



**Crawford, I. and Wang, Z. (2016) 'Exploring the influence of individual and academic differences on the placement participation rate among international students: a UK case study.' *Education + Training*, 58 (4): 342-357.**

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## **Exploring the influence of individual and academic differences on the placement participation rate among international students: A UK case study**

### **Abstract**

**Purpose:** The paper investigates the low placement participation rate among international students compared with UK students, by examining the impact of individual factors such as gender and domicile and academic achievement such as prior academic qualification, prior academic results and subsequent academic results on students' choices of degree programmes as well as their graduation status.

**Methodology:** This study adopts a quantitative approach by using 268 accounting and finance students in a UK university.

**Findings:** The analyses show that UK students on entry are 35% more likely than international students to choose a degree programme with a placement module after controlling for individual and academic differences. Among females, international students who switch to a degree without placement following entry significantly and statistically underperformed their UK counterparts who complete a degree with placement from the first year onwards. This trend is not observable among male students. Instead, male students who select and graduate with a degree without placement are the worst performers, regardless of their nationalities.

**Research limitation:** The quantitative data used here are collected in a UK institution so the results reported here may lack generalisability.

**Practical implications:** International students need to know more about the benefits of undertaking placements on their academic performance and the development of generic skills before entry. Moreover, UK universities need to provide more assistance to international students, especially females about how to secure placements and how to widen their search for potential placements.

**Originality/value:** To the best of our knowledge, this study is the first to explain the low participation rate among international students in UK higher education.

**Keywords:** Placements; international students; academic performance; self-selection; accounting and finance students

## **Introduction**

According to the OECD report (2014), the United Kingdom was one of the top three most popular destinations for international students. This has made UK higher education an important arena in which to understand how international students develop and settle in English speaking settings. The increasing presence of international students in UK higher education raises a pedagogic question of whether the UK higher educational system is designed to afford all students the opportunity to participate in an educational offering such as placements, regardless of individual and academic differences. Placements require students to undertake a period of work experience during their degree study period (Little and Harvey, 2006) and can improve their chances of obtaining good degrees (2.1 or above) and/or better academic results in the final year (Duignan, 2003; Mandilaras, 2004; SurrIDGE, 2009; Reddy and Moores, 2012; Crawford and Wang, 2014b; Crawford and Wang, 2014a; Crawford and Wang, 2015a).

Prior studies which compare the academic performance of students who undertake placements (called sandwich) with students who do not have a break in their study (called full-time) observe significant and increasing performance gaps between those two groups of students from the first or second year to the final year (Duignan, 2003; Gomez et al., 2004; Reddy and Moores, 2012; Crawford and Wang, 2014a; Crawford and Wang, 2015a). Duignan (2003) first explains this phenomenon as a self-selection issue, suggesting that full-time students are academically less able students who are unable to secure a placement either

because of their poor interview performance or because of high academic requirements set up by companies (Duignan, 2003; Mansfield, 2011). Most recent survey and interview studies reveal that there are more than one reason for students to stay in full-time study and some full-time students have never thought of applying for placements due to personal and/or financial reasons (E4E 2011; Bullock et al., 2009; Tibby, 2012; Bathmaker et al., 2013).

The diversification among full-time students has never been investigated in previous studies since students are classified as either full-time or sandwich based on their graduation status so all full-time students are treated the same regardless of whether they have applied for placements or not. It is argued here that full-time students who have never applied for placements are academically different from full-time students who fail to secure placements. The existence of those two types of full-time students might hold the key to the following question: is academic underperformance the reason for a low placement participation rate among international students? Previous studies show that there are far more international students than UK students graduating from full-time degrees in higher education (Little and Harvey, 2006; Lucas and Tan, 2013; Crawford and Wang, 2014a; Crawford and Wang, 2015a). It is possible that international students graduate with full-time degrees not because they fail to secure placements but because they do not apply for placements.

The lack of participation in placements hampers the prospects of international students to achieve good results and good degree classifications (Mandilaras, 2004; Crawford and Wang, 2014a; Crawford and Wang, 2015a). Also, it is easy to assume that the low placement participation rate among international students is caused by poor academic results since it is reported that international students significantly underperform UK students in many academic disciplines and across the whole spectrum of UK universities (Morrison et al.,

2005; Iannelli and Huang, 2013; Crawford and Wang, 2014a; Crawford and Wang, 2015b). If academically less able UK students are unable to secure placements, international students with similar academic credentials and results competing for similar levels of placements are arguably even less likely to succeed. However, this suggestion does not consider individual and academic differences which might voluntarily lead international students to not choose or apply for placements. It is thus important to establish whether the low placement participation rate among international students is caused by their degree choices on entry or their failures to secure placements due to poor academic results later on.

