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What shapes student intentions? The interplay between policy, social and personal factors in postgraduate education

Gabriella Cagliesi[a] and Denise Hawkes [b]

[a]Department of Economics, Business School, University of Sussex, Falmer, UK; [b]Faculty of Business and Law, Anglia Ruskin University, Cambridge, UK

ABSTRACT

The Master's Loan Scheme in England was initially designed to support widening access to postgraduate education. However, the general increase in the average fees has posed a risk of reducing these schemes' effectiveness in promoting social mobility, especially for debt adverse students. We use a multidisciplinary framework to build a model of postgraduate intentions to review the Fast Forward (FF) Master Scheme at the University of Greenwich in the UK. This framework underpinned the development of an online survey for this observational study. The results suggest that the FF allowed some graduates who, without the FF intervention, would have disregarded undertaking postgraduate taught studies (PGT) to consider studying for a PGT degree. Many of these graduates are from previously under-represented communities in the sector. We found that financial concerns could deter some students, but the intervention design allowed students to consider PGT study when they had a positive undergraduate experience. Alleviating the credit constraint may not be enough to widen access at the PGT level. Better information about PGT courses, more flexible delivery of PGT, and employment support, such as mentorship and work experience, and social and personal factors considerations could help widen access to PGT studies.

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Postgraduate degree intentions; widening participation interventions; credit constraints; student motivations; access to postgraduate education

Introduction

Within countries with fee-paying systems for higher education, there is frequent tension between ensuring sufficient university funding and maintaining social mobility and fair access. While there is significant literature on the access to global higher education at the undergraduate (UG) level (Bennett, Southgate, and Shah 2015), relatively little work is on the increasing social segregation at the postgraduate (PG) level worldwide. Sucharitkul and Windsor (2021) provide a summary of the global evidence to date on PG widening participation (PG WP) initiatives which can be grouped as follows: evidence from the US with a focus on improving access for Black and Latino students (Windchief 2019; Garces 2012; Ledesma 2017, 2019); European and African evidence on the role of Distance Learning as a vehicle for improvement in social mobility to PG level (Vryonides and

CONTACT Gabriella Cagliesi m.g.cagliesi@sussex.ac.uk
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Vitsilakis 2008 (Greece), UNESCO 2020 (Italy) and Nkrumah et al. 2020 (Ghana)); evidence from Ireland on considering personal motivation in the design of a WP intervention (Keane 2017) and evidence on the value of starting with interventions at UG level from Brazil (Noroes and McCowan 2015).

In this paper, we investigate the effectiveness of an intervention, designed at the University of Greenwich UK, entitled Fast Forward (FF), in affecting the intentions to study at postgraduate taught (PGT) level. We use a three theoretical lens to develop a survey instrument to empirically explore the main determinants of access to PGT influenced by the FF. We will report insights from the developments within the UK in exploring access at the PG level through the example of the effectiveness of the FF and consider the role of the local university, in this case the University of Greenwich where 70% of the UG cohort comes from the local area, in feeding the access agenda in PG education. The Master's Loan Scheme in England was initially designed to support the WP in PG education. Scotland, Northern Ireland, and Wales subsequently launched similar PG loans schemes, but only the Welsh programme adopted means-tested criteria, making it more socially progressive (Wakeling and Mateos-Gonzalez 2021). The general increase in the average fees, often above the maximum master's loan amount, poses the risk of reducing these schemes' effectiveness in promoting social mobility, especially for those who are debt adverse.

The Master's Loan Scheme in England was developed based on growing government attention towards higher education, the 2011 White Paper titled 'Students at the Heart of the System' aimed to support students in making more informed decisions and ultimately to improve the benefits to education and employment prospects. In the past decade there has been a rapid expansion of PGT. Many PGT students are international students and over half of PGT students are international, accounting for 70% of full-time PGT students. This has made PGT programmes a critical portion of UK education exports and highlights the international recognition of the quality of the provision of UK Higher Education Institutions (HEI) to meet the growing demand for PGT skills internationally (HESA 2016).

The UK government has also seen PG skills as the key to the UK's international economic success in an increasingly competitive globalised world. To widen the participation in PGT courses to a broader group of domestic students, the government developed a PG loan scheme which was announced in the 2014 Autumn Statement. The Higher Education Funding Council for England (HEFCE) also funded several projects under the Postgraduate Support Scheme (PGSS) which aimed to support innovative development of PGT programmes and research to improve understanding of the postgraduate sector and student decisions (Wakeling 2015).

For a student considering undertaking a PGT course there is less publicly available information about PGT courses than about undergraduate courses. For undergraduate choices in the UK, students have access to the University and Colleges Admissions Service (UCAS) to help support their recruitment and selection but for PGT courses there is no UCAS equivalent. The Mellors-Bourne, Hooley, and Marriott (2014) report for HEFCE suggested that the development of a toolkit for potential PGT applicants could help to provide better information to students. They also suggested that those who were re-entering higher education and those who were continuing from their undergraduate courses made different choices about PGT options and may have different

needs regarding information on programmes. With this high degree of diversity in PGT courses and among potential students, it is desirable for research to understand better the needs of prospective PGT students. Insights from this study should help to improve the practice of Higher Education Institutions (HEIs) in terms of improved marketing to enable prospective students to make more informed choices, to improve recruitment and selection efforts and ultimately to enhance the students' experience.

This paper presents the research findings from the FF Masters Scheme at the University of Greenwich, which was funded by the HEFCE PGSS's first wave funds in December 2013 to promote wider participation in PGT programmes. The aims of the HEFCE-funded programmes were (a) to increase the number of masters students from groups that had previously been under-represented in higher education, (b) to help these students develop workplace skills and (c) to investigate constraints and enablers that affect PGT participation. This paper presents the statistical results from a pre-programme survey sent to all students in the second term of their third year of undergraduate study to explore the constraints and enablers for undertaking PGT study and taking up the offer of the FF Scheme.

The FF Scheme was launched in January 2014 with the first students registered in September 2014. The FF Scheme attempted to widen participation in PGT courses through a design that combined a 60% fee waiver with a £500 bursary for stationery, books and computers, combined with a partnership with local employers to provide all FF Scheme students with access to a mentor. The acceptance to the programme depended on the students having a good undergraduate degree (First or Upper Second) and was means-tested to ensure the most disadvantaged students were offered a place on the programme. The means-tested criteria were in line with the requirements for the household to receive state benefits and tax credits. The FF Scheme enabled entry to many different master programmes offered by the University of Greenwich, with students able to take master's degrees in a range of subjects including STEM subjects, Business, Education and Health and Humanities. All recipients of the FF were Greenwich alumni.

