellent	Excellent
32	Very Good	Excellent	Excellent	Excellent
33	Very Good	Excellent	Excellent	Excellent
34	Excellent	Excellent	Excellent	Excellent
35	Excellent	Excellent	Excellent	Excellent
36	Excellent	Excellent	Excellent	Excellent
Count (N)	36	36	36	36
Not Answered	0	0	0	0
Total	36	36	36	36
Very Poor	0	0	0	0
Poor	5	2	3	3
Good	19	17	15	15
Very Good	9	8	6	6
Excellent	3	9	12	12
TOTAL	36	36	36	36
Very Poor(%)	0%	0%	0%	0%
Poor(%)	14%	6%	8%	8%
Good(%)	53%	47%	42%	42%
Very Good(%)	25%	22%	17%	17%
Excellent(%)	8%	25%	33%	33%
TOTAL	100%	100%	100%	100%

					Overall Mean Score
Mean	3.3%	3.7%	3.8%	3.8%	3.6%

Table 16. Shows results of the frequency, percentage and mean of the perception aspect "Student Industrial Attachment Committee" done in Microsoft Excel sheets. Some graphs of the variable are also included

Respondent ID	SIAC Variable C1	SIAC Variable C2	SIAC Variable C3	SIAC Variable C4	
1	Very Poor	Poor	Poor	Poor	
2	Very Poor	Poor	Poor	Poor	
3	Very Poor	Good	Poor	Poor	
4	Poor	Good	Good	Good	
5	Poor	Good	Good	Good	
6	Good	Good	Good	Good	
7	Good	Good	Good	Good	
8	Good	Good	Good	Good	
9	Good	Good	Good	Good	
10	Good	Good	Good	Good	
11	Good	Good	Good	Good	
12	Good	Good	Good	Good	
13	Good	Good	Good	Good	
14	Good	Good	Good	Good	
15	Good	Good	Good	Good	
16	Good	Good	Good	Good	
17	Good	Good	Good	Good	
18	Good	Good	Good	Good	
19	Good	Good	Very Good	Very Good	
20	Good	Very Good	Very Good	Very Good	
21	Good	Very Good	Very Good	Very Good	

22	Very Good	Very Good	Very Good	Very Good	
23	Very Good	Very Good	Very Good	Very Good	
24	Very Good	Very Good	Very Good	Very Good	
25	Excellent	Very Good	Excellent	Excellent	
26	Excellent	Very Good	Excellent	Excellent	
27	Excellent	Very Good	Excellent	Excellent	
28	Excellent	Excellent	Excellent	Excellent	
29	Excellent	Excellent	Excellent	Excellent	
30	Excellent	Excellent	Excellent	Excellent	
31	Excellent	Excellent	Excellent	Excellent	
32	Excellent	Excellent	Excellent	Excellent	
33	Excellent	Excellent	Excellent	Excellent	
34	Excellent	Excellent	Excellent	Excellent	
35	Excellent	Excellent	Excellent	Excellent	
36	Excellent	Excellent	Excellent	Excellent	
Count (N)	36	36	36	36	
Not Answered	0	0	0	0	
Total	36	36	36	36	
Very Poor	3	0	0	0	
Poor	2	2	3	3	
Good	16	17	15	15	
Very Good	3	8	6	6	
Excellent	12	9	12	12	
TOTAL	36	36	36	36	

Very Poor(%)	8%	0%	0%	0%	
Poor(%)	6%	6%	8%	8%	
Good(%)	44%	47%	42%	42%	
Very Good(%)	8%	22%	17%	17%	
Excellent(%)	33%	25%	33%	33%	
TOTAL	100%	100%	100%	100%	
					Overall Mean Score
Mean	3.5%	3.7%	3.8%	3.8%	3.7%

Table 17. Shows results of the frequency, percentage and mean of the perception aspect "Host Organization" done in Microsoft Excel sheets. Some graphs of the variable are also included

