

The Die is Cast: Brexit's Influence on Student Career Intentions

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Abstract

Brexit, Britain's referendum to leave the European Union (EU), provided the backdrop for this study, although how or even if it will be implemented is uncertain. Most UK voters supported leaving the EU, yet an overwhelming majority of young people voted to remain. In an environment of economic and labour market ambiguity, we sampled 304 UK university students to examine Brexit's perceived impact on their career plans. Using Theory of Planned Behaviour, we found that students with higher internal locus of control intended to adapt career plans, although students who identified themselves as British were less proactive. Whilst most students aspired to follow a career path as an employee of a large company, nearly one third intended to become entrepreneurs, a path preferred by twice the number of males as females. Our results provide important insights for post-Brexit planning of educational policy and for businesses and labour markets throughout Europe.

Keywords: Brexit, higher education, career planning, education policy, labour market

1. Introduction and background

Former British Prime Minister Tony Blair said that the European Union Referendum Act of 2015, commonly known as Brexit was '...like moving house without having seen the new house,' and although the costs, consequences and the terms of moving are unknown, an agreement had been made (Dammann, 2017). Despite warnings of political uncertainty and economic disruption (e.g. Cumming & Zahra, 2016; Dhingra et al. 2016b; Ebell & Warren 2016), a majority of voters in the United Kingdom (UK) chose to leave the EU: a simple choice, which triggered 'the most extensive upheaval for decades in British economic and social policy' (Bachtler & Begg 2017, p. 1). Post-referendum Britain was marked by dramatic political shifts. David Cameron resigned as head of government in the month following the vote and the initiation of an official two-year countdown clock to Britain's exit on 29 March 2017. On face value, it appeared that the die had been cast.

Soon after the results were tallied, many predicted impacts emerged. By the first quarter of 2017, the UK's GDP growth and employment slowed sharply, inflation jumped unexpectedly (Cox 2017), and an unprecedented decline in consumer spending followed a sharp fall in business capital

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expenditures (Sentance 2017). Negative impacts on trade agreements, taxation, customs procedures, foreign direct investment, mobility and immigration policies and a host of other issues materialised. UK businesses faced skill shortages and recruitment difficulties because of uncertainty in residency status of their current EU staff and anticipation of immigration policy revisions, with some confronting a potential need to relocate operations outside the UK (Jay et al. 2016). Business concerns were summarized in a large survey gathered across seven geographical markets by the British Chambers of Commerce, revealing that a large majority of senior executives expected Brexit to adversely affect profits, and that many global businesses were uncertain and nervous (2017). The confluence of political, economic, and business uncertainty surrounding the referendum has resulted in turmoil in the UK and parts of Europe, historically harmful to both capital investment and hiring (Baker et al. 2015; Bloom et al. 2007).

Concurrent with the start of the official countdown clock, proposals designed to eliminate or mitigate Brexit's impact emerged. Support is growing for a second referendum among British citizens and senior Conservative MPs (Colson, 2018), leading some to doubt that an exit will actually happen. Scottish voters, who overwhelmingly voted to remain in the EU, are likely to consider another independence vote once clarity is attained in the relationship between the UK and EU (Barigazzi, 2018). Attempts to avoid a hard border between Northern Ireland and the Republic of Ireland whilst facilitating commerce has increased the complexity of trade talks between the EU and the UK (Cooper, 2018). These and a myriad of apparent and yet unknown consequences prompted the Bank of England to warn of 'greater uncertainty about future developments in the withdrawal process' (Chu, 2018, p.54).

On the surface, votes in Brexit referendum appeared to be a bifurcated along political party lines; with the economy and immigration dominating the debate and sharply dividing voters (Hobolt, 2016). Voting pattern analysis also revealed sharp demographic differences; with 75 percent of those 24 and younger voting to remain whilst 61 percent of those over 65 voting to leave the EU (Goulard 2016), with strongest support to remain (81%) found in voters enrolled in full time education (Ashcroft 2016) and university graduates (McGill 2016). Although leaving the EU was an outcome favoured by a majority of UK voters, it was not the outcome that a large majority of young people wanted.

At the time of this writing, a climate of uncertainty in Britain's political, economic, higher education, and business sectors has few mitigating influences. Questions remain regarding whether or not an exit from the EU will actually happen, and if it does, what a post-Brexit Britain will ultimately look like. Although Brexit's potential effects on Europe's economy and commerce is becoming clearer, its impact on young people's careers remains indistinct, and even less is known about how this group intends to respond to the far-reaching impacts on Europe's labour markets. UK university students are also vulnerable to Brexit's effects on Britain's higher education sector (Ellison 2017), a sector plagued by uncertainty surrounding residency issues for university staff, research and exchange relationships with EU universities, ongoing financial support for EU students and transnational exchange programs such as Erasmus Plus and Horizon 2020 (Black, 2017). EU resident students represent nearly six percent of the UK university population, and according to the House of Commons Education Committee, their number would be cut in half if financial support and residency rights for this important group of students is removed (Committee 2017). To offset lower EU enrollments, some combination of cost reductions, higher fees for UK resident students and increased government support may be required to maintain the financial wellbeing of the UK higher education.