Theoretical foundations for observational study

To collect the survey data for our observational study and create variables for the empirical analysis, we developed a model that combines three theoretical approaches to explore intentions and choices, complementing each other. Firstly, we considered the theoretical viewpoints of the Rational Choice Theory (RCT), upon which the mainstream conventional rational economic theory predicts the behaviour of individuals driven by self-interest and unmoved by emotions and cultural external factors. Secondly, we added the insights of Behavioural Theory to recognise the influence of cognitive, emotional, and cultural factors in affecting people's intentions and choices, adding dimensions unaccounted for by the RCT. Thirdly, we included perspectives from management and cultural studies. By combining these theoretical viewpoints, we developed a questionnaire that allowed us to empirically test the effects of several factors, ranging from economic and financial constraints and incentives to personal, social, and cultural influencers, that motivate or discourage postgraduate intentions and educational transitions in higher education.

Rational choice theory

Fundamentally, rational choice pertains to the individual's objective to choose the best option out of a set of alternatives in a particular event. The concept of rationality has been explained to suit various perceptions of individual decision-making processes. The conventional economic viewpoint asserts that individuals invest in postgraduate taught degrees based on the notion that they would be better equipped to apply for job roles requiring skills which they gain through PGT study. These newfound skills are signalled by being awarded a PGT certificate and consequently, in conventional economics, rewarded with higher wages. In other words, they rationally deduce that their return to education exceeds the private cost of their education. These returns are based on the human capital differentials the individual gains from investing in an extra year of schooling, such as wage differentials and compensating differentials (Denison 1962; Kuznets 1966; Schultz 1961).

These differentials are explained in human capital theory which examines the mechanisms under which human capital is acquired, utilised and acknowledged (Schultz 1961; Becker 1964). In this sense, human capital encapsulates the services a worker can provide as a result of skills innately attributed to the worker's self or acquired through education and training (Pscacharopoulos 1996). Fundamental to this theory is the individual's ability to improve on her human capital through engaging in training to yield better returns. The benefit of such investments to improve human capital can only be confirmed through its effect in the individual's lifetime earnings (Mincer 1975).

Empirical papers taking a conventional economics rational choices theory as their framework find largely positive returns to PGT study and evidence of borrowing constraint for those not selecting to undertake PGT study (for PGT; Bowman 2005; Flug, Spilimbergo, and Wachtenheim 1998; for PGT returns Cameron and Heckman 2001; Carneiro and Heckman 2002; Blundell et al. 2000; Lenton 2016). Of course, whilst human capital development is one aspect of a personal investment in education, there are other reasons for an investment in education, including personal gratification and social status.

The RCT is a theoretical framework used in economics and sociology to interpret any social phenomenon as the culmination of rational, individual actions. The Sociological Rational Choice (SRC) theory applies RCT to social concepts and, similarly to rational economic theories, it removes factors – such as cognitive bias and emotions – as the cause of human behaviour. The SRC theory, applied to decision-making in education, defines students as rational individuals who aim to maximise their returns from education subject to the individual's economic and social goals (Jaeger 2007). Thus, unlike the economic RCT, the SRC recognises explicitly both the individual's economic circumstances and the social context in which she exists (Hechter 1994). Such social contexts allow for factors such as peer effects and family status to influence rational decision-making. In other words, sociological factors are not entirely exogenous of rational decision-making but are directly contributory to an individual's decision-making processes.

Empirical studies using the SRC theory as their framework find significant social returns to education and the importance of preserving existing peer groups and social networks in the decision to undertake PGT courses (Reay, David, and Ball 2005). Those looking more deeply at identity and social psychology find that self-image (identity) and social identity (acknowledging identity with others) are salient in educational choices and effort via

personal motivations (Akerlof and Kranton 2000, 2002; Tobbell, O'Donnell, and Zammit 2010; Tobbell and O'Donnell 2013). Glaesser and Cooper (2014) combine rational action theory with Bourdieu's habitus theory to explore the PGT choices in England and Germany.

The economic rational choice paradigm and the SCT stress the role of socio-economic factors in motivating students to undertake a PGT course. However, these theories do not account for emotions, cognitive biases, and cultural factors affecting educational choice. Therefore, we need to consider other theoretical frameworks to include these aspects in our model.

Behavioural insights

Unlike the RCT, the behavioural alternatives presented here establish limitations to individual decision-making processes. These alternatives introduce the roles of cognitive biases and procedural constraints in the individual's perception of her intentions and the resulting decisions made. The concepts presented here are solutions to the common critique of RCT in two ways. The first solution presents theories that define human individual decision-making as a process limited by a disproportionate distribution of risk behaviour over gains and losses, as well as based on the amount of information she possesses to make an informed decision. The second theory adds to the critique of RCT by exploring the way the individual makes decisions through time and the cognitive behaviour that exposes a myopic view in favour of gains in the present as opposed to future gains. These models are discussed below with particular reference to education decision-making as students transition to PGT degrees.

Firstly, we consider Bounded Rationality (BC) and Prospect Theory (PT). A major critique of the RCT is derived from the limitations its assumptions place on the way individuals process information. As with the case of perfect markets exhibiting perfect competition, the individual is assumed to possess perfect information on the intricacies involved in the market process. However, the educational system has proven to be a market similar to many others in that it is imperfect, and thus displays asymmetrical information. Herbert Simon observed such defects in the expected utility theory when he proposed the idea of a bounded rational behaviour in individual decision-making. In his analogy, the process of decision-making the individual is involved in is limited by three major barriers: cognitive biases in information processing, the time constraint involved in assessing choices and the available information in place to make such decision.

The relevance of information has been emphasised in the literature on education decision-making. In their assessment on the effect of student loans on student decision-making, Christie and Munro (2003) find that a poor amount of information implies that students are poor decision-makers regarding the cost and benefits of studying in higher education. Contrary to the RCT norm, the decision to proceed into higher education is based on familial and social circumstances, as well as a huge reliance on heuristics. Such poor decision-making also affects career decision-making as Greenbank (2009) find**s**. Following interviews with 30 undergraduate students on their career prospect upon concluding their current study, he finds that students conform to apply satisficing as a measure to make such choices. He further emphasises that social capital based on social class systems is a crucial factor that affects the amount of information an individual possesses to make decisions. In

our study we extend the social class measure of social capital to consider the influence of family and friends in applying for postgraduate programmes.

In a more deeply probing critique of the RCT, prospect theory postulates that individual decisions to deviate from a set of alternatives are not random, but systematic instead (Kahneman 2012; Ariely 2008). When transitioning to PGT education, in a way similar to when they make decisions about other aspects of their lives, individuals are assumed to have a probabilistic tendency of ignoring perfect opportunity costs to honour sunk costs. They also disproportionately overweigh losses whilst discounting gains as they undergo their decision-making process. Such systematic deviations are caused by heuristics and biases individuals employ to help make decisions as they assess various options available to them (Diamond et al. 2012). In our model, we build on these aspects from behavioural economics to explore in more detail the effect of the fear of debt which is more predictive than actual debt in PGT decisions for continuing students.

