

EFFECT OF INDUSTRIAL TRAINING ON ACADEMIC PERFORMANCE: EVIDENCE FROM MALAYSIA

Megat Mohd Nor, P.N.S. and Ismail, S.

Department of Accounting,
Faculty of Economics and Management Sciences,
International Islamic University Malaysia
suhaiza@iium.edu.my

ABSTRACT

This study aims to investigate the effect of industrial training on subsequent academic performance of accounting students in Malaysia. The performance measures examined in this study include the overall academic performance of the students as well as their performance in subsequent specific courses. In addition to the overall sample analysis, the study also investigates the impact on performance based on gender. This study uses secondary data obtained from the university database. In particular, the data on the list of accounting students who underwent practical training, information on GPA, CGPA, and the results for fundamental auditing, advanced auditing, fundamental taxation and advanced taxation courses for each student, are extracted from the database. The data are analysed using the Statistical Package for the Social Sciences (SPSS) software. In addition to the rudimentary statistical analysis techniques of mean score and standard deviation, paired-samples t-tests are conducted to examine the statistical significant impact of internship on performance for the overall sample as well as based on gender. The findings reveal that there is a statistically significant positive impact of internship on the academic performance of accounting students for overall performance as well as for performance in auditing and taxation. Analysis by gender indicates that the results for females are consistent with the overall analysis results, while the results for their male counterparts are mixed. In conclusion, industrial training contributes to better academic achievement irrespective of gender.

Keywords: *industrial training, internship, accounting students, academic performance, Malaysia*

1. INTRODUCTION

The incorporation of industrial training in the accounting degree programme has been implemented by higher learning institutions in various countries since the early 1900s (Lowe, 1965). The main objective of the programme is to expose students to the real accounting work life, upon which the students will embark after their graduation. In addition, the internship programme is also expected to provide the students with the opportunity to develop the necessary skills and competencies required by the accounting profession (Ministry of Higher Education, 2006). The internship program has been claimed to provide benefits not only to the interns but also to the employers that provide internship opportunities to students.

The benefits claimed to have been gained by students from the internship programme include increasing the understanding of students concerning real business, enhancing the ability of the students to evaluate and assimilate classroom learning, acquiring a better understanding of the theoretical points introduced in the classroom, getting the opportunity to apply the knowledge acquired in the classroom to resolve real workplace issues, improving the students' self-development and soft skills, and, ultimately, improving their subsequent academic performance (Knechel and Snowball, 1987; Lowe, 1965; English and Koeppen, 1993; Gabris and Mitchell, 1989; Krull et al., 2001; Fender and Watson, 2005; Beck et al., 2008; Paisey and Paisey, 2009; Cord et al., 2010; and Gizzard, 2011).

In the case of Malaysia, internship has already been incorporated in the curriculum of the accounting programme of the public universities. The reassessment report on the accounting programme at public universities in 2006 states that it is a requirement for accounting students in all public universities in Malaysia to undertake an internship program for a period of six months (Ministry of Higher Education, 2006). Previously, although internship has been made compulsory, the duration varies between universities, and ranges from three to six months. The standardization of the duration of the internship to the higher end of the range – six months – to some extent, indicates that the authorities realize the benefits of the internship to the students. To qualify for the internship programme, students need to fulfil a minimum credit of 90 hours earned and must pass the Taxation 1 and Auditing 1 courses. After the practical training, students have at least one semester to complete their degree programme and are required to complete the remaining courses including Auditing 2 and Taxation 2. In line with the idea of the Ministry of Education, which emphasizes the importance of internship to accounting students, the present study aims to examine the effect of the internship programme on the overall academic performance of the students in terms of GPA and on the results of specific courses – auditing and taxation. In addition, the present study intends to examine the effects of internship on academic performance based on gender.