Respondent ID	HO Variable D1	HO Variable D2	HO Variable D3	HO Variable D4	HO Variable D5	HO Variable D6	
1	Poor	Very Poor	Very Poor	Very Poor	Poor	Poor	
2	Poor	Very Poor	Very Poor	Very Poor	Poor	Poor	
3	Poor	Very Poor	Very Poor	Very Poor	Poor	Poor	
4	Good	Very Poor	Very Poor	Poor	Poor	Poor	
5	Good	Very Poor	Very Poor	Poor	Poor	Poor	
6	Good	Very Poor	Very Poor	Poor	Poor	Poor	
7	Good	Poor	Poor	Poor	Good	Good	
8	Good	Poor	Poor	Poor	Good	Good	
9	Good	Poor	Poor	Poor	Good	Good	
10	Very Good	Good	Poor	Good	Good	Good	
11	Very Good	Good	Poor	Good	Good	Good	
12	Very Good	Good	Poor	Good	Good	Good	

13	Very Good	Good	Good	Good	Good	Good	
14	Very Good	Good	Good	Good	Good	Good	
15	Very Good	Good	Good	Good	Good	Good	
16	Very Good	Good	Good	Good	Good	Good	
17	Very Good	Good	Good	Good	Good	Good	
18	Very Good	Good	Good	Good	Good	Good	
19	Very Good	Good	Good	Very Good	Good	Good	
20	Very Good	Good	Good	Very Good	Good	Good	
21	Very Good	Good	Good	Very Good	Good	Good	
22	Excellent	Very Good	Good	Very Good	Good	Very Good	
23	Excellent	Very Good	Good	Very Good	Good	Very Good	
24	Excellent	Very Good	Good	Very Good	Good	Very Good	
25	Excellent	Very Good	Very Good	Very Good	Very Good	Very Good	
26	Excellent	Very Good	Very Good	Very Good	Very Good	Very Good	
27	Excellent	Very Good	Very Good	Very Good	Very Good	Very Good	
28	Excellent	Excellent	Very Good	Excellent	Excellent	Excellent	
29	Excellent	Excellent	Very Good	Excellent	Excellent	Excellent	
30	Excellent	Excellent	Very Good	Excellent	Excellent	Excellent	
31	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
32	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
33	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
34	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
35	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	
36	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	

Count (N)	36	36	36	36	36	36	
Not Answered	0	0	0	0	0	0	
Total	36	36	36	36	36	36	
Very Poor	0	6	6	3	0	0	
Poor	3	3	6	6	6	6	
Good	6	12	12	9	18	15	
Very Good	12	6	6	9	3	6	
Excellent	15	9	6	9	9	9	
TOTAL	36	36	36	36	36	36	
Very Poor(%)	0%	17%	17%	8%	0%	0%	
Poor(%)	8%	8%	17%	17%	17%	17%	
Good(%)	17%	33%	33%	25%	50%	42%	
Very Good(%)	33%	17%	17%	25%	8%	17%	
Excellent(%)	42%	25%	17%	25%	25%	25%	
TOTAL	100%	100%	100%	100%	100%	100%	
							Overall Mean Score
Mean	4.1%	3.3%	3.0%	3.4%	3.4%	3.5%	3.4%

Table 19. Shows results of the frequency, percentage and mean of the perception aspect "Evaluation process" done in Microsoft Excel sheets. Some graphs of the variable are also included