Alternative perspectives

Besides the major arguments from economics, sociology and psychology on individual behaviour in decision-making processes, the literature discussed in this section explores the perspective from management and cultural perspectives. Fundamental to this literature are the definitions they impose on decision-making processes which affect the way individual behaviour is perceived.[1]

Firstly, we consider Analytic Hierarchy Process (AHP) as developed by Thomas Saaty. The AHP is a technique founded on management and psychology theories used to elucidate multi-criteria decision-making events involving objective and subjective conditions (Saaty 1977). With the assumption of the individual as a rational decision-maker, this model allows the individual to explore decision-making in a procedural manner, making a decision based on pairwise comparisons of options available (Labib and Ishizaka 2011). Our modelling strategy ranks students' intentions hierarchically, assuming that their decision-making processes are based on different levels. These levels range from the general intention to undertake PGT programme to the detailed time scale of expected engagement (continuer or returner) and whether to explore different funding options.

Secondly, Cultural and Social Reproduction (CSR) offers another crucial critique of RCT in ascertaining the process of educational attainment; specifically, it critiques the assumption that social class inequalities are strictly because of economic constraints. This is due to its lack of emphasis on class differentials exhibited within the educational framework, and its choice to only focus on the transitional phases through education as its means to assess educational attainment. Such lack of emphasis is depicted in the human capital theory that the quality and volume of productivity in the workplace is a result of higher levels of educational attainment and thus the justification for higher pay is accorded. CSR framework is used in the work on PGT choices (Watts and Bridges 2006). We explain the traditional econometric approach to include information on the students' parental background to account for CSR.

Considering these alternative theories which can be used to consider an individual's choice to undertake a PGT course, we develop a theoretical framework and a questionnaire that combines factors from each of the three theories. This framework is shown in Figure 1. Drawing together these theories to be tested together represents a significant

contribution of this empirical paper. Using these competing frameworks together we can provide a more detailed view of individuals' intentions to apply for and undertake PGT courses.

By combining factors from different theories and testing them empirically, we hope to provide a richer explanation of students' views and intentions in PGT courses. Thus, we expect that the factors included in our model, following the RCT theory, are positively related to the intention to PGT. These factors are higher expected wages upon completion of a Master, limited borrowing constraints, being from a family and peer group familiar with higher education, and institutional habitus. Likewise, drawing from the behavioural theories, we expect that the following factors – included in our model – would be positively associated with the intention to PGT: having information about possible PGT courses and future careers and not fearing the loss of an existing job. Finally, considering the alternative perspectives, we expect that intentions are formed at many levels and that the student's parental background influences these intentions.

Data and methods

The context of the launch of the FF Scheme is important to the research design adopted in this paper. The FF Scheme was one of several the projects funded under the HEFCE Postgraduate Support Scheme (PSS) (Wakeling 2015). The timing of the receipt and expected use of the funds made an experimental design to evaluate the FF Scheme impossible. The research team therefore selected an observational study to attempt to provide an assessment of the effect of the FF Scheme on access to higher education for students from diverse backgrounds. The approach taken was to contact all final year undergraduate students at the university and the graduate alumni with an online

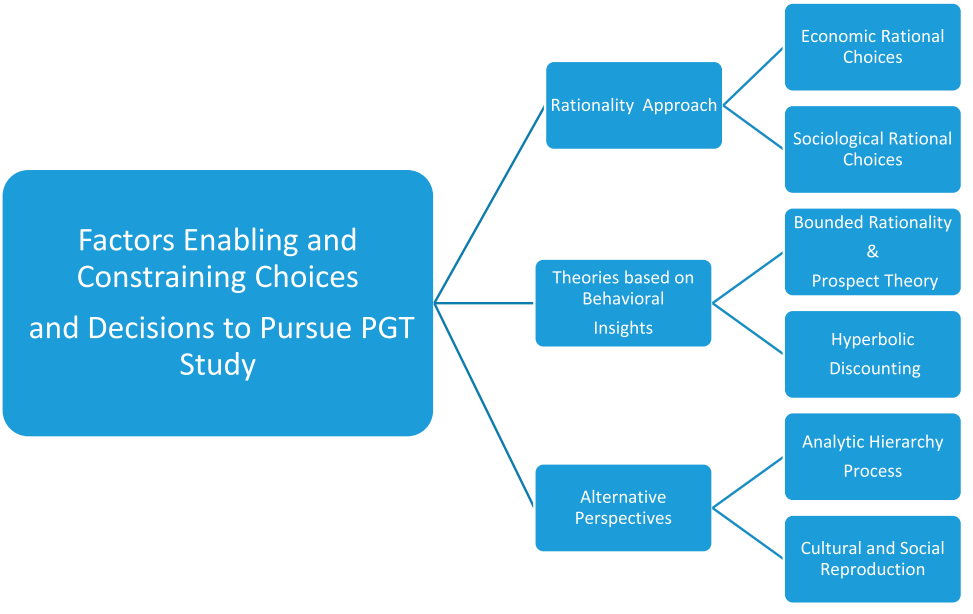

Figure 1. Theoretical framework.

survey. This was designed to collect information on PGT intentions of our final year students and alumni as well as to act as an advertisement for the FF Scheme. The data from the alumni survey is reported elsewhere. Unlike some other universities who received funds through the PSS, we did not give the funds to those who had already applied and who met our access and diversity measures. Instead, we used the survey and other university announcements to prompt potential PG students to apply. If they had applied for the PG course stating they wanted to be considered for the FF scheme and meet the criteria set, both academic and means-testing criteria, they received the funds. There were sufficient funds to ensure that all applicants who met the criteria were successful in obtaining FF scheme funds. The results therefore consider the intentions of the students to apply for PG study and the FF scheme.

In summary, the online survey was developed to measure the student's intentions to PG study, then to introduce the FF and ask specific questions to explore if the FF design had influenced the intention to study and which of the theoretical models was most appropriate in explaining the change or not in intentions. The full survey is available from the authors by request. The questionnaire was developed in three main sections. Firstly, it included socio-economic and context information about the student, including their ethnicity, if they were a commuter student, if they were the first in their family to come to university and their current programme of study at the University of Greenwich. Secondly, we asked about their plans after university, whether these included PG study or focused on seeking a graduate job. To link the theoretical framework underpinning the study, we included in the questionnaire questions that attempted to exploring further the intentions to PG study in terms of the respondents' reasons to consider or not further study. These included a question on why PG study was considered or not considered, and responses included increase in future earnings, interest in the subject area and the need to obtain a professional qualification for the career path chosen. Thirdly, we outlined the FF, and we asked the students if they had already applied or how likely it would be for them to apply to the scheme; if the FF opportunity had made them change their intentions about PGT studies, and if so, what aspects of the design had most influenced their changing mind. Finally, we interpreted and linked these responses to the theories outlined above.