Although ‘...any clarity as to what Brexit is ultimately going to look like remains deeply uncertain (Middleditch, 2017, p. 986), impacts from the uncertainty created by the referendum’s results are becoming increasingly apparent. An early indicator of potential employment issues was revealed in a KPMG survey which found that half of the EU citizens working in the UK felt less welcomed and valued since the Brexit vote, and a large percentage of young, educated respondents were contemplating leaving the UK (2017c). When combined with a reduction in applications from EU citizens to UK universities, the results signal the emergence of a potential ‘high-end talent pipeline problem’ (2017c). Another KPMG survey examined the career prospects of recent UK university graduates, finding that 75 percent of respondents believed there would be fewer jobs, and nearly half were less likely to want to work in the UK because of Brexit (2017a). Since economic turmoil and disruptions have been shown to radically alter employment relationships and disrupt well-established approaches to career decision-making for workers (Callanan et al. 2017), university graduates are ‘particularly exposed to the uncertainty Brexit brings’ (2017a). It is, therefore, likely that conditions such as those seen in post-referendum Britain will have an equal or greater effect on UK students’ career intentions than the effects revealed in the KPMG surveys.

To better understand the impact of uncertainty on career intentions in post-referendum Britain, we surveyed students at the University of Hertfordshire in England, UK, to examine what, if any, changes British university students intend to make to their academic and career plans. Analogous to the KPMG study, we addressed career issues and concerns about changes to career plans. Unlike the KPMG study, we focused on intentions as a predictor of likely future behaviour.

We chose to survey university students for several reasons. Considering the referendum’s potential far-reaching impact on labour markets throughout Europe, UK university students are likely to be directly and significantly affected (Ellison, 2017, p.1). The UK’s 40-year relationship with the EU means that the UK has been a part of Europe for the entire life of most university students, which may at least in part explain their overwhelming support to remain in the EU. UK university students have already invested considerable time and substantial financial resources in their current education and career trajectory. Should Brexit become a reality, returns on their investment will be determined by a labour market different from the one that existed when students embarked on their course of study. EU and UK resident students selected their study and career path based on longstanding and unfettered employment opportunities throughout Europe but potentially face restricted employment options upon graduation (Bulman, 2017) post-Brexit. Further, multinational firms currently located in Britain - a popular career opportunity for graduates - may be motivated to relocate to EU countries for labour, regulatory, taxation, or access to capital reasons (Jay et al. 2016).

Currently, little is known about how students will respond to the sweeping changes predicted in a post-Brexit Europe. How, or indeed if, they will adapt to new mobility restrictions, an uncertain business climate, and an increasingly competitive and constrained labour market may range from changing their field of study or pursuing additional qualifications to withdrawing from university. In Britain’s current climate of uncertainty and heightened rhetoric surrounding the referendum and exit process, we chose to explore student intentions using Ajzen’s Theory of Planned Behavior (TPB) to predict their career behaviours.

The formal process of Britain’s exit from the European Union was concurrent with the writing of this paper, which presented a number of limitations. Peer reviewed literature on the topic was sparse, and what had been written largely focused on legal implications (e.g. Doherty 2016; Jay et al. 2016), or financial and economic implications (e.g. Sahr et al. 2016; Wright et al. 2016), or international business and trade (e.g. Cumming & Zahra 2016). Other sources provided

additional context for our study, including those from government (e.g. Committee 2017), or industry organisations (e.g. Hogan Lovells 2017; PWC 2016), which focused on policy issues (e.g. Begg & Mushovel 2016; Dhingra et al. 2016a; Slater 2016), and the popular press (e.g. Cameron 2016; Rodionova 2017).

In the next section we provide the theoretical framework, followed by a literature review, hypotheses development, a review of methods and data analysis used in this study, discussion and conclusions.

2. Theoretical framework

Our aim was to examine the effects of the referendum and Brexit process on the academic intentions and career plans of university students in England. Specifically, we scrutinized students' intentions to make changes to their career plans as a predictor of their future behaviours.

Theory of Planned Behaviour (TPB)

For nearly 30 years, TPB (Ajzen, 1991; Ajzen & Fishbein, 1977) has been a widely used framework in studies where intentions were used to predict human behaviours. Since intentions capture 'the motivational factors that influence a behavior' (Ajzen, 1991, p.181), TPB posits that the stronger the intention the more likely a person is to engage in a specific behavior. TPB has been effectively used in a variety of empirical studies (e.g. Fayolle & Liñán, 2014; Lukik et al., 2016), and several meta-analyses (e.g. Webb & Sheeran, 2006; Albarracín et al., 2001). It has demonstrated efficacy in a variety of applications, including a stream of research examining entrepreneurial intentions (e.g. Autio et al., 2010; Krueger et al., 2000; Lin et al., 2013), socio-cognitive determinants of drivers in France (Lheureux et al., 2016); perceptions of weight gain among pregnant women in North America (Whitaker et al., 2016); fruit and vegetable consumption in Australia (Kothe & Mullan, 2015); tourists' use of bicycles in China (Han et al., 2016); and advertising's impact on shoppers' decisions (Muralidharan & Sheehan, 2016).