This study is able to explore the above research question because it is based in a business school which recruits a large number of international students on accounting and finance degrees and gives students an option to undertake placements between the second and final years. Data collected from four cohorts of accounting and finance full-time and sandwich students are used to map out the journey of UK and international students from entry to placements and graduation. This approach will help to differentiate among international students and classify them into full-time students who do not apply for placements, full-time students who fail to secure placements and sandwich students who successfully undertake placements. In particular, the academic performance differences between sandwich students and two other types of full-time students who do not undertake placements for different reasons are analysed while controlling for individual factors.

### **Self-selection issue**

Despite the wealth of the work placement literature, only a handful of prior papers investigate the academic performance differences between sandwich and full-time students both prior to and following placements (Duignan, 2003; Gomez et al., 2004; SurrIDGE, 2009; Mansfield, 2011; Patel et al., 2012; Reddy and Moores, 2012; Crawford and Wang, 2014a) and the

results do not unanimously support the self-selection issue, that is, sandwich students are academically better or higher achievers than full-time students. Duignan (2003), Gomez *et al.* (2004), Reddy and Moores (2012) and Crawford and Wang (2014b) note the existence of the self-selection issue and show that sandwich students tend to be higher achievers than full-time students prior to placements. On the other hand, SurrIDGE (2009), Mansfield (2011) and Patel *et al.* (2012) find no evidence to support the self-selection issue since the performance differences between sandwich and full-time students prior to the final year in their studies are not statistically significant.

The literature is inconclusive regarding the self-selection issue, probably because many prior studies use a small number of students enrolled in different academic years, on a single degree programme and from one university to investigate the performance differences. In addition, some studies (Duignan, 2003; Gomez *et al.*, 2004; SurrIDGE, 2009; Mansfield, 2011) examine the performance differences prior to the final year without simultaneously controlling individual factors such as age, gender, domicile, ethnicity or prior academic achievement. The literature reveals that the academic performance of undergraduates in UK universities is evidently influenced by individual factors such as age, gender, domicile, ethnicity, prior academic achievement, discipline of study, institution and mode of study to various degrees (Smith and Naylor, 2001; Richardson and Woodley, 2003; Morrison *et al.*, 2005; Sheard, 2009; Cassidy, 2012; Iannelli and Huang, 2013; Crawford and Wang, 2014b; Crawford and Wang, 2015b).

Two prior papers (Reddy and Moores, 2012; Crawford and Wang, 2014a) are extremely relevant and important in understanding the self-selection issue in UK higher education. Reddy and Moores (2012) use over 6,000 students, albeit from one UK university, graduating

between 2003 and 2009 from a wide range of degree programmes to examine the impact of optional placements on the final year marks. Their results support the self-selection issue for students who undertake placements tending to be higher achieving. Such large student data add credibility to the existence of the self-selection issue among UK students. The literature so far does not pay much attention to the impact of placements on the academic performance of international students. Only one published study by Crawford and Wang (2014b) investigates the self-selection issue among international students and finds no evidence to suggest that sandwich students are academically better than full-time students prior to placements.

### **The current research**

#### *Aims*

The literature investigating the self-selection issues simply classifies students into sandwich and full-time students (E4E 2011; Blackwell et al., 2001; Duignan, 2003; Gomez et al., 2004; Mandilaras, 2004; Auburn, 2007; Bullock et al., 2009; Surridge, 2009; Mansfield, 2011; Tibby, 2012; Crawford and Wang, 2014a; Crawford and Wang, 2015a). Such an approach is from a graduation viewpoint and ignores what has happened to students between entry and graduation. To graduate from the sandwich programme, students must apply for placements and succeed in the selection process against other students from the same or different universities in the first two academic years. It is inevitable that some students may never apply for placements while others cannot secure placements. Students who fail to secure placements would have to revert to full-time degree programmes at the end of year 2.

The existence of those students is important to the understanding of a low placement participation rate among international students. On entry, all students were asked to fill in the form to declare their degree choice, either sandwich or full-time, to the registry. At

graduation, sandwich students were those who were successful in undertaking placements. If a student registered for a sandwich degree but graduated as a full-time graduate, it was reasonable to deduce that this student failed placement applications or interviews at some point in the first two academic years. This approach was not without limitations. Students registered for a sandwich programme for instance might have never applied for placements due to various reasons and graduated as full-time. However, there is evidence to suggest that most students are likely to follow their registered degree programmes to the end (Reddy and Moores, 2006).