Prior to the launch of the programme, all third-year students at the university were contacted by email at the end of the 2013/2014 academic session. Students were asked to complete an online survey which contained questions about demographic information, social and financial background, academic experience, intentions and ambitions after graduation, intention about further study, motives and factors affecting decision to study a PGT degree and their perceptions of the FF Scheme. The questions were selected to address various aspects of the theoretical framework presented in Figure 1. The questions were drawn from various questionnaires used in other large-scale studies including HESA's, DLHE survey and the Understanding Society Panel Survey. This questionnaire was approved by the University Ethics Committee.

The online questionnaires generated responses from 484 third-year undergraduates, of which 367 had complete responses for inclusion in the final analysis. Comparison with university level data confirmed the spread of the sample across the university was similar to that of the whole population. This represented an overall response rate of 11.4%. The sample had significantly more female than the population (65.8% compared

to 53.8%) but was not significantly different in terms of the proportion of black and minority ethnic students (BME) (47.7% compared to 46.2%). These were the only two observable characteristics that could be compared with publicly available data produced by the university. Appendix 1 reports some descriptive statistics of the respondents. The web link for Appendices 1–6 can be found in the reference list, Cagliesi and Hawkes (2023).

The data from the questionnaire were used to form categories of dependent and controlling variables to estimate a series of stereotype logistic regressions. The Stereotype Logistic (SL) model, first developed by Anderson (1984), and later introduced by Greenland (1994) and Long and Freese (2006), was chosen for its desirable features of being an extension of both the Multinominal Logit (ML) model and the Ordered Logit (OL) model used when the outcome variable is a response variable with more than two categories.

The first stereotype logistic regression attempted to understand the key factors determining the students' present intentions and current or future plans about postgraduate studies. This variable was coded on a scale from one to five where a lower scale indicated a stronger intention and degree of commitment to pursue PGT. The precise definition of this dependent variable, and all others used in the model, can be found in Appendix 1. The second stereotype logistic regression looked for the factors which determine the students' present intentions and plans about applying to the FF Scheme. This was again recorded on a scale from one to five with a lower score indicating stronger intentions and degree of commitment to apply to the FF Scheme. The precise definition of these dependent variables, and all others used in the model, can be found in Appendix 2. The complete output of these two regressions can be found in Appendices 3–6. The discussion below will highlight the key findings from these full models.

Results

The virtue of the questionnaire being taken after Easter, but before the students finished their final year of undergraduate study, was that it acted as a form of advertising – for those not aware of it – or a 'nudge' for the FF scheme. Before asking about the students' intentions to undertake the FF scheme students were asked about their intentions to study a PGT course. At the end of the questionnaire, the students were told about the FF scheme and then asked whether they would be applying for it or if they had already applied. Clearly at the time of completing the survey the final year students could not be sure they would attain the required grades (a good 2:1 or 1st class degree) to be eligible for the FF scheme. We did not ask the students to report their expected grades but did ask them a series of value questions about their intentions to PG study including if they felt capable of undertaking this level of qualification.

We used the responses from the survey to group the students into three groups based on their responses to questions in the survey. In the survey, we asked students firstly about their general intentions to PG study and then introduced the FF and asked if this had changed their views about PG study. The Activated are those who indicated in their answers that they would not have considered or applied for a PG had not been for the FF scheme, a question we asked directly. The Poached are those who had intentions to undertake PG studies at a different university, but the FF made them consider

staying at Greenwich. The Nudged are those who had considered PG but as a future possibility and they had made no action yet to go for a PG degree now, but the FF made them consider the possibility of doing it now at Greenwich.

Key results from the questionnaire: the near and the far (poached and nudged students)

Table 1 shows a summary of the respondents' current and future plans about postgraduate study. A high percentage of respondents (26%) indicated a firm intention to pursue postgraduate study, either immediately or within six months from graduation, and another 27% indicated that they would consider postgraduate study. At a first reading, these figures on self-reported future postgraduate plans seem to be quite encouraging in terms of time 'readiness' to widen the participation in postgraduate programmes, particularly if we consider that the survey was taken before the government's announcement of the £10k loans for PGT courses. On the other hand, it is worth remembering that this cohort of respondents was the last under the old fees' regime for undergraduate study (£3k annually), and it is quite possible that the much higher fee burden of subsequent cohorts may affect students' plans to transition into PGT study. This will be studied in another paper.

The table shows that 447 students replied to the first questions about PGT plans (prior to any mention of the FF scheme). Almost 54% of these students indicated they intended or considered pursuing PGT studies. We termed these respondents 'near' (or less distant than others) to a PGT journey. The number of those with firm intentions is particularly high (26%).

The percentage of firm intentions is still high (23%) when we consider the responses to the PGT question that mentioned the FF scheme (369 respondents). For this question, we can identify and separate those students whose intentions into the PGT had been prompted or activated by the FF scheme (9.3%). This group shows a potential effect of the FF scheme (i.e. its activation rate) in encouraging applications into postgraduate studies, which would not have been otherwise prompted had the FF scheme not been offered.

While a formal test of the activation rate of intentions to PG studies is not possible, these descriptive statistics suggest that the FF scheme may have been fruitful in

Table 1. Intentions of pursuing G study.

Categories	Total	Percentage
INTEND: respondent who intend pursuing PG study either immediately or within six months from graduation (near).	119	26.6%
CONSIDER: respondents who consider pursuing PG study either immediately or in the future (near).	122	27.3%
LIKELY: respondents who intend or consider pursue PG study but not immediately and they think it is likely to pursue PG study in the future (less near).	17	3.8%
UNLIKELY: respondents who considered pursuing PG study but they thought it was unlikely that they would do it in the future (distant).	87	19.5%
VERY UNLIKELY: respondents who are unsure or do not intend pursuing PG study now and think it would be unlikely that they would do it in the future (distant).	102	22.8%
Total	447	100%
INTEND and would definitely have pursued PG study – at Greenwich or elsewhere – even if FF had not been offered (relevant sample N = 369)	47	12.7%
INTEND and would definitely NOT have pursued PG study – at Greenwich or elsewhere – if FF had not been offered (relevant sample N = 369)	34	9.3%

improving intentions to PG studies. Whether this was translated into actual enrolments is to be considered in further research.

An implicit assumption of the HEFCE PSS funds was that more PGT studies from students from diverse backgrounds would benefit society by increasing social mobility (Wakeling and Mateos-Gonzalez 2021). While we cannot show whether more PGT qualifications improve social mobility, we can provide evidence of whether the FF scheme widened participation in intentions to PGT study. We are not able to say whether the students would have been better off at another HEI. The existence of the FF scheme did at least increase the opportunity and capacity set for those students who were already interested in PG study. On the other hand, for those who did not have a prior intention to PG study, the FF scheme provided an additional opportunity to their set of postgraduate options. If more options are good, then the FF Scheme offered more opportunities to both categories of students and therefore was beneficial for these individuals.