Respondent ID	Evaluation Variable E1	Evaluation Variable E2	Evaluation Variable E3	Evaluation Variable E4	Evaluation Variable E5	**Evaluation Variable E6**	**Evaluation Variable E7**	**Evaluation Variable E8**	
1	Good	Poor	Poor	Poor	Very Poor	**Very Poor**	**Poor**	**Very Poor**	
2	Good	Poor	Poor	Poor	Very Poor	**Very Poor**	**Poor**	**Very Poor**	
3	Good	Poor	Poor	Poor	Very Poor	**Very Poor**	**Poor**	**Very Poor**	
4	Good	Poor	Good	Very Good	Poor	**Poor**	**Poor**	**Very Poor**	
5	Good	Poor	Good	Very Good	Poor	**Poor**	**Poor**	**Very Poor**	
6	Good	Poor	Good	Very Good	Poor	**Poor**	**Poor**	**Very Poor**	
7	Good	Good	Good	Very Good	Poor	**Poor**	**Poor**	**Very Poor**	
8	Good	Good	Good	Very Good	Poor	**Poor**	**Poor**	**Very Poor**	
9	Good	Good	Good	Very Good	Poor	**Poor**	**Poor**	**Very Poor**	
10	Good	Good	Very Good	Very Good	Good	**Good**	**Good**	**Poor**	
11	Good	Good	Very Good	Very Good	Good	**Good**	**Good**	**Poor**	
12	Good	Good	Very Good	Very Good	Good	**Good**	**Good**	**Poor**	
13	Very Good	Good	Very Good	Good	Good	**Good**	**Good**	**Good**	
14	Very Good	Good	Very Good	Good	Good	**Good**	**Good**	**Good**	
15	Very Good	Good	Very Good	Good	Good	**Good**	**Good**	**Good**	
16	Very Good	Good	Very Good	Good	Good	**Good**	**Good**	**Good**	
17	Very Good	Good	Very Good	Good	Good	**Good**	**Good**	**Good**	
18	Very Good	Good	Very Good	Good	Good	**Good**	**Good**	**Good**	
19	Very Good	Good	Very Good	Very Good	Good	**Good**	**Good**	**Good**	
20	Very Good	Good	Very Good	Very Good	Good	**Good**	**Good**	**Good**	
21	Very Good	Good	Very Good	Very Good	Good	**Good**	**Good**	**Good**	
22	Very Good	Very Good	Very Good	Very Good	Good	**Very Good**	**Good**	**Good**	
23	Very Good	Very Good	Very Good	Very Good	Good	**Very Good**	**Good**	**Good**	
24	Very Good	Very Good	Very Good	Very Good	Good	**Very Good**	**Good**	**Good**	
25	Very Good	Very Good	Very Good	Very Good	Very Good	**Very Good**	**Very Good**	**Good**	
26	Very Good	Very Good	Very Good	Very Good	Very Good	**Very Good**	**Very Good**	**Good**	
27	Very Good	Very Good	Very Good	Very Good	Very Good	**Very Good**	**Very Good**	**Good**	

28	Very Good	Very Good	Excellent	Very Good	Very Good	**Very Good**	**Very Good**	**Very Good**	
29	Very Good	Very Good	Excellent	Very Good	Very Good	**Very Good**	**Very Good**	**Very Good**	
30	Very Good	Very Good	Excellent	Very Good	Very Good	**Very Good**	**Very Good**	**Very Good**	
31	Excellent	Excellent	Excellent	Very Good	Very Good	**Excellent**	**Excellent**	**Very Good**	
32	Excellent	Excellent	Excellent	Very Good	Very Good	**Excellent**	**Excellent**	**Very Good**	
33	Excellent	Excellent	Excellent	Very Good	Very Good	**Excellent**	**Excellent**	**Very Good**	
34	Excellent	Excellent	Excellent	Excellent	Excellent	**Excellent**	**Excellent**	**Excellent**	
35	Excellent	Excellent	Excellent	Excellent	Excellent	**Excellent**	**Excellent**	**Excellent**	
36	Excellent	Excellent	Excellent	Excellent	Excellent	**Excellent**	**Excellent**	**Excellent**	
Count (N)	36	36	36	36	36	**36**	**36**	**36**	
Not Answered	0	0	0	0	0	**0**	**0**	**0**	
Total	36	36	36	36	36	**36**	**36**	**36**	
Very Poor	0	0	0	0	3	**3**	**0**	**9**	
Poor	0	6	3	3	6	**6**	**9**	**3**	
Good	12	15	6	6	15	**12**	**15**	**15**	
Very Good	18	9	18	24	9	**9**	**6**	**6**	
Excellent	6	6	9	3	3	**6**	**6**	**3**	
TOTAL	36	36	36	36	36	**36**	**36**	**36**	
Very Poor(%)	0%	0%	0%	0%	8%	**8%**	**0%**	**25%**	
Poor(%)	0%	17%	8%	8%	17%	**17%**	**25%**	**8%**	
Good(%)	33%	42%	17%	17%	42%	**33%**	**42%**	**42%**	
Very Good(%)	50%	25%	50%	67%	25%	**25%**	**17%**	**17%**	