### *Participants*

The sample included 268 accounting and finance students who enrolled between 2006 and 2009 and successfully completed full-time or sandwich programmes in a UK business school. Four cohorts of students were aggregated to reduce the risk of small sample size for individual years and the risk of the impact of an atypical year on the statistical analyses.

The business school has very high entry requirements for international students. Potential students are expected to achieve at least 3 A grades from GCE A-level (The General Certificate of Education Advanced Level, shortened to A level hereafter) or have equivalent results from other national and international pre-university examinations such as foundation courses, baccalaureate, etc. (for detail, see (Crawford and Wang, 2014b)). A-level is the standard entry qualification for UK universities and is a subject-based qualification mostly taken by UK or international students aged 16–19. The A-level grades range from A star, A, B, C, D to F (fail). Students who obtained 3 or more A grades from A level are considered as academically strong by prior studies (NAO 2002<sub>a</sub>; NAO 2002<sub>b</sub>; Duff, 2004; Crawford and Wang, 2014b; Crawford and Wang, 2014a; Crawford and Wang, 2015a; Crawford and Wang, 2015b). International students additionally need to obtain at least IELTS (International



English Language Testing System) level 7 for a successful application. Good English skills and excellent prior academic achievement are likely to place international students on a level playing field with UK students, as indicated by Iannelli and Huang (2013).

### *Analytical procedures*

By comparing student degree choice on entry (sandwich or full-time) and graduation status (sandwich or full-time), it was revealed that there were four possible pathways for any student. Students registered as full-time could either graduate with a full-time or sandwich degree. The same was true for students registered as sandwich. Four pathways were depicted in Diagram 1, namely, full-time/full-time, full-time/sandwich, sandwich/full-time and sandwich/sandwich. Full-time/sandwich students (henceforth, full-time switchers) referred to those full-time students on entry but who graduated with a sandwich degree while sandwich/full-time students (henceforth, sandwich switchers) represented those sandwich students on entry but who graduated with a full-time degree. On the other hand, full-time/full-time (henceforth, full-time non-switchers) and sandwich/sandwich students (henceforth, sandwich non-switchers) were those who had followed their original degree choices from entry to graduation.

### **Insert Diagram 1**

Table 1 showed that the majority of sample students were full-time non-switchers (91%) or sandwich non-switchers (69%). There were far fewer full-time switchers (9%, 11 students) than sandwich switchers (31%, 47 students). 47 students registered for the sandwich degree failed to find placements while 11 students registered for the full-time degree successfully secured placements and switched to the sandwich degree. Of 47 sandwich switchers, 17 of them were UK students while the other 30 students were international. On entry, 73% (87) of UK students and 43% (63) of international students chose the sandwich programme. Among 63 international students registered for the sandwich degree, only 52% of them managed to

secure placements while 80% of 87 UK students registered for the sandwich programme succeeded in finding placements. Of 11 full-time switchers, 5 of them were UK students and 6 were international students, representing 7% of 85 international students and 15% of 33 UK students registered for full-time study.

### **Insert Table 1**

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Two statistical methods, binary and multiple regressions, were deployed in this study. Binary and multiple regressions were used to examine the determinants of student choice of degree programme on entry and the significant levels of yearly academic performance differences among four pathway students. Based on the literature, relevant individual factors such as gender, domicile, prior academic performance and prior academic qualification were included as control variables in all regressions (Smith and Naylor, 2001; Richardson and Woodley, 2003; Morrison et al., 2005; Iannelli and Huang, 2013; Crawford and Wang, 2014b; Crawford and Wang, 2014a; Crawford and Wang, 2015b; Crawford and Wang, 2015a). Age was not considered in this study and was justified on the basis that only two students were classified as mature students on entry. Gender took 1 if students were female and zero otherwise. Domicile was equal to 1 if students were British and zero otherwise.

Similar to Crawford and Wang (2014a), prior academic qualifications were dummy coded into two categories, 1 for students who studied A level before entry and zero for non-A level national or international qualifications. Following Crawford and Wang (2014a) and (2015b), excellent prior academic achievements were represented by the number of A grades obtained. Students with 3 or more A grades from A level or equivalent results from other non A-level qualifications were classified as academically most able students (3As) while students with fewer than 3 A grades from A level or other qualifications were grouped in a category called non 3As. The detailed prior academic results of some students were not recorded by the

registry or were unable to be converted to the number of A grades so this group of students was classified as no info. Prior academic achievement was thereafter dummy coded into two variables, one called 3As (3 or more A grades=1; non 3 As and no info =0) and one called non 3As (non 3As =1; no info and 3As =0).