Whilst TPB's predictive capability is limited where there are long time horizons between intention and behaviour (Bird, 1988) and in self-reported intentions (Kautonen et al., 2015), its applicability to this study outweighs its limitations for several reasons. First, TPB has demonstrated strong predictive ability in studies of university students making important vocational choices (e.g., Asare, 2015; Zellweger et al., 2011). Second, university students have volitional control over their academic choices, and their career path decisions are more planned than extemporaneous. Third, while elapsed time between intentions and behaviour may limit TPB's predictive capability, our sample's time horizon from plan to behavior is both shorter and more structured than many contexts where TPB has been employed (e.g. Kolvereid, 1996). Lastly, TPB '...focuses on the proximal antecedents of the behavior in question' as opposed to reliance on knowledge and accurate information (Ajzen et al., 2011, p.116), which is appropriate in the context of political, economic and business uncertainty in post-referendum Britain. Bartram (2016, p. 298) argued that 'the extent to which economic context is significant is a question that would be useful to explore in more detail', and the uncertainty in post-referendum Britain provides a unique opportunity to gain insight into student intentions in an unprecedented economic context.

Career Plans

Careers are a 'major source of personal identity and self-evaluation' because they 'structure a large part of people's everyday reality' (Bandura et al. 2001, p. 187). Research has shown that students entering university consider a variety of criteria in their academic selection processes (Bartolj & Polanec 2012; Galotti 1999; Huntington-Klein 2016). Some students, for example, are averse to the risks of failing associated with some disciplines (Montmarquette et al. 2002). A student's choice of a university field of study, albeit 'made under uncertainty', significantly determines subsequent career choices and career progress (Montmarquette et al. 2002, p. 544) with a broad range of financial, societal and social implications. Disparities in compensation across a spectrum of occupations (Hilmer & Hilmer, 2012; Walker & Zhu, 2011) means that career choices have potentially huge impacts on lifetime earnings (Long et al. 2015).

Hence, we hypothesize that although the effects of Brexit will be widespread, they are likely to have stronger impact on some sectors and career paths than others. We also hypothesize that British students will perceive Brexit's impact on their career plans to be greater than non-British students.

H1a: The importance of Brexit's perceived impact will differ among students with different career intentions.

H1b: The importance of Brexit's impact will be perceived as greater by students who identified themselves as British.

Career Reasons

'The choice of a college major can be one of the most important decisions a student can make' (Porter & Umbach, 2006, p. 429). Although employment prospects and earnings potential among graduates vary widely, how students choose a major course of study is affected by a variety of factors, e.g. attitudes and behaviors of parents, teachers, counselors and friends have been found to play a central role in students' choice of career (Lautenschläger & Haase, 2011). Similarly, career reasons are likely influenced by individual contexts and factors in students' immediate environment, e.g. finances, family and friends, as well as by economic and societal factors in a wider context (Lent et al., 2000). Hence the choice of a career path may be influenced by a myriad of factors, both internal and external, with both short- and long-term considerations, often differing in how each individual process information and responds.

Complex and varied, career reasons are the basis for intentions (Carter et al., 2003), capturing '...the motivational factors that influence a behavior' (Ajzen, 1991, p. 181). Students pursue education as a means of social mobility or a means to transcend the socioeconomic position of their family (Zikic & Saks, 2009) defined through individual and area-based measures, which include occupation, income, and wealth (Lynch & Kaplan, 2000, p. 18-19). Although improvement in socioeconomic position may also be influenced by other factors, earnings potential and job market conditions have been found to heavily influence prospective students' decisions (Adams et al., 1994; Inman et al., 1989; Leathwood & O'Connell, 2003; Paolillo & Estes, 1982). As a group, university graduates are able to command higher salaries than others (Budd, 2016), with those holding bachelor's degrees in the UK earning 48 percent more than those who do not (2018). Other

studies reveal that remuneration is a more important factor for men than women, although some students are drawn to self-employment for recognition and job flexibility more so than remuneration (Carter et al., 2003).

Hence, we hypothesize that:

H2a: Males will assign a higher level of importance to financial-related career reasons than females.

H2b: Students who assign higher levels of importance to financial-related career reasons also assign higher levels of importance to Brexit's potential impact.

Locus of Control

Scholars in psychology and entrepreneurship have provided much of the extant research on career reasons, attempting to differentiate individuals who chose to become entrepreneurs from others. Theoretical foundations used in this approach are underpinned by a view that a new venture creation process is 'an intentional act that involves repeated attempts to exercise control over the process to achieve the desired outcome' (Carter et al. 2004, p. 142). Used extensively in organizational research, locus of control (LOC) has been found to influence intentions, motivation and performance in organizations (Schjoedt & Shaver 2011). This work was pioneered by Rotter (1966), who explained:

'[...] internal versus external control refers to the degree to which persons expect that a reinforcement or an outcome of their behavior is contingent on their own behavior or personal characteristics versus the degree to which expect that the reinforcement is a function of chance, luck, or fate, is under the control of powerful others, or is simply unpredictable' (Rotter 1990, p. 489).

