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Mobility, risk tolerance and competence to manage risks

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Abstract

Migration is a risky behaviour because of uncertainty about future wages, living conditions, changing relationships with family and friends and cultural adjustment. Migration researchers recognize the importance of risk and uncertainty but mostly have approached this as a form of ‘rational’ decision making, rather than in terms of how behavioural economics analyses ‘irrational’ risky behaviours such as drinking, smoking or participating in dangerous sports. The rationalist approaches explain why some groups of individuals are more likely than others to migrate, but find it difficult to explain individual variations in behaviour within these groups. Individual migrants versus non migrants are self-selected in terms of tolerance of risk and uncertainty but, with very few exceptions, there has been no research on migration within the framework of risk tolerance/aversion and competence to manage risk. Moreover, existing research is based on, and constrained by the limitations of, incumbent data sets. Drawing on a specially commissioned large-scale survey of the UK population, this paper uses principal components and logistic regression to analyse the extent to which risk and risk-related measures can be used to predict four different types of mobility profiles. There is evidence of significant associations with general risk/uncertainty tolerance, and

competence-based tolerance. These are strongest in terms of the two most polarised mobility types: the least mobile, the Stayers, and the most mobile, the Roamers.

Key words: risk tolerance, competence, mobility, UK

JEL codes: D03, D81, J61

1. Introduction

In their benchmark review of migration theories, Massey et al. (1993: 456) argued that it remained difficult to express accurately the probability of individual migration ‘as a function of individual and household variables’. Socio-economic characteristics identified which groups were more likely to migrate, but failed to predict which individuals within these groups became migrants. In part this is because traditional economic approaches assumed a rational decision making framework, wherein the costs and benefits of migration were evaluated. The returns to migration are of course important, but there are many potential barriers and facilitators of migration which account for individual behaviour. This paper applies one important, and largely neglected, explanatory framework, the willingness to take risks, to analyse individual mobility profiles, defined by the relation between previous migration behaviour and future migration intentions.

Although there is a well established literature in behavioural economics on the willingness to take risk, notably on health and finance, there have been surprisingly few applications to migration and other forms of human mobility. A few studies, notably in Germany and the USA, have studied the relationship between willingness to take risks and migration (Barsky et al. 1997; Dohmen et al. 2005; Jaeger et al. 2010) but, being dependent on incumbent data sources such as the USA’s Health and Retirement Survey (HRS) and the German Socio-Economic Panel study (SOEP), they rely on generic rather than migration-specific measures of risk tolerance and competence to manage risks (Williams and Baláz 2012).

This paper provides the first detailed analysis of the role of risk, *and* risk-related competencies and attitudes, in determining individual migration or mobility. First, it examines general risk and uncertainty tolerance, extending research developed in Germany and the USA in particular to the UK. Secondly, and originally, we consider the perceptions of the risks specifically associated with mobility. Thirdly, and also original in relation to migration, we analyse the perceived competence to manage risks and mobility. Fourthly, and building generic willingness to take risk research, we examine the socio-

demographic correlates of migration specifically in context of risk tolerance and competence to manage risks. In broad terms, the research contributes to filling a significant in terms of the domains to which willingness to take risk concepts have been applied.

Specifically, the paper utilises a specially commissioned large UK sample to examine the relationships between risk and four different types of international mobility profiles, defined by previous migration behaviour versus migration intentions: Roamers, Aspirers, Ex-migrants and Stayers. The focus on mobility profiles, rather than single migration events, reflects the growing interest in migration as being constituted, for many individuals, of a series of migrations across the life course (Ley and Kobayashi 2005).

The next section outlines key theoretical ideas relating to risk, followed by the methodology, analyses of the risk-related determinants of mobility utilising principal components analysis and logistic regressions, and discussions of the findings. The conclusions consider the broader significance of the research.

2. Conceptualizing willingness to take risk in human mobility studies

Risk is frequently referred to in studies of individual migration, including human capital theories but, with a few exceptions (e.g. Tunali 2000; O'Connell 1997; Allen and Eaton 2005), is rarely explicitly analysed (Roberts and Morris 2003), instead usually being implicit in wages and other returns and costs. Yet attitudes to, and competencies to engage with, risk are central to individual mobility, as in other fields such as health or changing jobs.