The descriptive statistics of sample students were reported in Table 2 by gender, domicile, prior academic achievement and prior academic qualification. The sample had 120 UK students (45%) and 148 international students (55%). 52% of the sample students were females while 48% were males. Among UK students, there were more males than females, 52% and 48% respectively while the majority of international students (55%) were female. There is no apparent explanation for the gender variation among UK and international students. The relatively balanced student numbers between males and females and between international and UK are a great advantage for statistical analyses because neither of the group sizes is too small.

### **Insert Table 2**

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Table 2 revealed that 93% of UK students and 54% of international students had A level study experience. Precisely 50% of UK students had a very strong academic record with 3 or more A grades on entry while 47% of them had fewer than 3 A grades. Among international students, the largest group (42%) included those without prior academic achievement information (no info) while the rest split rather equally, 28% having 3 or more A grades and 30% having fewer than 3 A grades. Females were better qualified than males. Compared with UK students, international students were likely to obtain non-A level exam results which were difficult to record or covert into A level grades, hence these were classified as no info. Of females 75% obtained A level study experience, compared with 68% of males. 40% of

females had 3 or more A grades and 36% of males have the same level of academic achievement. Similar percentages of males and females had no prior academic information, 24% and 25% respectively.

### *Regression results*

Binary regressions included the following variables: gender, domicile, prior academic qualification and prior academic achievement. The dependent variable in the binary regression would take 1 if a student registers for the sandwich programme on entry and zero for the full-time programme. The determinants of degree choices of all students were analysed first and then the sample was segregated by domicile for further analyses. The results of binary regressions were reported in Table 3. For all students, only one variable, domicile, was statistically significant at 1% level. It indicated that UK students were 35% more likely than international students to apply for the sandwich degree on entry. The binary regression results suggested that the choice of sandwich degree was not significantly and statistically related to prior academic achievement, gender and prior academic qualification among all students as well as among UK or international students.

### **Insert Table 3**

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An additional two independent variables were included in the multiple regressions to control for the presence of four pathway students. Given that full-time switchers were few (11 out of 268 students) in this study and were similar to sandwich non-switchers in terms of successfully undertaking placements and good academic performance, these two pathway students were aggregated and treated as one group in regressions to reduce the impact of small sample size on the reliability of the statistical analyses. So, four pathway students were dummy coded into two variables, full-time non-switcher (full-time non-switchers=1; others=0) and sandwich switcher (sandwich switchers=1; others=0). The data was tested for normality, linearity and homoscedasticity, independence of errors and multicollinearity and

no assumptions underpinning the regression analyses were violated. The dependent variables were yearly academic marks as well as degree average marks for all sample students.

The regression results by domicile and gender were shown in Table 4. When the sample was split by domicile, regressions explained between 25% and 39% of the variability in marks among UK students, significant at 1% level in all years. On the other hand, regressions were unable to significantly explain the variability in marks among international students in years 1 and 2 but significantly explained 7% of the variability in marks in the final year. Among UK students, full-time non-switchers and sandwich switchers were both significantly underperforming sandwich non-switchers and full-time switchers who successfully completed placements though full-time non-switchers, instead of sandwich switchers, were the worst performers.

#### **Insert Table 4**

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When the sample was split by gender, regressions were significant at explaining the variability in marks among males and females in all years. Among male students, excellent prior academic achievement and full-time non-switcher were two significant variables in all years. Full-time non-switchers were the worst performers among male students while sandwich switchers did not perform much worse than sandwich non-switchers and full-time switchers prior to placements. Female students were differently influenced by variables. The only variable which was significant in all years was sandwich switcher. Female sandwich switchers significantly underperformed those female students who successfully completed placements such as sandwich non-switchers and full-time switchers by nearly 5, 9 and 9 marks from the first year to the final year. As well, female sandwich switchers performed worse than full-time non-switchers in all years.

There were some noticeable differences among males and females. Prior academic achievement and prior academic qualification were important in determining the yearly and degree average results of male students but not those of female students. The underperformance of UK students in the first year, compared with international students, was statistically shown only among male students. The academic performance differences between UK and international male students in the second and final years were not statistically significant. On the other hand, UK females significantly outperformed international females from the second year onwards by 4 and 7 marks, significant at 1% levels. For the final degree average mark, UK females gain nearly 6 more marks than international females.

### **Discussion and conclusions**

This study represents an early attempt to understand the low placement participation rate among international students by tracking the dynamic decision making of students regarding placements and their academic performance from entry to graduation. Placements offer students opportunities to use academic learning and theories in real life situations and develop a good understanding of cultural differences in a more natural setting (Bandura, 1977; Kolb, 1984; Maznevski and DiStefano, 2000; Kolb and Kolb, 2005). Yet, a large portion of UK undergraduate students are not benefiting from placements (E4E 2011; Little and Harvey, 2006; Wilson, 2012). It is known that the reluctance to undertake placements among UK students is related to a wide range of academic, personal and financial reasons such as poor academic performance, socioeconomic status, financial constraints, cohort effect, accommodation contracts, etc (E4E 2011; Duignan, 2003; Gomez et al., 2004; Little and Harvey, 2006; Bullock et al., 2009; Mansfield, 2011; Tibby, 2012; Bathmaker et al., 2013).