The main contributions of the study are that it not only contributes to the limited literature concerning the impact of internship on academic performance from developing countries, but it also extends the existing literature on internship by investigating its impact on performance based on gender. The rest of this paper is structured as follows. The next section, Section 2, reviews the relevant prior studies on the effect of internship on performance. Section 3 provides a description on the research methodology used for this present study. Then, the results and discussion are presented in Section 4. Finally, Section 5 offers the implications to the study, its limitations, suggestions for future study and the conclusion.

2. LITERATURE REVIEW

2.1 Internship and Academic Performance

The importance of industrial training in preparing students for the profession has attracted scholars and researchers to investigate the various aspects of the industrial training programme, such as the effectiveness of internship (Beard, 2007; Moghaddam, 2011; Moor and Thornton, 2013), its relationship with employability (Knouse et al., 1999), the framework of the internship programme (Cornish et al., 2005; Narayanan et al., 2010) and its impact on the performance of the students. There are two key aspects of performance that have been assessed by earlier studies, namely, performance in terms of interpersonal skills, self-development or attitude (Dare et al., 2006; Martin and Wilkerson, 2006; Marriot et al., (2011); Beck and Halim, 2008; Paisey and Paisey, 2009), and academic performance (Koehler, 1974; Knechel and Snowball, 1987; Gabris and Mitchell, 1989; English and Koeppen, 1993; Krull et al., 2001; Fender and Watson, 2005; Beck et al., 2008; Paisey and Paisey, 2009; Cord et al., 2010; and Gizzard, 2011). As the focus of this paper is on the effect of internship on the academic performance of the students, the review will focus on these related studies.

Koehler (1974) examined the effect of industrial training on the academic performance of accounting students from a university in the United States. The performance assessed was based on the cumulative CGPA and the average results of the accounting courses. The study reported that the overall academic performance of the students (i.e. CGPA) improved after the students completed the internship programme. In addition, the students who achieved a better internship result performed better in the accounting courses. In another related study, Knechel and Snowball (1987) carried out a study using a matched pair approach, whereby, the academic performance of students who underwent an industrial training programme was compared with the performance of students who did not participate in the internship programme. In contrast to Koehler (1974), Knechel and Snowball (1987) concluded that the performance of both interns and non-interns dropped significantly over the period of assessment, and that there was no significant difference in the post-internship performance between the two groups. Moreover, the study revealed that students who participated in the internship programme performed better than non-intern students only in auditing course. Likewise, a study by Arnold and Garland (1990) on students taking a business studies course in a university in the United Kingdom, reported that there was no significant relationship between industrial training and academic performance.

In a study similar to that of Knechel and Snowball (1987), English and Koeppen (1993), who also investigated the effect of internship on the subsequent academic performance of accounting students in the United States, reported that the post internship GPA of interns increased from 3.23 to 3.4, while the GPA of non-interns decreased from 3.24 to 3.2. Furthermore, internship students have been claimed to have significantly better results than non-internship students in an accounting course. The difference between the two studies (i.e. Knechel and Snowball (1987) and English and Koeppen (1993)) is in the internship structures examined by those studies. In particular, the internship programme examined by Knechel and Snowball (1987) is highly structured, and internship assignments were mainly in the audit section of public accounting firms. Whilst, the internship programme examined by English and Koeppen (1993) is more flexible with students being assigned to various firms, including private, public and non-profit accounting organizations of different sizes, which exposed them to a variety of tasks, such as tax, audit, financial, cost and systems. A similar result of significantly better performance of internship students, as compared to non-internship students, was discovered by Myring et al. (2005), SurrIDGE (2009), and Mansfield

(2011), who measured performance using either GPA or average percentage marks. These studies were conducted in the United Kingdom. An improvement in academic performance due to industrial training has also been reported in other disciplines, such as management and business studies (Green, 2011, Reddy and Moores, 2012), information technology (Reddy and Moores, 2012), human psychology and sociology (Reddy and Moores, 2012) and engineering (Schuurman et al., 2008; Reddy and Moores, 2012).