The starting point for defining risk is Knight's (1921) distinction between *risk* (known risk) and *uncertainty* (unknown risk), that is whether the probabilities of different outcomes are known. The source of risk and uncertainty in mobility is imperfect knowledge of the material and non material costs and returns from staying versus moving to one or more alternative locations. This is compounded by lack of tacit knowledge, or

accumulated personal knowledge, about potential destinations, compared to an individual's usual place of residence (Williams and Baláž 2012). There is always uncertainty in mobility. Even where some risks are identifiable, knowledge of these is imperfect. Therefore, mobility should be understood as characterized by expectations about risk formed under conditions of partial knowledge and uncertainty (Williams and Baláž 2012).

Neither risk nor uncertainty are usually explicitly examined in the traditional economic approach to migration (but see O'Connell 1997; Allen and Eaton 2005), which assumes that individuals make a rational cost-benefit analysis of the expected discounted returns of migration over future time periods, based on perfect knowledge (Mincer 1978). Human capital theories more directly acknowledge risk, conceptualizing migration decisions as investments based on differential lifetime returns to human capital in different places, which are acknowledged as being uncertain (Stark 1991). However, risk is still assumed to be factored into estimated future anticipated returns (Katz and Stark 1986; Sjastaad 1962) that are assessed in a rational cost-benefits approach.

Behaviouralist approaches in migration studies are relatively rare and were developed in response to the limiting assumptions of traditional economic approaches, with Wolpert (1965) being the first to consider bounded rationality and sub-optimality in migration decisions. Given incomplete knowledge of the returns from moving, migrant decisions are taken within bounded rationality, and outcomes are satisficing rather than maximizing. While this recognizes the limits to rational decision making, it assumes all individuals are equally risk tolerant. Subsequently, de Jong et al (1983) considered migration decisions in terms of the 'cognitive calculus' of costs and benefits involving a subjective, anticipatory weighting of factors in attaining individual goals by staying versus moving: the factors included risk attitudes alongside other psychographic measures, and socio-demographic variables.

Behavioural research on willingness to take risks provides a framework for analysing risk in migration studies. The starting point is the work of Tversky and Kahneman (1974), and

associates, on *risk aversion/tolerance*, and whether individuals possess a *general risk trait* which determines risky behaviour in all areas of life, or whether there are *domain specific traits* in areas such as drinking and driving (Tversky and Fox 1995) and, in this instance, human mobility and migration. The existence of a ‘general risk trait’, based on biological and genetic factors, is widely recognized, but also that this may be obscured by domain-specific external factors and constraints. Barsky et al. (1997) found statistically significant correlations between risk-aversion and specific risky behaviours, such as drinking, lack of health insurance, and previous international migration. They also found ‘tremendous variability in the behaviours, so only a small fraction of their variance is explained by risk tolerance’ (Barsky et al. 1997: 575). In Germany, using SOEP (Socio-Economic Panel) data, Dohmen et al. (2011: 33) identified significant correlations between general risk-tolerance and five domain-specific forms of risky behaviour: car driving, financial matters, sports, careers, and health. Similarly to Barsky et al. (1997), they found stable underlying risk preferences, but considerable heterogeneity of individual risk perceptions across different domains. Weber et al. (2002) also found that willingness to take risks varies significantly across different domains: finance, health, recreation, ethical and social risks. This suggests that while there is a ‘general risk trait’, its expression is subject to domain-specific constraints, indicating the need - to which this study responds - to develop more specific measures of risk for particular behaviours such as migration.

Migrants generally would be considered more likely than non-migrants to be risk tolerant, except in extremely challenging political, economic or environmental conditions where non migration involves major negative risks. Only limited research has been undertaken on migration, and especially international migration, in terms of willingness to take risks. Barsky et al. (1997: 545), using the US Health and Retirement Study (HRS) survey, found that risk tolerance had significant predictive power in relation to decision making in several areas of risky behaviour, including international migration, even after controlling for socio-economic factors. Immigrant status also had the highest positive association with risk tolerance amongst the various predictors of risky behaviour. In another study using HRS data, Halek and Eisenhauer (2001: 22) found that those who

have already demonstrated a willingness to engage in risk-taking via international migration are significantly more likely to be risk tolerant than the host population. Research utilising the Germany SOEP sample has also shown that internal migrants were more risk tolerant than non-migrants (Dohmen et al. 2005; Jaeger et al. 2010). Nevertheless, there remains considerable unexplained variance, possibly and partly because these studies utilised incumbent data sets which lacked migration-specific risk measures.

Dissimilar behaviours in specific risk domains are partly related to different levels of *perceived competence* in these. Individuals generally are overconfident about their competence compared to others, including their reference groups (Barber and Odean 2001; Camerer and Lovallo 1999; Deaves et al 2010; Deery 1999). With respect to migration risks, this involves being overconfident about their competence in relation to migration. The only migration research on these issues is Baláz and Williams' (2011) study of Slovak students (highly age and education selective sample) which found evidence of general optimism and overconfidence amongst both migrants and non migrants, but they lacked migration specific competence measures.