This article does not consider all possibilities, instead, the focal theme of this research is to explore whether the self-selection issue is able to explain the lack of placement participation among students. The self-selection issue is unlikely to be investigated by survey or interview studies which usually obtain qualitative data from a student sample. Instead, the literature proposes the self-selection issue based on the student population and a quantitative approach which analyses the observable academic performance differences between sandwich students and full-time students while controlling for individual and academic factors such as nationality, gender, prior academic qualification and prior academic achievement. The main contribution of our study is to recognise two variations among full-time students, those who never apply for placements and those who fail to secure placements, by comparing the student choice of degree programme on entry and their graduation status. The authors do not profess that this method is without limitations since students could decide to switch degree programmes following entry. Our results reveal that 78% of the student population stick with their degree choices to graduation.

This study notes that on entry UK students in the population are 35% more likely than international students to choose the degree programme with an optional placement after controlling for prior academic achievement, prior academic qualification and gender. This partly explains the low placement participation rate among international students. It is possible that international students who could successfully obtain degrees from UK universities do not need to undertake placements to gain a competitive advantage in their own labour market. It is also possible that international students do not choose a degree with placement due to additional costs and time used to complete a yearlong placement. After interviewing Biology and Engineering students from Bath University, Bullock *et al* (2009)

report that over 70% of sampled UK domiciled students choose not to undertake placements because they wish to continue studies without a break.

Our results reveal that the existence of two types of full-time students has an important and additional influence to the literature because it leads to a new understanding about the low participation rate among international students and the differences between international and UK students. The academic performance comparisons of those two kinds of full-time students with those who successfully complete placements reveal that the self-selection issue is not universally happening among all full-time students. Instead of treating all students who failed to secure placements as the same (Duignan, 2003; Gomez et al., 2004; Mandilaras, 2004; Reddy and Moores, 2012; Crawford and Wang, 2014a; Crawford and Wang, 2015a), we reveal that some full-time students cannot secure placements due to non-academically related reasons.

The self-selection issue seems to provide an explanation for why some UK full-time students fail to secure placements since those students statistically underperform sandwich students across the whole degree study period. It is reasonable to see that academically weak students have more difficulties than academically strong students in securing placements. Internships are used for recruitment and selection purposes for permanent staff (Zhao and Liden, 2010). Internships are akin to placements, so companies are likely to use placements to select potential employees. It is known that in areas such as investment banking, accountancy, law and consultancy, top UK companies only recruit the best academic achievers (Peacock, 2012). Accounting and finance students in this study are advised by placement officers to mainly seek placements with leading accounting and finance companies. Since placements in



top accounting and financial companies are very desirable and well remunerated, students without excellent academic results are unlikely to pass the initial application stage.

On the other hand, the self-selection issue cannot explain why some full-time international students fail to secure placements. In fact, only female full-time international students who fail to secure placements significantly and statistically underperform those who successfully undertake placement from the first year to the final year. Male full-time international students who fail to secure placements are not academically worse than those who undertake placements in the first two academic years. It is possible that international male students who fail to secure placements do so not because of their academic results but because they do not have the same social networks as UK students or fail to engage with internal university systems such as CV writing sessions, mock interviews, interview preparations or placement presentations and talks. Due to the sole reliance on the quantitative data, this research is unable to pinpoint the non-academically related reasons for why academically able international male students cannot secure placements. Future survey or interview studies with employers should be used to identify the possible reasons.

This research is situated in a UK institution where students are encouraged to think of placements from the beginning and are required to attend a compulsory placement module in the first year regardless of their choices of degree programmes (full-time or sandwich). All students should gain a pretty good understanding of the importance of undertaking placements following entry even though they were not fully aware of the implications of the degree choices they signed up to before entry. Still, 85% of UK students and 91% of international students who choose a degree programme without placements on entry graduate as full-time students. This fact raises a concern about how effective the placement module is

at motivating students to consider placements. In particular, international male students are different from the rest full-time students in that they are not academically weak in the first two years.