Tables 2 and 3 provide more details about the full effects of the FF scheme. Here the reference sample will be restricted to only those respondents with complete information on the questionnaire (thus, the number of responses is 367 instead of 369).

We combined information across intentions about postgraduate study and intentions about the FF scheme to identify those respondents who had reacted positively to the FF scheme either because they had already applied to the FF or because they reported that it was likely that they would apply. The percentage of these 'reactive' respondents is named 'reactivity rate', and it represents the potential success rate of the FF scheme. To better understand the FF scheme's effect, we separated the FF 'reactive' respondents into two groups. Those who answered that they would NOT have applied or considered applying to a master's programme – at the University of Greenwich or elsewhere-had the FF not been offered, and those who answered that they would have. The former group of students (55 in total) is of interest because it reveals the possible effectiveness of the FF scheme as an 'activator' in prompting actions/intentions that, in its absence, students would not have considered.

We focused more on the 'activated' students, and we matched their intentions to apply (or consider applying) at the University of Greenwich because of the offer of the FF scheme with their original views about pursuing a PGT degree (before the FF scheme was mentioned). We identified two groups. One group (i.e. the 'near and poached') included those respondents who, independently of the FF scheme, had prior intentions (or desire) to continue into PGT studies. Although they were 'near' (in terms of intentions) to pursuing a PGT degree, they would not have applied or considered applying at Greenwich had the FF not been offered. Instead, the FF played the role of poaching them.

The other group (i.e. the 'distance and nudged') included those who had no prior intentions or considered it very unlikely to pursue PGT but would apply because of the FF scheme. These respondents were 'distant' (in terms of PGT intentions), and the FF acted as a 'nudge', pulling them into considering a master's degree. The FF scheme offered a chance to reconsider their original plan of not having intentions of pursuing a PGT study.

Table 2 summarises the success rate of the FF scheme (37% of sample of respondent who completed the questionnaire) and the rates of the poached (69%) and of the nudged (31%) students among the activated students.

Table 2. FF potential success rate: respondents who applied or it was likely they would apply to the FF, and who completed the questionnaire (N = 367) (row percentage).

	FF reactivity rate (success rate)	FF un-reactivity rate	Total
Reaction to FF	137 (37%)	230 (63%)	367(100%)
	FF success rate: activated respondents	FF success rate: non-activated respondents	Total
Effectiveness of FF as activator	55 (40%)	82 (60%)	137(100%)
Effectiveness of FF in relation to respondents' original intentions about PG study			
intend pursuing PG study (near)	24 (42%)	33 (58%)	57 (100%)
consider pursuing PG study (near)	14 (30%)	33 (70%)	47 (100%)
likely to pursue PG study (less near)	3 (50%)	3 (50%)	6 (100%)
unlikely to pursue PG study (distant)	9 (43%)	12 (57%)	21 (100%)
Very unlikely to pursue PG (distant)	5 (83%)	1 (17%)	6 (100%)
Effectiveness of the FF as activator in poaching/nudging			
Near and activated (poached) by FF	38	69% = 38/55	2:1 ratio
Less near/distant and activated (nudged) by FF	17	31% = 17/55	

Activated category: those respondents who would NOT have applied/considered to apply to a Master programme – at the University of Greenwich or elsewhere – if FF had not been offered. Non-activated category: those respondents who would have applied/considered to apply to a master programme – at the University of Greenwich or elsewhere – even if FF had not been offered.

Table 3. Summary.

	Composition of Activation ($N = 55$)	FF activation as percentage of: FF success ($N = 137$)	Sample respondents ($N = 367$)	Population (survey participants) ($N = 484$)
Poached (Near = 38)	69%	28%	10%	7.9%
Nudged (Distant = 17)	**31%**	12%	**5%**	**3.6%**
Activation rates	**100%**	40%	**15%**	**11.5%**

Activation effects of the FF: respondents who applied or were likely to apply to the FF, either confirming or reconsidering original intention about PG study, and who would not have applied to a Master programme had the FF not been offered.

Table 2 indicates that, as expected, a bigger proportion of the activated students (those who reported that they would apply to the FF scheme but would not have done so had it not been offered) belongs to the category of the 'poached' than to the category of the 'nudged', with a ratio of 2:1. However, by looking within each category of intentions, it is interesting to notice that as a percentage of each category, the distant students have been activated more than the near ones (with rates of 83%, 43%, 50% of the distant, and of 42% and 30% of the near). So, the FF scheme seems to be effective in making students reconsider their original intentions.

These results are summarised also in Table 3 which shows different percentages measuring the effectiveness of the FF scheme in widening access in PGT courses. The students were asked explicitly if they would have applied for PGT course had the FF not existed. If we take the entire population who participated in the survey (including those who did not finish it) as representative of the entire population of third-year students, the FF scheme has been effective in two ways: firstly, 7.9% of all participants have been poached by enabling those who already had intentions, but who were constrained, to apply to the FF scheme, and secondly, 3.6% of all participants have been pulled or nudged by prompting those students who had no intentions to reconsider their intentions to postgraduate study and apply to the FF scheme.

These results suggest the potential value of institutions advertising their PGT programmes, offering some financial alleviation to their undergraduates and providing them with information to make an informed choice in their intentions to PGT.

Key results from the estimates: enabling or constraining factors into postgraduate study

Figure 2 reports the results of the first stereotype logit model. This model was used to explore the key enablers or motivators and the constraints that affect intention and the decision to pursue postgraduate study. In Figure 2, constraints/preventers discourage pursuing PGT studies; enablers are factors that remove or reduce a constraint/preventer, while motivators act as driving forces in making a student want to pursue PGT degrees. In this first model, the variable 'motivators' is derived from Polychoric Principal Component Analysis (PPCA) of 4 types of motivators: intrinsic value/knowledge; identity; career type; utility value/opportunity. Table A1.c explains in detail all the variables.

As explained previously, these factors were not associated to the specific FF scheme offered by the University of Greenwich, which was brought to the respondents' attention in the second part of the online questionnaire after all the questions on postgraduate study had been asked.

The original estimates and their *p*-values are reported in the appendix. Here we present the results.

These values have been obtained by choosing the group of those intending to pursue postgraduate study as the reference category, and then re-computing the odds of this category relative to all other categories by shifting all the odds adding (−1) to keep the same spread while making the interpretation easier. In this way, a value of zero means that the odds of falling into the reference category are the same for those intending to pursue postgraduate study as for the comparing category. A positive value associated to a specific factor indicates that this factor enables the ensuing postgraduate study (i.e. it increases the chance of intending to study at the postgraduate level relative to all other categories). On the other hand, a negative value associated to a specific factor indicates that this factor acts as a constraint because it reduces the chance of a student intending to study at postgraduate level, relative to other categories. To help the comparison, these shifted odds ratios have been ranked in decreasing order, so the variables at the top are stronger enablers and we can find the stronger constraints below.