In other words, LOC refers to the extent to which people believe that they are largely responsible for their own fates and seek opportunities to gather rewards. Individuals with an internal locus of control believe that they can control 'a broad array of factors in their lives' (Judge & Bono 2001, p. 80). Alternatively, people who believe that rewards will come (or not) regardless of anything they do will coast passively through life, hoping for the best (Shaver 2005, p. 208). Thus we define *internal* LOC as the 'perceived behavioral control over outcomes,' and *external* LOC as 'the perception that outcomes are determined by non-behavioral factors' (Ajzen 2002a, p. 676).

Arguably, Brexit's potential impacts on labour markets and career paths are beyond the control of most individuals, creating a potential for some to passively accept the consequences. Those with an internal LOC, however, may be more likely to initiate behaviours within their control in order to proactively adapt their planned career paths to this new context. Hence, we hypothesize:

H3a: High levels of internal LOC will be positively related to changes in career plans associated with Brexit.

H3b: High levels of internal LOC will be positively related to plans to enroll in additional classes or increase academic qualifications following Brexit.

3. Methods

Our survey took place in 2017 at the University Hertfordshire in England, gathering a sample of 304 undergraduate Business Studies students, between 18 and 32 years old. The administered questionnaire focused on students' educational and post-graduation career plans following Britain's exit from the EU. We excluded 18 observations with missing values, yielding a final sample of 286 students, of which 75.1% were British, 48.6% were females, and 40.2% had business family background. The mean and median ages of students was 20.2 and 20 years respectively.

To assure validity and reliability of our survey items, we adopted a subset of career reasons questions (F1-F18) directly from the PSED, a study developed by scholars from 22 institutions around the globe. Their systematic study of entrepreneurial processes conducted over eight yearsⁱ has formed the basis for nearly 100 academic research publications.ⁱⁱ We believe this approach is appropriate because, similar to the entrepreneurial activities, our study focused on individuals persisting at a variety of activities over the course of months or years. Additionally, both activities involve intentional acts and repeated attempts by individuals to exercise control over the process in order to achieve their desired outcomes. Our respondents were asked 'To what extent are the following important to you in your decisions about your work and career choices?'. We chose five categories of items: (1) 'innovation' (F3, F8, F13), (2) 'independence' (F2, F6), (3) 'external validation' (F1, F5, F12), (4) 'roles' (F4, F9), (5) 'financial success' (F7, F10, F11, F14), (6) 'self-realization' (F15, F16, F17, F18). As in the PSED study, our sample responded to each item on a 1 to 5 Likert scale, 1 = to no extent, 2 = to a little extent, 3 = to some extent, 4 = to a great extent, 5 = to a very great extent.

From the PSED study, we also adopted three items related to LOC (G1-G3). The items were 5-point Likert-type scales preceded by the stem 'How accurately would the following statements describe you?'. The response options were 1= Completely untrue; 2= Mostly untrue; 3= It depends; 4= Mostly true; 5= Completely true.

To understand students' career intentions after completion of their university studies, we adopted survey questions from the Global University Entrepreneurial Spirit Students' Survey (GUESSS), one of the largest student entrepreneurship research projects in the world. The survey has been administered every 2–3 years since 2003, with participation from over 50 countries in the most recent dataset (GUESSS 2017). Specifically, we adopted questions related to career intentions (A1-A8). The students were asked to identify from a prescribed list an occupation in which they intend to work five years after completing their studies.

The survey is provided in Appendix 1.

4. Results

Career Plans

Table 1 presents descriptive statistics of demographic and Brexit-related variables, segregating British from non-British students and a comparison of both samples. The results show no

significant differences with regards to age, gender and family business background between British and Non-British sub-samples.

However, as expected, the samples differed significantly in terms of answers to questions B1-B3. Compared to British students, non-British students gave on average higher scores to the questions related to changes in career plans and pursuing additional qualifications due to Brexit (B1 and B2). This suggests that they have a stronger perception of Brexit as potentially impacting on their career plans.

Table 1. Descriptive Statistics of British and Non-British students

<i>Variable</i>	British				Non-British				<i>p-value</i>
	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>	
<i>age</i>	18	32	20.12	2.02	18	27	20.43	1.76	0.243
<i>female</i>	0	1	0.47	0.50	0	1	0.56	0.49	0.180
<i>family business</i>	0	1	0.42	0.48	0	1	0.39	0.49	0.680
<i>Brexit 1</i>	1	5	2.01	1.10	1	5	2.25	1.12	0.056*
<i>Brexit 2</i>	1	5	1.94	1.08	1	5	2.31	1.27	0.046**
<i>Brexit 3</i>	1	5	2.47	1.25	1	5	2.58	1.35	0.512

For *age*, *female* and *family business* P-values in the last column correspond to the results of two-tailed tests comparing both samples. For the three non-parametric variables (*Brexit 1,2 & 3*) we tested the hypothesis that two samples are from populations with the same distribution using the Wilcoxon rank-sum test. * p-value < .1 , ** p-value < .05 , *** p-value < .01 .

Table 2 reports correlations between answers concerning the importance of questions B1-B3 and demographic characteristics. Similarly to our earlier results, we found that British students on average gave lower scores to questions B1 and B2. This indicates that British students are less likely to change career plans (B1) and pursue additional academic qualifications (B2) following Brexit. Thus, hypothesis H1b is not supported.

The results also show that females are significantly more likely to give higher scores to the question about the importance of uncertainty associated with Brexit (B3). In addition, older students are significantly less likely to pursue additional academic qualifications due to Brexit (B2), as the perceived importance of Brexit decreases as the age of students in our sample increases.