In addition, 48% of international and 20% of UK students who choose a degree with placement on entry fail to secure placements and graduate with a sandwich degree. These numbers provoke further doubt about the usefulness of the internal CV and interview support and advisory systems as well as the levels of engagement among UK and international students who choose no placement on entry. Students are advised to apply for placements in leading accounting and finance companies which are likely to lead to a low success rate, especially among international students, due to fierce competition for a limited number of placements in prestigious organisations. It is likely that more international students can secure placements if different kinds of placements and different types of organisations are being introduced to students with varied academic and family backgrounds. The current study is limited to one university in the UK. Follow-up studies in other locations with other degrees and placements should be conducted before the findings of this research are treated as generalisable beyond the chosen programmes and location.

The practical implications of this study are as follows. First, universities should emphasise the benefits of undertaking placements to international students prior to and following entry. Prior studies show that placements can improve international students' chances of obtaining good degrees (2.1 or above) (Mandilaras, 2004; Crawford and Wang, 2014a; Crawford and Wang, 2015a). In addition, the rankings of UK university departments on published league tables often incorporate as one of their factors the percentage of first and 2:1 degrees (good degrees) awarded and sometimes a value added measurement which compares student entry

levels with degree classification awarded, as suggested by Mansfield (2011). To advise and engage international students in placements, it is important for universities to understand the motivations of their degree choices on entry and personal, situational or other reasons why some of them do not apply for or cannot secure placements.

Second, universities should work with companies and government to invest more money in placements. Top 100 UK firms created 13,049 paid internships and placements in 2014 (High Fliers Research, 2015) which was a very small number compared with 383,630 students who graduated in the year 2013/14 (HESA, 2015). It is inevitable that universities need to encourage international students to take up unpaid placements or placements in small or medium enterprises (SMEs). There are plenty of unpaid or even paid placements in some academic disciplines which are not fully taken up by current students (Reddy and Moores, 2006; Auburn, 2007; Bullock et al., 2009). In addition, Heyler and Lee (2014) find that SMEs are willing to give graduates with low degree classifications and prior entry qualifications an opportunity to undertake placements. The impact of placements with SMEs on future employment of university graduates is impressive since about 22% of sandwich students are being offered full-time jobs with the local and large national companies (Helyer and Lee, 2014).

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Diagram 1 Four development pathways of students based on their choices of degree on entry and their graduation status

<b>Possible Pathways</b>	<b>Registration</b>	<b>Years 1 and 2</b>	<b>Placement year</b>	<b>Final year</b>
	Choice of degree	Work placement applications and interviews	Optional	Graduation Status
Pathway 1	Full-time	Not yet applied	N/A	Full-time
Pathway 2	Full-time	Succeed in applications and interviews	Placements	Sandwich
Pathway 3	Sandwich	Failed applications and interviews	N/A	Full-time
Pathway 4	Sandwich	Succeed in applications and interviews	Placements	Sandwich

Table 1 Full-time and sandwich switching among all students and by domicile

<b>All students</b>						
Registration/Entry	N	Four pathways	N	Percent	Graduation	N
Full-time	118	Full-time non-switchers	107	91	Full-time	154
		Full-time switchers	11	9		
Sandwich	150	Sandwich switchers	47	31	Sandwich	114
		Sandwich non-switchers	103	69		
<b>UK students</b>						
Registration/Entry	N	Four pathways	N	Percent	Graduation	N
Full-time	33	Full-time non-switchers	28	85	Full-time	45
		Full-time switchers	5	15		
Sandwich	87	Sandwich switchers	17	20	Sandwich	75
		Sandwich non-switchers	70	80		
<b>International students</b>						
Registration/Entry	N	Four pathways	N	Percent	Graduation	N
Full-time	85	Full-time non-switchers	77	91	Full-time	107
		Full-time switchers	6	8		
Sandwich	63	Sandwich switchers	30	48	Sandwich	39
		Sandwich non-switchers	33	52		

Notes: Full-time non-switchers and sandwich non-switchers refer to student whose choices of degree programmes are the same as their graduation statutes. Full-time switchers refer to students who register for full-time study on entry but graduate with a sandwich degree while sandwich switchers are students choosing sandwich programme on entry but graduating with a full-time degree. Percentages are computed based on the total number of sub-categories of full-time and sandwich students.

Table 2 Descriptive statistics of sample students by gender, domicile, prior academic qualification and prior academic achievement.