Each coloured segment represents the shifted odd ratio of the relevant category. As expected, the longest segments in the figure are those that refer to the respondents who are very unlikely to transition into postgraduate study. Indeed, the gap between those intending and those not intending to pursue postgraduate study is larger than for any other category. Hence the segments become progressively shorter as we move into categories that are closer to the reference group (those intending to go for postgraduate study).

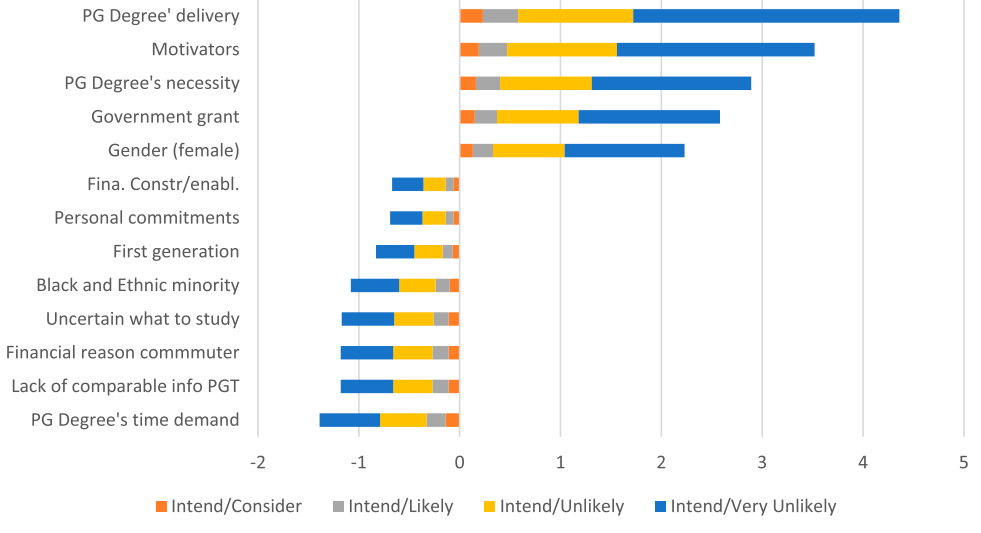

Figure 2. Enablers/motivators (+) and Constraints (−1) of intending to pursue PGT studies relative to all other categories (shifted odds ratios).

The key enablers, ranked from the most to the least important, are characteristics of the programme of study, in particular, its flexibility in the delivery; motivations (related to career and professional reasons, personal ambitions, financial prospects and academic interests); if the degree were a pre-requisite for future employment; if a student had received government grant for their undergraduate degree (i.e. if a student has less debt to repay or no debt at all) and being female. This last factor is in line with the HEFCE 2016 data: females represent a larger percentage of the overall number of one-year qualifiers transitioning into postgraduate study, although male students – when considering percentages within each gender category – have a consistently higher rate of transition to postgraduate study than female students.

The key constraints reduce the odds of widening access into postgraduate study. In discussing the results of the key constraints, the first thing to notice is that the values associated to key constraints are smaller in absolute magnitude than the values associated to the enablers, meaning that constraints are more 'commonly shared' across categories than incentives. Being to some extent more evenly 'felt' across categories, constraints create less disparities in odds than incentives do. In other words, students showing stronger intentions to pursue postgraduate studies have higher sensitivity to incentives than the rest of the categories but have similar (or not so dissimilar) sensitivity to constraints as the rest. This asymmetry is in line with behavioural economic tenets that postulate and explain people's intentions in relation to their different reference points. The asymmetry highlights students' concerns about gains and losses, rather than levels as well as their degree of loss aversion and to their biases that may lead to excessive optimism or fears.

The constraints are ranked from the most 'common' to the least similar across categories and include financial constraints; personal commitments (family and job commitments); being a first-generation student (particularly if both parents did not go to university); being from an ethnic minority; being uncertain about what to study; a lack of information on postgraduate courses (within the same institution); being a commuter; living at home to save money (as a proxy of social-economic condition) and finally, the time demand and the workload of postgraduate study. Looking more closely at the results, the financial factors are a common strict constraint, and the odds of intending to pursue postgraduate study versus all the other categories are not that dissimilar, meaning that these financial factors do not distinguish' and separate the various categories.

To reduce the strong collinearity across regressors, this financial variable has been created as a combination using the Polychoric Principal Component Analysis (PPCA) of two financial constraint indicators (i.e. the variable 'if more financial support were available' and the variable 'fear of debt'). The presence of these constraints increases the odds of not considering pursuing postgraduate study. In particular, the factor 'fear of debt' has a higher positive scoring coefficient and a stronger effect than 'more financial support' in discouraging intentions to postgraduate study. However, when we look at improving upon those factors, it is the absence of concerns about 'more financial support', rather than the absence of fears about debt, that plays a stronger role in encouraging students into a PGT course. Hence government interventions with financial incentives that ameliorate financial constraints can be successful in widening

intentions in postgraduate study, particularly if they are devised to also reduce fears of debt.

Our 'fear of debt' finding is the converse to debt finding of Wakeling, Hampden-Thompson, and Hancock (2017) on enrolments to PG study. This could be due to our focus on intentions rather than enrolments, although early results from our enrolment data find a similar 'fear of debt' effect. Alternatively, these different findings could be due to the differences in the socio-economic make-up of the undergraduate populations in the two studies. Our undergraduate students are significantly more likely to have diverse backgrounds than the institutions studied in Wakeling, Hampden-Thompson, and Hancock (2017). Dearden, Fitzsimons, and Wyness (2014) find a small effect on participation at undergraduate level and this is like the PG findings of Wakeling, Hampden-Thompson, and Hancock (2017). Callender and Mason (2017) find that students from more disadvantaged backgrounds at undergraduate study are more likely to fear debt and be risk averse, it is possible this pattern on intentions is similar for PGT. With more undergraduates from diverse backgrounds within our population of study, fear of debt is likely to be stronger and therefore more likely to dampen intentions to PG study.

Being the first generation to go into higher education is also another constraint but for those whose parents have both higher education degrees, the odds of intending to pursue a master's degrees are higher than all other categories. This is expected and theories and empirical evidence have shown that familial, social, and cultural milieus directly and indirectly affect expectations and views about educational intentions.

The above factors draw on RCT, behavioural insights and the alternative prospects. This combination of identified factors confirms the usefulness of the theoretical framework that pulls together factor from various social science theories. From RCT, results presented find evidence to suggest that higher expected wages from masters' study are positively associated with intentions to PG study. Financial considerations are an important factor in intentions, as expressed by the fear of debt. Family experience of higher education, as expressed by first-generation effects, which is linked to the alternative theories are also important, as are behavioural factors, in explaining intentions to PG study.