Table 2. Spearman correlations between the importance of Brexit and demographic variables.

	<i>Brexit 1</i>	<i>Brexit 2</i>	<i>Brexit 3</i>	<i>age</i>	<i>female</i>	<i>British</i>
<i>Brexit 2</i>	0.546*** (0.000)					
<i>Brexit 3</i>	0.591*** (0.000)	0.517*** (0.000)				
<i>age</i>	-0.097 (0.101)	-0.121** (0.042)	-0.069 (0.244)			
<i>female</i>	0.052 (0.380)	0.013 (0.826)	0.101* (0.088)	-0.043 (0.468)		
<i>British</i>	-0.105* (0.075)	-0.145** (0.014)	-0.041 (0.488)	-0.072 (0.225)	-0.073 (0.220)	
<i>family business</i>	0.109* (0.066)	0.143** (0.016)	0.078 (0.189)	-0.027 (0.648)	0.009 (0.881)	-0.036 (0.541)

Note: P-values in parentheses. * p-value < .1, ** p-value < .05, *** p-value < .01

We ran regressions to estimate the answers to the questions B1-B3 as a function of a set of control variables, namely socio-demographics (age, gender, nationality), family business background, variables associated with financial success (F7, F10, F11 and F14), and variables associated with LOC (G1-G3). To illustrate, we present models (1) and (2) and (3) respectively – in which questions B1, B2, and B3 are the dependent variables based on ordered logistic regressions. Consistently, the results displayed in Table 3 show a significant negative relationship between questions B1 and B2, and British nationality, suggesting that British students tend to give lower scores to the questions on changing career plans and pursuing additional qualification due to Brexit. Whilst some marginally significant effects of females and older students are observed in the dataset, the most salient result from these regressions is the statistically significant result for British students. Consistent with our earlier findings, we found no sufficient evidence to support hypothesis H1b, so we conclude that British students in our sample perceive the importance of Brexit’s impact as lower when compared to non-British students.

Table 3. Factors affecting students' perceptions on the importance of Brexit.

	(1) Brexit 1	(2) Brexit 2	(3) Brexit 3
<i>age</i>	-0.096 (0.101)	-0.125** (0.045)	-0.050 (0.343)
<i>female</i>	0.258 (0.250)	0.096 (0.681)	0.341 (0.118)
<i>British</i>	-0.440* (0.092)	-0.531** (0.043)	-0.105 (0.685)
<i>family business</i>	0.252 (0.267)	0.341 (0.140)	0.212 (0.338)
<i>internal loc</i>	1.177 (0.144)	1.066 (0.201)	1.503* (0.059)
<i>large company (a1)</i>	-0.226 (0.334)	-0.017 (0.942)	-0.005 (0.983)
<i>f7</i>	-0.025 (0.861)	-0.225 (0.122)	-0.166 (0.231)
<i>f10</i>	0.117 (0.246)	0.374*** (0.000)	0.081 (0.415)
<i>f11</i>	0.156 (0.315)	-0.144 (0.368)	0.075 (0.599)
<i>f14</i>	-0.356** (0.019)	-0.049 (0.751)	-0.015 (0.913)
<i>N</i>	286	286	286

Note: P-values in parentheses. * p-value < .1 , ** p-value < .05 , *** p-value < .01

Next, we focused on examining Brexit's importance to students choosing different career paths, with distribution reported in Table 4. Overall, most students in our sample want to be employed by a large company five years after graduation (49% of the sample) followed by being an entrepreneur (30.10%). We found that a significantly higher proportion of males (41.20%) want to become entrepreneurs and more females are uncertain about their chosen career paths. Furthermore, we find significant differences in terms of desire to become entrepreneurs between students with a family business background and students who do not have such background. Moreover, students without a family business background were more uncertain regarding their chosen career path (as captured by item A7), indicating that those students who come from business-owning families have a clearer picture about their future aspiration.

Table 4. Intended career paths five years after graduation

	Overall %	Nationality			Gender			Family Business		
		Non-British	British	P-value	Male	Female	p-value	No	Yes	p-value
<i>Employee at large company</i>	42.60	42.30%	43.10%	0.937	37.80%	48.20%	0.065*	42.40%	43.60%	0.900
<i>Employee at small company</i>	3.90	7.00%	2.80%	0.107	2.70%	5.00%	0.310	4.10%	3.40%	0.773
<i>Entrepreneur or owner of a company</i>	30.10	29.60%	30.30%	0.917	41.20%	18.40%	0.000***	25.60%	36.80%	0.033**
<i>Scientist</i>	1.70	0.00%	2.30%	0.196	1.40%	2.10%	0.608	2.30%	0.90%	0.346
<i>Teacher or other academic profession</i>	0.70	1.40%	0.50%	0.410	0.70%	0.70%	0.968	0.60%	0.90%	0.785
<i>Other</i>	3.50	5.60%	2.80%	0.259	3.40%	3.50%	0.928	4.10%	2.60%	0.490
<i>Undecided or doesn't know</i>	16.10	12.70%	17.00%	0.369	11.50%	20.60%	0.032**	19.80%	10.30%	0.029**
<i>No professional career plan</i>	1.40	1.40%	1.40%	0.993	1.40%	1.40%	0.955	1.20%	1.70%	0.699

P-values correspond to the results of two-tailed tests comparing both samples. * p-value < .1 , ** p-value < .05 , *** p-value < .01.