Excellent(%)	17%	17%	25%	8%	8%	**17%**	**17%**	**8%**	
TOTAL	100%	100%	100%	100%	100%	**100%**	**100%**	**100%**	
									Average Mean Score
Mean	3.8%	3.4%	3.9%	3.8%	3.1%	**3.3%**	**3.3%**	**2.8%**	**3.4%**

Table 19. Shows results of the frequency, percentage and mean of the perception aspect "Supervisor-supervisee relationship" done in Microsoft Excel sheets. Some graphs of the variable are also included.

Respondent ID	Relationship Variable F1	Relationship Variable F2	Relationship Variable F3	Relationship Variable F4	
1	Very Poor	Very Poor	Very Poor	Very Poor	
2	Very Poor	Very Poor	Very Poor	Very Poor	
3	Very Poor	Very Poor	Very Poor	Very Poor	
4	Poor	Very Poor	Very Poor	Very Poor	
5	Poor	Very Poor	Very Poor	Very Poor	
6	Poor	Very Poor	Very Poor	Very Poor	
7	Good	Poor	Poor	Poor	
8	Good	Poor	Poor	Poor	
9	Good	Poor	Poor	Poor	
10	Good	Good	Poor	Good	
11	Good	Good	Poor	Good	
12	Good	Good	Poor	Good	
13	Good	Good	Good	Very Good	
14	Good	Good	Good	Very Good	
15	Good	Good	Good	Very Good	
16	Good	Good	Good	Very Good	
17	Very Good	Good	Good	Very Good	
18	Very Good	Good	Good	Very Good	
19	Very Good	Very Good	Good	Very Good	

20	Very Good	Very Good	Good	Very Good	
21	Very Good	Very Good	Good	Very Good	
22	Excellent	Very Good	Very Good	Excellent	
23	Excellent	Very Good	Very Good	Excellent	
24	Excellent	Very Good	Very Good	Excellent	
25	Excellent	Very Good	Very Good	Excellent	
26	Excellent	Very Good	Very Good	Excellent	
27	Excellent	Very Good	Very Good	Excellent	
28	Excellent	Excellent	Excellent	Excellent	
29	Excellent	Excellent	Excellent	Excellent	
30	Excellent	Excellent	Excellent	Excellent	
31	Excellent	Excellent	Excellent	Excellent	
32	Excellent	Excellent	Excellent	Excellent	
33	Excellent	Excellent	Excellent	Excellent	
34	Excellent	Excellent	Excellent	Excellent	
35	Excellent	Excellent	Excellent	Excellent	
36	Excellent	Excellent	Excellent	Excellent	
Count (N)	36	36	36	36	
Not Answered	0	0	0	0	
Total	36	36	36	36	
Very Poor	3	6	6	6	
Poor	3	3	6	3	
Good	10	9	9	3	
Very Good	5	9	6	9	
Excellent	15	9	9	15	
TOTAL	36	36	36	36	

Very Poor(%)	8%	17%	17%	17%	
Poor(%)	8%	8%	17%	8%	
Good(%)	28%	25%	25%	8%	
Very Good(%)	14%	25%	17%	25%	
Excellent(%)	42%	25%	25%	42%	
TOTAL	100%	100%	100%	100%	
					Average Mean Score
Mean	3.7%	3.3%	3.2%	3.7%	3.5%