	<b>Total</b>		<b>Gender</b>							
	N	Percent	Females	Percent	Males	Percent				
<b>Domicile</b>										
UK	120	45	57	48	63	52				
International	148	55	82	55	66	45				
Total	268	100	139	52	129	48				
	<b>Prior academic achievement</b>				<b>Prior academic qualification</b>					
	3As	Percent	No 3As	Percent	No info	Percent	GCE A-Level	Percent	Others	Percent
<b>Gender</b>										
Females	55	40	49	35	35	25	104	75	35	25
Males	46	36	52	40	31	24	88	68	41	32
<b>Domicile</b>										
UK	60	50	56	47	4	3	112	93	8	7
International	41	28	45	30	62	42	80	54	68	46

Notes: GCE A level represents all students who studied A level in high school; others include students who studied foundation courses, European or international baccalaureate, and other overseas qualifications which are equivalent of A level. Prior academic achievement: 3 As refer to the students having 3 or more A grades in A level study; Non 3 As represents the students having fewer than 3 A grades and no info refers to the students whose prior academic qualifications cannot be converted into the number of A grades.



Table 3 Binary regression analyses of student choice of degree programme on entry

	All students	UK students	International students
Constant	-0.18	1.03	-0.04
Exp(B)	0.52	0.37	0.89
Sig (p-value)	0.83	2.81	0.96
Qualification (A Level=1; other=0)	-0.78	0.95	-1.31
Exp(B)	0.19	0.36	0.07
Sig (p-value)	0.46	2.58	0.27
3As (3As =1; non 3As and No info =0)	0.52	-1.16	0.94
Exp(B)	0.40	0.45	0.21
Sig (p-value)	1.69	0.31	2.55
Non 3 As (Non 3As =1; 3As and no info=0)	0.66	-1.04	1.17
Exp(B)	0.29	0.50	0.12
Sig (p-value)	1.94	0.35	3.22
Gender (M=0; F=1)	-0.08	0.27	-0.31
Exp(B)	0.76	0.52	0.38
Sig (p-value)	0.92	1.31	0.74
UK (UK=1; others=0)	1.35	n.a.	n.a.
Exp(B)	<b>0.00</b>	n.a.	n.a.
Sig (p-value)	3.87	n.a.	n.a.
Nagelkerke R Square	0.13	0.02	0.05
Chi-Square	<b>27.10</b>	1.40	5.88
Sig.	0.00	0.84	0.21
No of cases	268	120	148

Notes: Dependent variable takes 1 if a student chooses sandwich degree on entry and zero otherwise. Independent variables include gender (male=0; female=1), domicile (international=0; UK=1), qualification (non-A level=0; A level=1) and prior academic achievement which is dummy coded into two variables, one called 3As (3 or more As=1; non 3As and no info =0) and one called non 3 As (non 3As=1; 3 or more As and no info =0). Bold italic numbers represent statistically significant at 1% or 5% level.

Table 4 Regression analyses of years 1, 2, final year and degree average marks by domicile and gender.

<b>UK students</b>	Year 1	Year 2	Final year	Degree mark
Constant	<b>64.36</b>	<b>63.89</b>	<b>64.45</b>	<b>64.04</b>
Sig (p-value)	0.00	0.00	0.00	0.00
Qualification (A Level=1; other=0)	<b>-11.16</b>	-7.29	-5.64	<b>-6.19</b>
Sig (p-value)	0.00	0.07	0.08	0.05
3As (3As =1; non 3As and No info =0)	<b>13.26</b>	8.96	<b>9.71</b>	<b>9.53</b>
Sig (p-value)	0.01	0.10	0.03	0.03
Non 3 As (Non 3As =1; 3As and no info=0)	7.16	3.03	6.11	5.03
Sig (p-value)	0.13	0.58	0.16	0.25
Gender (M=0; F=1)	2.31	<b>3.38</b>	<b>3.53</b>	<b>3.46</b>
Sig (p-value)	0.07	0.02	0.00	0.00
Full-time non-switchers (FTNS=1; others=0)	<b>-5.19</b>	<b>-6.48</b>	<b>-8.54</b>	<b>-7.72</b>
Sig (p-value)	0.00	0.00	0.00	0.00
Sandwich switchers (SW=1; others=0)	<b>-5.59</b>	<b>-5.66</b>	<b>-7.90</b>	<b>-7.07</b>
Sig (p-value)	0.00	0.01	0.00	0.00
Adjusted R square	0.30	0.25	0.37	0.39
F	<b>9.30</b>	<b>7.46</b>	<b>12.51</b>	<b>11.80</b>
Sig.	0.00	0.00	0.00	0.00
No of cases	120	120	120	120
<b>International students</b>				
Constant	<b>64.69</b>	<b>59.76</b>	<b>63.51</b>	<b>62.12</b>
Sig (p-value)	0.00	0.00	0.00	0.00
Qualification (A Level=1; other=0)	0.38	-1.90	-2.71	-2.42
Sig (p-value)	0.87	0.48	0.26	0.32
3As (3As =1; non 3As and No info =0)	2.08	2.96	2.35	2.62
Sig (p-value)	0.42	0.31	0.37	0.32
Non 3 As (Non 3As =1; 3As and no info=0)	0.28	2.39	0.12	0.98