General risk research has also found consistent *differences in risk tolerance amongst socio-demographic groups*. Men tend to be more risk tolerant than women (Barsky et al. 1997; Halek and Eisenhauer 2001; Hallahan et al. 2004; Pålson 1996; Hartog et al. 2000; Donkers et al. 2001). A meta-analysis of 150 studies (Byrnes et al. 1999) found that men were more risk tolerant in 14 out of 16 observed types of risk behaviour. Younger individuals are less risk-averse than older ones (van Dalen and Henkens 2012): lottery-based questions and attitudes in competence informed domains generally indicate increasing risk-aversion with age (Dohmen et al. 2011; Sung and Hanna 1996, Hallahan et al. 2004). More educated individuals tend to be more risk-tolerant (Halek and Eisenhauer 2001; Hartog et al. 2000; Hallahan et al. 2004), and this is strongly related to competence. These arguments have particular relevance for migration decision making because '...migrants tend to be favourably "self-selected" for labour-market success' (Chiswick 1999: 181), particularly in terms of gender, age and education.

These characteristics relate, at least in part, to variations in risk tolerance and competence, but the evidence to date has been limited in this area. Jaeger et al. (2010) found that overall willingness to take risk is associated with a higher propensity to migrate, conditional on a broad set of demographic characteristics. In contrast, Baláz and Williams' (2011) study of Slovakian students found virtually no differences in risk tolerance between migrant and non-migrant men, but that female migrants had significantly higher general risk-tolerance levels than female non-migrants regardless of perceived competence. Van Dalen and Henkens (2012) found that less tangible elements such as sensation seeking and self-efficacy captured most of the effects of the socio-economic variables, while also increasing threefold the explained variance in migration intentions.

In summary, while migration is a form of risky behaviour that can be analysed in relation to willingness to take risks, it has been largely neglected compared to many other domains such as health and finance. This paper contends that willingness to take risks provides insights into the complexities of individual migration decision making and behaviour, enhancing the explanation provided by marginal utility concepts and traditional economic theories (Massey et al. 1993). The limited research available to date indicates that while migrants are more risk tolerant than non-migrants, the levels of explanation provided by general risk traits are significant, but less strong, than in other domains such as finance and health. Given the reliance of most existing research on incumbent data sources and generic risk measures, this underlines a need for more migration specific measures of risk. Secondly, levels of perceived competence and attitudes to risk are important in explaining variable individual decision making across different domains. This is particularly relevant in migration where individuals have different sources of experience/knowledge of migration, and means of acquiring migration-related competences. There is a need therefore to investigate migration specific competences to manage risks, which has hitherto been absent in risk research. Thirdly, socio-demographic characteristics are associated with differences in risk tolerance/aversion.

3. Methodology

3.1 Hypotheses

This paper analyses the determinants of the willingness to take risk in mobility. The first major set of determinants is ‘pure risk’ tolerance, which approximates the general risk trait. The second relate to domain- specific perceptions of mobility-related risks. The third set of determinants are perceived competence/knowledge to manage risks. Finally, we also consider selected socio-demographic determinants of risk tolerance.

Mobility profiles are defined by cross tabulating individuals’ past international migration behaviour and future intentions, which yields a fourfold classification of mobility (Table 1). At the two extremes are Roamers, who have previously been migrants and intend to migrate again, and Stayers who have never been, and do not intend to become, migrants. Aspirants have not migrated previously but intend to migrate, while Ex-migrants have previously migrated but do not intend to migrate again.

TABLE 1 ABOUT HERE

The following null hypotheses will be tested:

- (H1) There is no significant association between general risk and uncertainty tolerance (‘pure risk’) and mobility profile.
- (H2) There is no significant association between perceptions of mobility related risks, and mobility profile.
- (H3) There is no significant association between perceived competence to manage risks and mobility profile.
- (H4) There is no significant association between risk-related socio-demographic characteristics and mobility profile.