In Table 5, we compare the answers regarding the perceived impact of Brexit on students' career plans. We examine the top three career choices in Table 3 ('Employee of a large company', 'Entrepreneur or owner of a company', and 'Undecided or do not know'), which include 88.8% of our sample. We did not find any significant differences between career intentions and potential change of career plans due to Brexit, indicating no support for hypothesis H1a. In other words, despite their different career intentions, students do not differ in their perceptions of the importance of Brexit for their career plans.

Table 5. Importance of Brexit comparisons for different career paths

	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>p-value</i>
	<i>Employee at large company</i>		<i>Entrepreneur or company owner</i>		
Brexit 1	2.031	1.083	2.165	1.176	0.461
Brexit 2	1.976	1.169	2.133	1.143	0.244
Brexit 3	2.512	1.305	2.571	1.283	0.684
	<i>Employee at large company</i>		<i>Undecided or do not know</i>		
Brexit 1	2.031	1.083	2.250	1.157	0.247
Brexit 2	1.976	1.169	1.979	0.999	0.718
Brexit 3	2.512	1.305	2.479	1.254	0.930
	<i>Entrepreneur or company owner</i>		<i>Undecided or do not know</i>		
Brexit 1	2.165	1.176	2.250	1.157	0.623
Brexit 2	2.133	1.143	1.979	0.999	0.540
Brexit 3	2.571	1.283	2.479	1.254	0.671

Notes: Brexit questions 1,2 & 3 refer to Likert Scale type of questions with the values minimum of 1 and the maximum of 5. P-values in the last column correspond to the results of Wilcoxon rank-sum tests.

Career Reasons

Next, we analyzed the relationship between financial-related career reasons (F7, F10, F11, F14) and the basic demographic variables. To capture the overall effect of financial-related career reasons, we added up the scores given on the Likert scale for financial-related career reasons (F7, F10, F11, F14) and divided the sum by the maximum score of 20, thus normalizing this variable between 0 and 1. Consistent with our earlier results, we found that this normalized score differed significantly for students with family business background when compared to students with no family background.

The correlations coefficients in Table 6 provide strong evidence that *age* is negatively correlated with financial career motivation, suggesting that as students get older financial success becomes less of a concern for them. Although not as robust as *age*, we found that a family business background is positively related to financial-related career reasons. There is a weakly significant negative correlation between females and question F10, suggesting that for females building a business that their children can inherit is less important than it is for males. Hence, while there is some evidence supporting hypothesis H2a, we cannot clearly conclude whether male students assign higher level of importance to financial-related career reasons than females.

Table 6. Spearman correlations between importance of financial related career reason and demographic characteristics.

	<i>F7</i>	<i>F10</i>	<i>F11</i>	<i>F14</i>	<i>F_norm.</i>	<i>age</i>	<i>female</i>	<i>Briti.</i>
<i>F10</i>	0.233*** (0.000)							
<i>F11</i>	0.369*** (0.000)	0.212*** (0.000)						
<i>F14</i>	0.388*** (0.000)	0.312*** (0.000)	0.571*** (0.000)					
<i>F_norm.</i>	0.656*** (0.000)	0.688*** (0.000)	0.722*** (0.000)	0.778*** (0.000)				
<i>age</i>	-0.038 (0.521)	-0.126** (0.033)	-0.144** (0.015)	-0.126** (0.034)	-0.156*** (0.008)			
<i>female</i>	0.044 (0.464)	-0.101* (0.088)	-0.013 (0.823)	0.057 (0.339)	-0.017 (0.777)	-0.043 (0.468)		
<i>British</i>	0.019 (0.753)	-0.076 (0.201)	-0.010 (0.866)	-0.022 (0.715)	-0.039 (0.516)	-0.072 (0.225)	-0.073 (0.220)	
<i>family business</i>	0.028 (0.637)	0.171*** (0.004)	0.033 (0.580)	0.024 (0.692)	0.103* (0.082)	-0.027 (0.648)	0.009 (0.881)	-0.0 (0.52)

P-values in parentheses. * p-value < .1 , ** p-value < .05 , *** p-value < .01.

To examine whether the importance of financial-related career reasons is positively associated with the impact of Brexit on career plans, we correlated these two sets of variables in Table 7. We found that those students who gave higher scores to the question regarding the importance of building a business that their children can inherit (F10) also gave higher scores to the question on plans to enroll in more classes or pursue additional academic qualifications as a result of Brexit (B2). No other significant relationships were found. Hence, although we found some evidence to support hypothesis H2b, we cannot clearly conclude that students who assign higher levels of importance to financial-related career reasons perceive the impact of Brexit on their career plans as more important.

Table 7. Spearman correlations between importance of financial related career reason and importance of Brexit.