Key results from the estimates: enabling versus constraining factors into the FF scheme

We present now the factors affecting the intention to stay at the same institution as undergraduate studies were completed to undertake PGT offered under the FF scheme. To make the comparison easier, we rearranged the results of the estimates – as reported in the appendix – by again shifting the odds ratios so that zero means to have the same odds as the reference category, positive values indicate higher odds of being in the reference category than in the alternative categories and negative values indicate smaller odds of being in the reference category relative to the rest. In Figures 3 and 4, the reference category is those students who have or want to apply to the FF scheme. Once again, the effects of the enablers are in magnitude bigger than the effects of the constraints, meaning the distance across categories is larger when it comes to motivations than to limitations, pointing out that limitations are shared more across categories than motivations.

Figure 3 reports the enablers and constraints of the 'decided' students (those wanting to apply to the FF scheme) relative to the 'possible', nudgeable ones (those who either were not sure or who might have only been considering applying). The strongest enabler or motivator to apply for the FF scheme is academic satisfaction with the undergraduate institution; students who have enjoyed their experience within the institution are more likely to apply to stay on for PGT programmes. The main constraints remain around the widening intentions characteristics (such as better information and eligibility) and financial constraints. The removal of some of these constraints and the widening of the enablers may help the undecided and the 'positive' who are hesitant to consider PGT programmes.

Figure 4 reports the shifted odds of the decided ones relative to those who were not considering applying to the FF programme. For these more distant students, coming from a diverse background and a lack of information are clear constraints. However, by far the strongest constraint is simply not wanting to undertake further study. It will be more difficult to attract these students in the widening participation agenda of the government for PGT as they are less inclined to consider PG study.

In Figure 5, we report the odds of the decided and likely students versus the undecided ones to understand better the 'tipping factors' that would place the undecided students into the other two categories. The results confirm yet again that academic habitus, meaning a positive experience during the undergraduate degree, is a big factor in encouraging an application to the FF scheme, as well as fee reduction and other financial aspect of the FF scheme. In general, the undecided students are less motivated, less informed, and more likely to belong to black or ethnic minority groups than the other two categories.

It is interesting to note that the factor 'if more financial support were available' has an opposite effect: it is a tipping factor between those likely and undecided, but it is not a tipping factor for the 'decided'. Those who are really motivated to intend to go for a PGT programme place less importance on 'if more financial support were available' than those who are only likely or who are undecided.

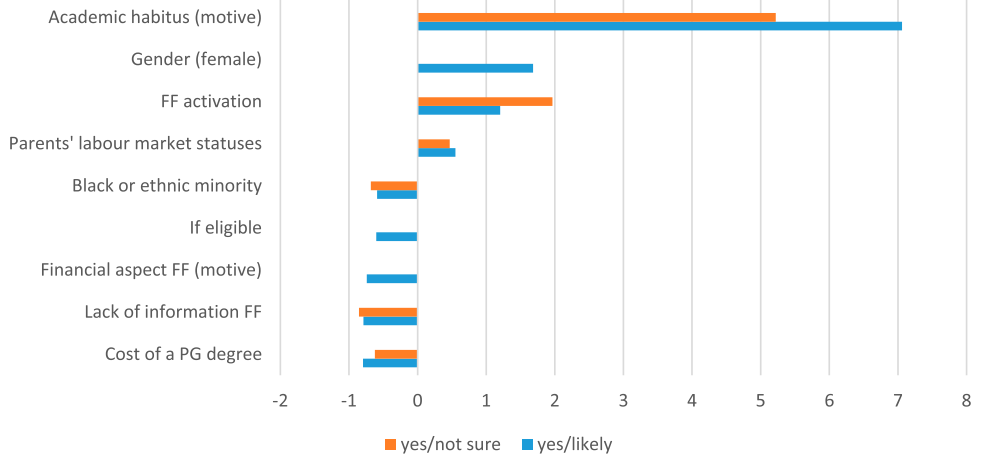

Figure 3. Enablers/motivators (+) and constraints/preventers (–) of transiting from UG into PG at the same institution: the 'Possible' nudgeable case (shifted odds ratios).

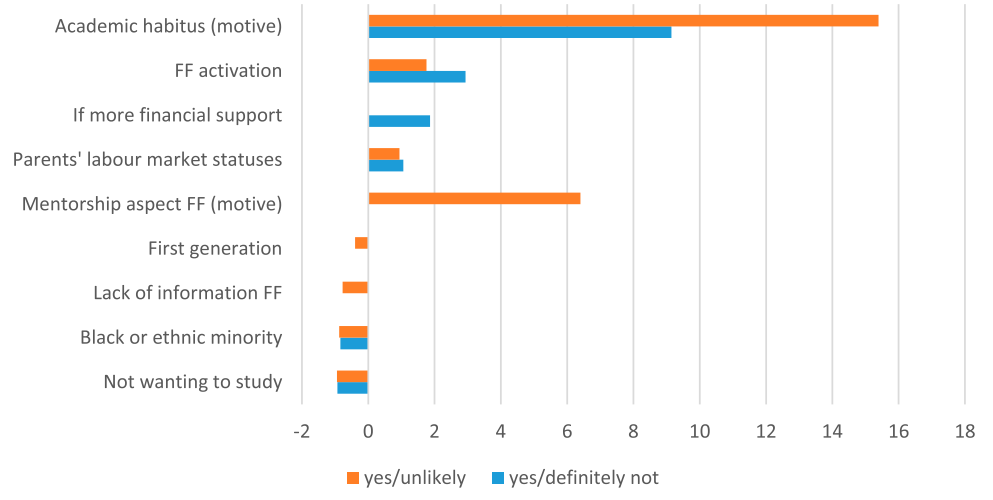

Figure 4. Enablers /motivators (+) and constraints/preventers (–) of transiting from UG into PG at the same institutions: the 'Distant' graduate case (shifted odds ratios).

Overall, the results presented for the FF intention suggest the importance of a positive student experience at the undergraduate if the student is to be motivated to stay in the same institution. In all models the diversity factors are associated with constraints, suggesting that the 60% fee reduction was not enough to alleviate the credit constraint for the most disadvantaged undergraduates to revise their intentions to PG study. However, for the less credit constrained the financial package of the FF scheme, together with the option for mentoring, proved to be a PGT package worth considering further.