3.2 Data collection and variables

This research is based on an original sample of 5200 individuals, aged 18 and over, who completed an online survey sample commissioned from a commercial survey company. The questionnaire was made available online to their survey panel for a period of 10 days in July 2011. After checking for inconsistencies and missing variables, the final sample included 4528 individuals. The panel is not randomly selected from the UK population, but is drawn from the range of socio-demographic groups: it somewhat over-represents women (55.1% in sample, compared to 50.3% nationally) and younger people (88.7% aged under 65 compared to 83.5%), and especially the more educated (35.2% had a degree or higher degree compared to 25.0%). The sample is not representative, but, representativeness is not critical to the analysis of differences between migrants and non-migrants, as opposed to producing estimates for the UK population. Participation in online surveys is also known to be selective (Yun and Trumbo 2000) being related to IT access, available time, and attitudes to survey participation. However, there is no evidence to date that this is systematically related to attitudes to risk. The geographical distribution of the survey across the UK is not known, but there is no reason to believe it is systematically regionally biased.

The study focuses on international rather than internal mobility as this normally indicates a more significant event with greater risks and uncertainties. Two measures of migration are combined to provide a measure of mobility: previous behaviour versus future migration intentions (see Appendix Table A). Previous migration is measured as having lived or worked abroad for *at least six months in the last ten years*. The emphasis therefore is on relatively recent migration experience, and includes both migrants to the UK from abroad and circular migrants who have returned to the UK (they are not distinguished in the survey). Those who migrated to the UK as young children are excluded by the combination of the 18+ age limit and ten year criteria. The six month criterion ensures we capture both temporary mobilities and longer term or ‘permanent’ migrations, as well as ensuring relatively large sub samples of migrants and intending migrants. All international migrants, for whatever duration (over 6 months), purpose, and whether voluntary or involuntary, are included: the sample is therefore necessarily diverse, but our focus is on mobility profiles (the relationship between previous and

future migration), rather than specific forms of migration. Future migration intentions were measured by a question which offered four alternatives: we classified as intending migrants, those who were either ‘considering this but have not yet made any arrangements’ and those who are ‘firmly determined to do so and have already made arrangements’ (see Electronic Supplementary Material). These represent different degrees of actual commitment to migrate (de Jong et al. 1986; Lu 1999; McKenzie et al. 2012) but future intentions do not of course automatically translate into behaviour in any of these categories. Aggregation is necessary as only a relatively small sub-sample (14.0% of all intending migrants) are firmly determined to migrate. Within the total sample, the majority (62.2%) – as would be expected – were Stayers who had not migrated and did not intend to migrate. There are minimum sample sizes of at least 300 for each category (Table 1).

28 explanatory variables were initially analysed relating to risk tolerance, competence to manage risks and risk-related socio-demographic characteristics (Appendix Table A). The socio-demographic variables are standard measures of age, gender, and education. The risk tolerance questions are mostly standard risk tolerance/aversion questions based on the work of Dohmen et al. (2005) and Fox and Tversky (1995). We also used competence measures based on, or involving adaptation to tourism risks, drawing on the work of Svenson (1981), Alicke et al. (2005), and Lovallo and Kahneman (2003).

In summary (see Appendix Table A for full list), data was collected on willingness to take everyday risks (Q5a-d), such as driving and smoking, to address whether there is a general risk trait. General mobility risks are addressed by questions about the extent to which travel hazards were deterrents to travel (Q2a-h), and migration specific measures are provided by attitudes to risk-related reasons/barriers to migration (Q4a-i). The difference between risk and uncertainty is addressed through standard, generic questions about willingness to gamble on known versus unknown risks (Q6a-b). Nine point scales were used to measure the attitudinal variables, but following standard practice in behavioural economics, gambling questions were utilised to differentiate attitudes to risk

versus uncertainty in Q6 (Ellsberg 1961), providing continuous variables. The socio-demographic measures were ordinal.

The questions about self-assessed competences include individuals' assessments of their willingness to take risks, and to adapt flexibly to new situations compared to their friends. We also include two mobility specific competence measures: adapting to life abroad, and solving problems when travelling abroad (Q3a-e). In addition, a number of questions asked about perceived expertise with respect to both travel risks (Q1a-e) and general foreign travel hazards (Q1f-h). These competence measures were based on the generic research of Svenson (1981), Alicke et al. (2005), and Lovallo and Kahneman (2003).

The validity of the measures is based on their evaluation by a community of behaviouralist researchers (discussed above), and their testing with large scale surveys, derived especially from the German Socio-Economic Panel data (e.g. Dohmen et al, 2005). Cronbach Alpha statistics measure the internal consistency of the constructs: scores over 0.8 are considered to be good for this measure (Gliem and Gliem 2003). Acceptable or very high scores were for travel hazards as deterrents (0.88, Question 2a-h), risk-related reasons/barriers to migrate (0.735, Q4a-i), risk and uncertainty aversion (0.857, Q6a-b), general and mobility related competence (0.839, Q3a-e), expertise on general travel risks (0.830, Q1f-h), and expertise on general foreign travel hazards (0.946, Q1a-e). Although only a relatively low score of 0.544 was obtained for everyday risks (Q5a-d) these variables were retained due to their still being meaningful.