Despite the numerous studies that examined the relationship between internship and subsequent academic performance, most of the prior studies were carried out in developed countries, particularly in the United Kingdom and the United States. Moreover, most of the studies assessed academic performance in terms of the average academic result except Knechel and Snowball (1987), and English and Koeppen (1993), who investigated the effect of the performance of students in specific courses. Due to the scarcity of research in this area from developing countries, whose education structure and system may be different to those of the developed countries, as well as the inconclusive evidence reported by prior studies, the present study aims to extend the work of Knechel and Snowball (1987), and English and Koeppen (1993) by investigating the impact of internship on the overall academic performance and specific courses, particularly the auditing and taxation courses of the overall accounting students as well as based on gender.

2.2 Gender and Academic Performance

Several prior studies have scrutinised the impact of gender on academic performance. However, the results reported were inconclusive. For instance, Gomez et al. (2004), Morrison et al. (2005) and Woodfield et al. (2006) discovered that female students performed better than the male students, whilst studies by Jochem et al. (1996) and De Vita (2002) found an insignificant difference in the performance of male and female students. In the context of accounting disciplines, similar mixed results were reported. A study by Gracia and Jenkins (2003) discovered that female students performed significantly better than the males in the second year of study, but that there was no significant difference in the performance between the two groups in the third year. Studies by Carpenter and Friar (1993), Jackling and Anderson (1998), and Gammie et al. (2003) reported no significance gender differences in the performance of the accounting students. Despite the various studies on gender differences, to the best knowledge of the researcher, there is a scarcity of research that analysed the impact of internship on academic performance based on gender.

Based on the discussion concerning the benefits of an internship programme and the review of empirical evidence of prior literature on the impact of internship on academic performance and gender differences in the performance, the following hypotheses are proposed:

- H1 : There is a significant increase in the overall performance of students after the internship programme.
- H2 : There is a significant increase in the performance of female students after the internship programme.
- H3 : There is a significant increase in the performance of male students after the internship programme.
- H4 : There is no significant difference in the academic results between male and female students.

3. METHODOLOGY

To achieve the objectives of this study, secondary data obtained from the university database were used. Initially, the data on the list of accounting students who underwent practical training in a particular semester (i.e. Semester 2, 2012/2013) were generated from the university's examination database. In total, there were 190 students who underwent a six-month industrial training at various companies and organizations that offer accounting related work. The organizations represent both the private and public sectors. Then, information on GPA, CGPA, and the results for fundamental auditing, advanced auditing, fundamental taxation, advanced taxation, intermediate financial accounting and advanced financial accounting courses for each student were extracted from the database. The courses were chosen as they were related to the work assignments given to the students during their internship.

In evaluating the impact of internship on academic performance, the results of the students before they went for practical training were compared with the results after the internship programme. In particular, the overall results of the students based on GPA and CGPA in the semesters before and after industrial training were compared. Likewise, the results of the courses that the students enrolled in before they underwent practical training, namely, fundamental auditing, fundamental taxation, and intermediate financial accounting, were compared with the results of the courses taken after internship – advanced auditing, advanced taxation and advanced financial accounting. Paired-samples t-test was conducted to statistically examine the differences in the results before and after the internship for both the overall results as well as results of individual courses. A similar analysis of the paired-samples t-test was conducted to analyse the impact based on gender.

4. FINDINGS AND DISCUSSION

4.1 Demographic information and Descriptive Statistics

Of the 190 students who did their internship in Semester 2, 2012/2013, two students graduated immediately after completing the internship. Therefore, these students were omitted from the sample, as there was no information on their academic performance after the internship. Hence, the analysis was based on the information on the academic results of the remaining 188 students. Of the total 188 students, 140 (74.5 per cent) were female and 48 (25.5 per cent) were male.

4.2.1 Internship and Academic Performance

Overall Analysis

As shown in Table 1, the mean scores for the students' GPA before and after the industrial training are 3.045 and 3.172, respectively. This indicates that the overall performance of the students improved after the internship programme. Similarly, the average results for the subjects registered in the semester after the industrial training, which include advanced auditing (68.8 per cent) and advance taxation (69.8 per cent), are higher than the average results of the corresponding subjects, namely, fundamental auditing (65.4 per cent) and fundamental taxation (69 per cent), for which the students registered before undergoing practical training. In contrast, the average CGPA of the students dropped from 3.226 to 3.219 after the internship programme. To examine for the statistical significant changes in the performance of the students following the internship period, paired-samples t-tests are conducted. Table 1 below shows the results of the tests.