Sig (p-value)	0.91	0.40	0.96	0.70
Gender (M=0; F=1)	-0.47	0.52	-0.06	0.17
Sig (p-value)	0.71	0.72	0.97	0.90
Full-time non-switchers (FTNS=1; others=0)	-2.08	-2.09	<b>-4.07</b>	<b>-3.36</b>
Sig (p-value)	0.18	0.23	0.01	0.03
Sandwich switchers (SW=1; others=0)	-2.64	<b>-5.39</b>	<b>-6.34</b>	<b>-6.03</b>
Sig (p-value)	0.16	0.01	0.00	0.00
Adjusted R square	0.00	0.02	0.07	0.05
F	0.96	1.48	<b>2.95</b>	<b>2.33</b>
Sig.	0.46	0.19	0.01	0.04
No of cases	148	148	148	148
<b>Male students</b>				
Constant	<b>65.72</b>	<b>59.66</b>	<b>64.23</b>	<b>62.50</b>
Sig (p-value)	0.00	0.00	0.00	0.00
Qualification (A Level=1; other=0)	-3.85	<b>-7.52</b>	<b>-5.16</b>	<b>-5.98</b>
Sig (p-value)	0.12	0.01	0.03	0.01
3As (3As =1; non 3As and No info =0)	<b>7.04</b>	<b>11.26</b>	<b>6.80</b>	<b>8.46</b>
Sig (p-value)	0.01	0.00	0.01	0.00
Non 3 As (Non 3As =1; 3As and no info=0)	1.69	5.78	2.34	3.60
Sig (p-value)	0.53	0.08	0.37	0.18
UK (UK=1; others=0)	<b>-3.07</b>	1.25	2.52	1.98
Sig (p-value)	0.04	0.48	0.08	0.18
Full-time non-switchers (FTNS=1; others=0)	<b>-3.93</b>	<b>-4.59</b>	<b>-7.41</b>	<b>-6.34</b>
Sig (p-value)	0.01	0.01	0.00	0.00
Sandwich switchers (SW=1; others=0)	-2.66	-2.84	<b>-5.98</b>	<b>-4.85</b>
Sig (p-value)	0.16	0.21	0.00	0.01
Adjusted R square	0.14	0.14	0.28	0.24
F	<b>4.36</b>	<b>4.45</b>	<b>9.36</b>	<b>7.57</b>

Sig.	0.00	0.00	0.00	0.00
No of cases	129	129	129	129
<b>Female students</b>				
Constant	<b>65.20</b>	<b>61.97</b>	<b>64.36</b>	<b>63.47</b>
Sig (p-value)	0.00	0.00	0.00	0.00
Qualification (A Level=1; other=0)	-0.61	3.35	0.10	1.23
Sig (p-value)	0.85	0.31	0.97	0.67
3As (3As =1; non 3As and No info =0)	3.74	-2.08	-0.93	-1.24
Sig (p-value)	0.26	0.54	0.77	0.68
Non 3 As (Non 3As =1; 3As and no info=0)	0.30	-4.02	-2.67	-3.08
Sig (p-value)	0.93	0.24	0.40	0.31
UK (UK=1; others=0)	-1.10	<b>4.10</b>	<b>7.03</b>	<b>5.86</b>
Sig (p-value)	0.48	0.01	0.00	0.00
Full-time non-switchers (FTNS=1; others=0)	-2.73	<b>-3.52</b>	<b>-4.75</b>	<b>-4.30</b>
Sig (p-value)	0.08	0.03	0.00	0.00
Sandwich switchers (SW=1; others=0)	<b>-5.04</b>	<b>-8.53</b>	<b>-8.50</b>	<b>-8.53</b>
Sig (p-value)	0.01	0.00	0.00	0.00
Adjusted R square	0.07	0.21	0.34	0.31
F	<b>2.65</b>	<b>7.10</b>	<b>12.88</b>	<b>11.47</b>
Sig.	0.02	0.00	0.00	0.00
No of cases	139	139	139	139

Notes: Y1, Y2, final year and degree average marks are analysed using the regressions which include the following variables: gender (male=0; female=1); domicile (international=0; UK=1); qualification (non-A level=0; A level=1); prior academic achievement which is dummy coded into two variables, one called 3As (3 or more As=1; non 3As and no info =0) and one called non 3 As (non 3As=1; 3 or more As and no info =0); four pathway students are dummy coded into two variables, full-time non-switcher (full-time non-switchers=1; others=0) and sandwich switcher (sandwich switchers=1; others=0). Bold italic numbers represent statistically significant at 1% or 5% level.