	<i>Brexit 1</i>	<i>Brexit 2</i>	<i>Brexit 3</i>	<i>F7</i>	<i>F10</i>	<i>F11</i>	<i>F14</i>
<i>Brexit 2</i>	0.546*** (0.000)						
<i>Brexit 3</i>	0.591*** (0.000)	0.517*** (0.000)					
<i>F 7</i>	-0.006 (0.926)	-0.059 (0.321)	-0.017 (0.771)				
<i>F 10</i>	0.096 (0.106)	0.241*** (0.000)	0.048 (0.419)	0.233*** (0.000)			
<i>F 11</i>	0.014 (0.811)	-0.023 (0.696)	0.053 (0.374)	0.369*** (0.000)	0.212*** (0.000)		
<i>F14</i>	-0.093 (0.116)	0.015 (0.805)	0.048 (0.423)	0.388*** (0.000)	0.312*** (0.000)	0.571*** (0.000)	
<i>F_norm.</i>	0.014 (0.816)	0.087 (0.143)	0.049 (0.407)	0.656*** (0.000)	0.688*** (0.000)	0.722*** (0.000)	0.778*** (0.000)

P-values in parentheses. * p-value < .1 , ** p-value < .05 , *** p-value < .01.

The results in Table 3 concerning finance-related career reasons also suggest that those students, who intend to build a business their children can inherit, are significantly more likely to pursue additional academic qualification following Brexit (B2). This finding is in agreement with our earlier findings. However, we also observe a statistically significant negative relationship between questions F14 and B1. This finding provides mixed evidence regarding the hypothesized positive correlation between financial-related career reasons and perceived importance of Brexit's impact on career plans. Therefore, we conclude that there is no sufficient evidence to support hypothesis H2b.

Locus of Control

We examined whether higher levels of internal LOC were positively related to the perceived impact of Brexit on students' career plans. To capture the overall effect of internal LOC, we added up the scores given on the Likert scale to questions G1, G2 and G3 and normalized this variable between 0 and 1 by dividing the sum by the maximum score of 15. The correlations coefficients reported in Table 8 show that there is a significant correlation between B2 and G3. There is also a significant correlation between B3 and G2 as well as between B3 and G3. We also observe that the normalized overall internal LOC score (*G_norm.*) is positively and significantly correlated with the importance of Brexit-related uncertainty for students' career decisions (B3). Hence, our results support hypotheses H3a and H3b, i.e. higher levels of internal LOC are indeed positively related to propensity to pursue additional academic qualifications or change career plans due to Brexit. The regression results in Table 3 confirm our findings.

Table 8. Spearman correlations between importance of financial related career reasons and demographic characteristics.

	<i>Brexit 1</i>	<i>Brexit 2</i>	<i>Brexit 3</i>	<i>G-1</i>	<i>G-2</i>	<i>G-3</i>
<i>Brexit 2</i>	0.546*** (0.000)					
<i>Brexit 3</i>	0.591*** (0.000)	0.517*** (0.000)				
<i>G-1</i>	0.033 (0.580)	-0.031 (0.608)	0.041 (0.489)			
<i>G-2</i>	0.055 (0.353)	0.061 (0.302)	0.111* (0.061)	0.454*** (0.000)		
<i>G-3</i>	0.085 (0.150)	0.126** (0.033)	0.117** (0.048)	0.338*** (0.000)	0.520*** (0.000)	
<i>G_norm.</i>	0.073 (0.221)	0.064 (0.286)	0.111* (0.061)	0.778*** (0.000)	0.810*** (0.000)	0.782*** (0.000)

P-values in parentheses. * p-value < .1 , ** p-value < .05 , *** p-value < .01.

5. Discussion

Considering that 'labour market outcomes of undergraduates' choice of subject are important for public policy and for students' (Davies et al., 2012, p. 361), this study sought to explore whether the context of uncertainty and potential far-reaching effects of Brexit would influence the career decisions of university students - arguably the segment of the UK population likely to be among the most heavily affected by long-term economic and labour market turmoil.

Our study yielded some expected results, some unexpected, and some inconclusive that require further investigation. We found a distribution of career plans similar to that revealed in the GUESSS study of 1,000 British students (GUESSS, 2017), in that most students intended to be employed by a large company five years after graduation. In contrast to the GUESSS study, we found significant differences in terms of career plans among males and females, with more than twice the number of males choosing an entrepreneurial career. Females were also more uncertain about their career plans and more concerned about the uncertainty associated with Brexit than males. This finding supports previous studies of gender differences in career aspirations among British students that concluded males had higher perceptions of their own abilities (Gutman & Schoon 2012), and were less risk averse than females (Charness & Gneezy 2012).

As expected, students with family business backgrounds displayed a significantly stronger propensity to become entrepreneurs, partially explained by influences in their immediate environment. They are also more certain about their career choice when compared to other students. Our findings support aspects of previous studies, in which family environment is considered a key factor in forming entrepreneurial intentions. For instance, in their examination of offspring intentions in family enterprises, Stavrou and Swiercz (1999) cited several studies that found college education was strongly encouraged in family businesses.

We expected that Brexit would be important to university students and found that students pursuing different career paths did not differ in their perceptions of its importance for their career plans. We found, however, that older students assigned less importance to Brexit's potential impact on their studies and were less likely to pursue additional academic qualifications in response. One possible explanation is that older students, being at a later stage of their studies, believe they would be less affected by Brexit's uncertainty. Older students may also rely on previous employment experience and professional networks as contingencies not yet developed in younger students.