Table 1: Summary of paired-samples T-tests (Overall sample)

	Mean	SD	t-value
GPA (before)	3.045	0.407	-7.014***
GPA (after)	3.172	0.384	
CGPA (before)	3.219	0.318	-3.095***
CGPA (after)	3.226	0.314	
Auditing 1 (before)	64 %	0.792	-2.788***
Auditing 2 (after)	68 %	0.675	
Taxation 1 (before)	71 %	0.604	-3.091***
Taxation 2 (after)	76 %	0.729	

Note: *** significance at 1% level

As depicted in Table 1 above, there is a significant improvement in the students' overall results based on GPA and CGPA, as well as for specific courses of auditing and taxation. The results imply that the students performed better in their overall academic performance as well as for the courses that are closely relevant to their assignments during the internship programme. This shows that exposure to real work could enhance the understanding and learning of the students. Hence, hypothesis 1 (H1) is supported. The result is consistent with the findings reported by Koehler (1974) in terms of CGPA, English and Koeppen (1993) for GPA, and Knechel and Snowball (1987) for audit result. However, the results of the present study contradict the findings of Knechel and Snowball (1987), and Arnold and Garland (1990).

4.2.2 Analysis by Gender

Table 2 depicts the mean scores, standard deviations and summary results of the paired-samples t-test based on gender.

Table 2: Summary of paired-samples t-tests (Based on Gender)

	Male			Female		
	Mean	SD	t-value	Mean	SD	t-value
GPA (before)	2.858	0.484	-4.373***	3.109	0.030	-5.540***
GPA (after)	3.041	0.459		3.216	0.029	
CGPA (before)	3.075	0.365	-0.455	3.268	0.285	-3.874***
CGPA (after)	3.078	0.355		3.277	0.283	
Auditing 1(before)	64.6	0.710	0.570	64.0	0.819	-3.467***
Auditing 2 (after)	63	0.613		69.4	0.679	
Taxation 1 (before)	67.6	0.571	-2.540**	72.8	0.609	-2.028**
Taxation 2 (after)	73.8	0.679		77.4	0.757	

Note: *** significance at 1% level, ** significance at 5% level

In examining the statistical significance of the changes in the results after the internship programme, paired-samples t-tests were conducted for both the male and female groups. As shown in Table 2, there is a significant increase in all the results for the females. The results are consistent with the results of the overall analysis, as presented in Table 1. For the male counterparts, there is a statistically significant improvement in the GPA and the taxation courses at the 1% and 5% significant levels, respectively. Although the mean scores show a reduction in performance after the internship for the audit course, the drop was not statistically significant. Likewise, there is no significant improvement for results for the male students based on CGPA. To some extent, the results for the analysis by gender on the impact of internship on academic performance, mirror the results of the overall sample analysis, particularly the female sample and some performance measures (i.e. GPA and taxation) of the male counterparts. Hence, hypothesis 2 (H2) is supported, while hypothesis 3 (H3) is only supported to some extent.

In terms of the differences in the performance between the male and female students, based on the mean scores, as depicted in Table 2, the results of the female students are better than their male counterparts for all performance measures except for the audit course before the internship programme. Similarly, the results of the female students are higher than the average results of the overall analysis, as shown in Table 1. Moreover, the mean scores for both the male and female students show an increase in performance after the internship, except for the audit result of the male students, which shows a decline in the performance after the internship programme. To investigate for the significant difference in the results between the male and female students, an independent t-test was carried out. Table 3 provides the summary of the results.