Aspects of RCT, behavioural insights and alternative perspectives are all represented in the presented model. This suggests that there is scope in this area to bring together different theoretical views to develop a more rounded model of the PGT decision-

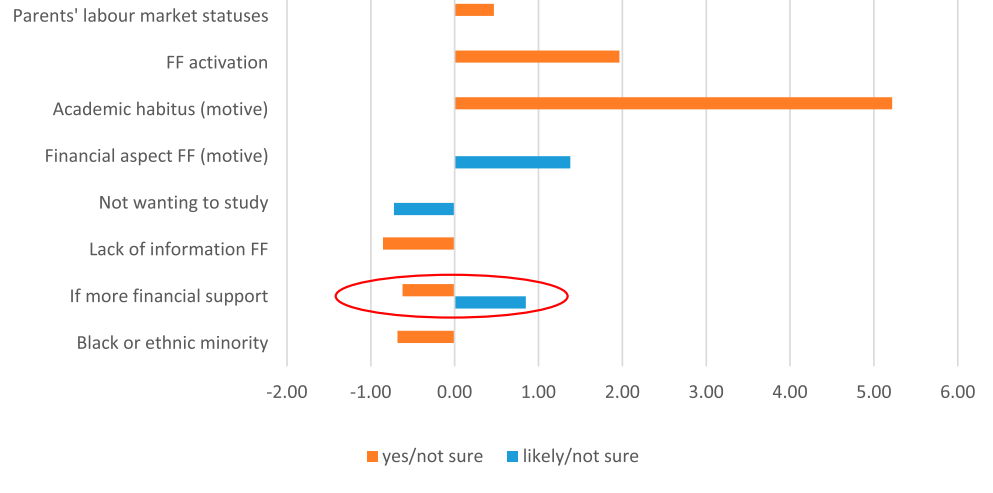

Figure 5. Enablers/motivators (+) and constraints/preventers (–). Change in the odds of pursuing a PG degree at the same institution (Greenwich) relative to being undecided.

making process. In deciding to consider the FF, the factors found fit well to RCT especially around financial constraints and institutional satisfaction with the undergraduate institution. There is also some evidence that the provision of information acts as a behavioural nudge for those who had other characteristics that where favourable for having intentions to further study. Of the 372 third-year students who provided complete responses to our questionnaire, 14.8% indicated that they had either applied, or it would be likely that they would apply to PG because FF made them consider a master (so had FF not existed, they would not have considered PG study at this time). For the 325 Alumni who responded the corresponding figure was 16.4%. In the end, the willingness to undertake PG study is an important determinant that even the FF scheme could not overcome for those with no intention to PG study.

Discussion

The results presented in this paper suggest that the FF scheme was successful in encouraging a group of under-represented students in the HE sectors to consider PGT study. Whilst for some the financial constraint was still a binding constraint, for those who had had a positive experience of the undergraduate programme and the design of the FF scheme went a long way to alleviate the common concerns found in the literature and helped to promote intentions to PG study. In short, the FF scheme was successful in meeting the aims of the HEFCE project in terms of encouraging a wider group of students to consider PG study. This was achieved through the design of the FF scheme which was effective at nudging undecided students to consider PGT study.

The importance of a positive UG student experience as a motivating factor to consider PGT studies was enhanced when students considered staying within the same institution for their higher degree. Given the local university aspects of the University of Greenwich, which has strong links at undergraduate level in recruiting students, this highlights the role of institutional satisfaction with the undergraduate institution as an important source of social capital for the local area. Access to PGT education is associated with performance/experience at the UG education, in a similar way to the relationship between access to higher education at the UG level is associated with their performance/experience at school/college in the local area. With 70% of the University of Greenwich UG students coming from the local area (living within an hour of the campus and often as a commuter student), strong local ties to schools and colleges have been replicated through the design of the FF for access to PGT programmes of study.

The results also find that when considering whether to progress to a PGT course or not, bringing together these three groups of theories into a common framework was fruitful. Our online survey data found evidence for all three domains of theories, and this suggests that drawing together theories from across social science disciplines could be a useful approach to modelling PGT programme intentions.

The implications of these findings for policymaking can be considered at institutional and government levels. At the institutional level, the implications for those in the Russell Group and the other pre-92 institutions is to consider how to enable access most effectively to students from post-92 institutions onto their PGT programmes. This may include a rethink of the timing of applications and offers for home PGT and the possibility for open day events for home PGT in the summer months for entry in September, as the

results of our study find that in March most students are still focused on completing their degree well than their future plans. It may also mean a consideration of the institutional cultural norms around which other higher education providers are recruited from. The implications for the post-92 institutions are to celebrate their role in improving social mobility through access to higher education and to build on this with programmes like the FF to encourage our students continue to thrive. The recent report by the Britton, Drayton, and Van der Erve (2021) which found amongst the top-ranking institutions for social mobility the less selective universities in London, including the University of Greenwich ranked as 4th in the UK. The report highlights the role of the post-92 institutions and especially those in London for enabling social mobility and the findings from the FF suggest that this could be enhanced by creative access to PGT solutions especially through the offer of fee reductions to ensure the tuition fees can be covered by the master's loan scheme. Finally, at the government level with pressure at present following the Augar (2019) report to identify and limit low-quality courses, the findings of the FF add to the evidence that there is an important contribution within the higher education sector of post-92 institutions such as the University of Greenwich in terms of social mobility and access including at PGT level with schemes such as FF, something which would need to be included in the measures of a successful programme beyond higher personal earnings.

The results for this UK study are in line with Windchief (2019) study of Montana State University, USA which sought to improve inclusivity of graduate schooling. Both University of Greenwich, UK and Montana State University, USA serve a diverse local population who face significant financial constraints to self-fund PGT study. In comparing these two studies UK/USA, the clear message for global universities seeking to improve access to PGT for their local students is the need to use their limited resources for PGT recruitment in a targeted way to reduce the potential debt for those without family resources to support them.

Our results also confirm the evidence from Ireland found that students undertaking foundation courses before their undergraduate degree were more likely to continue into PGT (Keane 2017). This links to results from the FF which showed the use of questionnaire as a tool to encourage intention to study as well as a very strong link between intention to study PGT at the Greenwich and a sense of belonging from their UG study. In comparing these two studies UK/Ireland, the clear message for global universities seeking to improve access to PGT for their local students is the importance of developing a sense of belonging and fostering transition between UG and PGT especially for their local students.

The UK government initiative to help students fund PGT programmes through the £10k loan schemes may be enough to support the marginally credit constrained to undertake PGT courses but may not be sufficient for true equality of access for all. The UK government's levelling up goal requires careful consideration of the Augar recommendations for the differential impact on diverse student bodies. It is clear that within any higher education sector, there is a role for the local university in supporting access at all levels in the system and especially at the PG level. Local universities can act as a bridge to PG access for higher-ranked universities and enable access to PG studies for those who, for various reasons, are geographically constrained. It is vital to be aware that to ensure diversity in the student body and meet access aspirations, we also need to ensure diversity in providers and ensure local universities are valued as a vehicle for social mobility.

Note

1. In the literature presented, individuals are not simply considered as rational or irrational decision-makers, but as decision-makers whose decision-making meanders from abject rationality to frivolous irrationality.

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ORCID

Denise Hawkes http://orcid.org/0000-0002-7305-3846

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