Surprisingly, we found that Brexit's potential impact on career plans is less of a concern for British students than non-British students, which could be attributed to expected residency, employment mobility and financial support restrictions, more likely to affect the latter than the former. Another possible explanation is that public debate on Brexit's potential effects on the UK labour markets has focused more on labour deficiencies resulting from EU migrants leaving the UK, and less on potential UK resident job losses. While our sample was homogeneous in terms of subject choice, we considered the effects of social class as a possible explanation of this surprising result. However, our survey did not contain a question on social class, so we could only use family business background as a proxy to speculate about the effect of social class on students' perceptions. The results showed no significant differences with regards to family business background between British and Non-British sub-samples. Yet, social class cannot be identified with family business background alone so the effect of social class on British students' perceptions of the potential impact of Brexit on their career plans offers an interesting avenue for future exploration.

Financial-related career reasons were found to be more important to men than women in the PSED study (Carter et al. 2004) but such finding did not emerge from the data in our sample.

We found, however, that males differed significantly from females in their stronger desire to build a business their children can inherit, indicating financial interests may play a role in their career decisions. Not surprisingly, students with family business background are also strongly driven by the idea of building a family business for their children, assigning greater importance to financial-related career reasons than other students. While our results were inconclusive in linking Brexit's importance to financial-related career reasons, they do show that those entrepreneurial-minded students who aspire to build family businesses are more proactive in planning to enroll in more classes or pursue additional academic qualifications as a result of Brexit.

Contrary to the view that career choice is based primarily on a financial return on investment in their education, older students appear to be less concerned with financial success than younger students. Perhaps they tend to focus more on other factors such as self-realization, recognition, innovation and independence, or the perspective gained through experience provides a level of reassurance not present in younger students. This view is supported by Ajzen's (2002b) assertion that prior experience can be a powerful influence in situations where individuals have little certainty in terms of subjective norms or behavioral control (Carr & Sequeira, 2007). Overall, our findings are consistent with previous studies, concluding that some students are unlikely to be motivated by salary considerations and may have reasons other than financial in their subject choices and career plans (e.g. Davies et al., 2012).

We found a strong and significant relationship between LOC and intentions to change career plans or pursue additional studies following the Brexit referendum. Studies have shown that high internal LOC is crucial to positive outcomes and personal growth (Malhotra, 2017), higher career aspirations and greater career decidedness (Duffy, 2010). Students' belief in their ability to influence their career through learning determines their aspirations and level of motivation (Gbadamosi et al. 2015). Indeed, we found that students who believed their achievements were a result of hard work, viewed the uncertainty associated with Brexit as important for their career decisions and planned to pursue additional academic qualifications in response.

Therefore, students with high internal LOC are likely to initiate behaviors within their control in order to adapt to Brexit's uncertainty and potential consequences. This finding is consistent with the literature in confirming that individuals with high degree of internal LOC are more proactive because they believe they have volitional control over their career paths. Interestingly, students with family business background are more likely to change their career plans and enroll in more classes due to Brexit, which suggests more proactive behavior and higher internal LOC. This proposition, although outside the scope of this study, provides an interesting direction for future research.

6. Conclusion

This research project was conceived shortly after the results of the Brexit referendum were announced. From inception, we worked with a paucity of facts and a plethora of uncertainty in the context of Britain's post-referendum environment. Although what, if any, actual effects there will be on Britain's economy and labour market remain far from certain, contingency planning by UK businesses has become evident and should be expected by those embarking on their careers. Subsequent to our data collection, KPMG published a study of British university graduates, revealing that 62 percent felt less confident about their career prospects as a result of the Brexit

vote, because ‘graduates are particularly exposed to the uncertainty Brexit brings’ (2017d). The survey also found that 75 percent of graduates believed fewer jobs would be available (2017d), so we expected that British students would assign a higher level of importance than others to Brexit’s potential impacts on their careers.

Surprisingly, we found that British students in our sample were less concerned about Brexit when compared to non-British students. Further research is needed to better understand the reasons, which could range from confidence in their individual ability to overcome Brexit’s potentially adverse effects through confidence in the ability of the British government to secure the future to insufficient information or apathy. The significant difference between graduates and current university students in this critical measure justifies further study. Importantly, future research must take into account the possible effects of social class on British students’ perceptions of Brexit’s potential impact on their career plans.

Although the impacts of Brexit are largely beyond the control of any individual, how individuals respond and adapt to them varies. Whether motivated by potential changes in earnings, employability, or the absence of information (Tholen, 2014), students who believe they have control over their career and educational strategies intend to proactively adapt to what they expect to find in a post-Brexit labour market in the UK. Additional research is needed to better understand how students prepare for the challenges and opportunities of a post-Brexit Britain, and how educators and policy-makers can help guide them.

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ⁱ Additional information and access to the PSED database is available at the University of Michigan website at <http://www.psed.isr.umich.edu/psed/home>

ⁱⁱ Links to the articles is available on the Social Science Research Network (SSRN) website, available at https://papers.ssrn.com/sol3/JELJOUR_Results.cfm?form_name=journalBrowse&journal_id=1008681