Table 3: Summary of Levene's test and Independent t-test

No	Performance Measures	Levene's Test		Independent t-Test	
		F	Significance	T	Significance
1	GPA (before)	8.204	0.005	-3.826	0.000***
2	GPA (after)	2.678	0.103	-2.412	0.019**
3	CGPA (before)	2.700	0.102	-3.523	0.001***
4	CGPA (after)	2.991	0.085	-3.759	0.000***
5	Audit (before)	2.290	0.132	-1.462	0.147
6	Audit (after)	1.886	0.172	-2.259	0.029**
7	Taxation (before)	2.232	0.137	-1.676	0.096*
8	Taxation (after)	0.327	0.569	-0.999	0.322

Note: *** significance at 1% level, ** significance at 5% level, * significance at 10% level

Based on the results in Table 3, the differences in the results of the male and female students are statistically significant for most of the performance measures except the auditing course before internship, and the taxation course after internship. The results indicate that, to a large extent, the female accounting students have academically outperformed their male counterparts. Therefore, to a large extent, hypothesis 4 (H4) is not supported. This finding is consistent with the results reported by Gracia and Jenkins (2003), Gomez et al. (2004), Morrison et al. (2005), and Woodfield et al. (2006), but contradicts the results of studies, such as Carpenter and Friar (1993), Jackling and Anderson (1998), and Gammie et al. (2003).

5. IMPLICATIONS, LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

The present study investigated the effect of an internship programme on the subsequent academic performance of a group of accounting students. The study examined both their overall academic performance and their performance on individual courses that are related to internship exposure. Moreover, the study also analysed the impact on performance for the overall sample as well as based on gender. The overall results showed that there was a statistically significant positive impact of internship on the academic performance of accounting students for overall performance as well as for performance in auditing and taxation. For the analysis by gender, there were some differences in the findings between the male and female students. In particular, the results for the female group were similar to the overall analysis. For their male counterparts, although there was a significant impact of internship on performance for GPA and taxation, the effect of internship on the male students' CGPA and audit course were found to be statistically insignificant.

The results on the positive impact of internship on the subsequent academic performance of accounting students provide information to the Malaysian Ministry of Education concerning the importance of internship programmes for students. As the internship programme is a compulsory programme for the bachelor of accounting degree programme in all public universities in Malaysia, the Ministry may want to consider extending a similar regulation to private universities in Malaysia that are offering accounting programmes. In addition, the Ministry of Higher Education may also wish to consider introducing an internship programme to other degree programmes that, hitherto, have not required students to undergo internship, or have not made it compulsory for the students in the programme.

Moreover, the evidence offered in this study is crucially useful to existing accounting students who are yet to undergo their internship. The results of this study may motivate the students to obtain as much exposure as they can when they undergo industrial training, as, not only would it give them exposure to real work life and improvement in soft skills, but, more importantly, it would have a positive impact on their future academic performance. In addition, the relevant authorities including the Ministry of Education and lecturers may want to re-examine the most suitable time during the study period for the students to undergo their internship to ensure that optimum benefits are obtained by the students.

The mixed results concerning the impact of internship on academic performance for the male group means that the internship programme only benefited the male students in terms of their overall academic performance. The possible reason for the result is that the male students may not have fully engaged with or committed to their work assignment during the internship period. To ensure that maximum benefits are gained by all the students in the internship programme, lecturers may need to emphasize the importance and benefits of industrial training to students in class.

The present study is not without its limitations. This study only examined a batch of students who went for industrial training during a particular academic semester. To confirm the evidence of the present study, future studies may want to examine several batches of students who underwent internship during various academic semesters. In addition, the present study has not considered other factors that could have affected the academic performance of accounting students. Hence, future studies may want to include other factors, such as prior performance, size of the firm that the students are attached to during internship,

learning style and personality traits. Moreover, it may be prudent for future studies to evaluate the academic performance as well as the performance or improvement of the students in terms of their personal development and soft skills.

6. CONCLUSION

To some extent the present study provides insightful information and evidence concerning the positive impact of an internship programme on the academic performance of accounting students in Malaysia which are useful to various parties including educators, students, employers and relevant government authorities.

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