4. Findings

Mobility profiles are complex social constructs shaped by a wide array of influences, such as family circumstances, health, and a range of personal attributes. Therefore the analysis *assesses whether a range of risk-related attributes have a significant relationship with mobility, and their strength, rather than explaining the overall distribution of mobility profiles*. Given the exploratory nature of this research, a long list of potentially influential independent variables are initially considered, and then reduced

using principal components analysis to a smaller number of factors. This also addresses potential issues of multicollinearity.

The rotated components matrix identified eight factors, with eigenvalues greater than 1, accounting for 64% of the total variance (Appendix Table B). The Kaiser-Meyer-Olkin measure of sampling adequacy (0.883) exceeded the recommended satisfactory level of 0.5, and Bartlett's Test of Sphericity was highly significant (0.000) indicating a satisfactory solution. The factor coefficients are summarised in Appendix Table A: coefficients greater than 0.4 are highlighted in bold. The factors are labelled and briefly described below, as well as their expected associations with mobility profiles – expressed here mainly in relation to Stayers, for reasons of conciseness:

Factor 1: perceived *expertise in travel hazards*, measured in terms of transport and travel hazards. Stayers are expected to have less perceived expertise than those with migration experience.

Factor 2; perceived impact of a range of *mobility deterrents* on willingness to travel. Stayers are expected to be more likely to be deterred than migrants

Factor 3: perceived *travel competences*. Stayers would be expected to have low perceived competences than migrants.

Factor 4: perceived international *migration deterrents*, combining variables relating to health, crime and relationships. They are expected to be more important for Stayers than migrants.

Factor 5: perceived *foreign country deterrents*, combining culture/customs/religions and weather/climate variables. Stayers would be expected to be more strongly deterred by such considerations.

Factor 6: perceived *willingness to take everyday life risks* such as drinking, smoking, driving and involvement in risky sports. Stayers would be expected to be less willing to take such risks than migrants.

Factor 7: attitudes to *risk and uncertainty*. Stayers would be expected to be less likely to tolerate risk and uncertainty than migrants.

Factor 8 is a measure of *foreign country allure*, whether for employment/income or novelty seeking reasons. This is expected to be negative for Stayers, and positive for intending migrants.

In summary, the factors provide measures for all the key elements in our conceptual model: competence to manage mobility specific risks, tolerance of general and mobility-specific risks. The combination of the two variables for risk and uncertainty in a single factor, Factor 7, means that the *differences* between these are not revealed by this factor. Instead, being measured in a ‘pure risk’ environment (rather than ‘competence-based one, see Fox and Tversky 1995), this factor is assumed to measure a ‘general risk trait’ that is not related to perceived competence

Logistic regression analyses were undertaken to analyse associations for each of the four mobility profiles (Table 2). Overall explanatory levels are expected to be relatively modest, in common with most behavioural modelling of complex social phenomena. Instead, the main focus is on (a) identifying significant relationships and (b) detecting effect size. The independent variables include the 8 factors, and three, ordinal-scale, socio-demographic variables (age, gender and education).

[INSERT TABLE 2 HERE](#)

We used standard errors to detect potential, persisting multicollinearity. None of the standard errors for the b coefficients in the four regressions was greater than 0.162 for the independents, and 0.261 for the constants, that is, they were well below the recommended critical threshold of 2.0. Another test involved calculating a linear regression model using the same dependent and independent variables as in the logistic regression: none of the variance inflation factors were greater than the critical value of 2.0, indicating that multicollinearity was not problematic (Menard 2002: 76). All the b coefficients have expected and or explainable signs, and there are no counter-intuitive findings. We therefore assume the models are unaffected by multicollinearity.

The highest pseudo R^2 values were for Stayers (Cox & Snell 0.264, Nagelkerke 0.359), followed by Roamers (CS 0.125, N 0.267), Aspirers (CS 0.132, N 0.205), and Ex-migrants (CS 0.022, N 0.057). Therefore, this is consistent with and, in some cases, surpasses the levels of explanation commonly reported in behavioural research on complex social phenomena. The Hosmer-Lemeshow test values indicate that the final regression models are satisfactory for three of the mobility profiles: Stayers, Ex-migrants, and Roamers. However, the final regression model for Aspirers was not significant; there is no evidence this is due to multicollinearity. The model performed best for the two extreme polar mobility categories (Stayers and Roamers), while the model fit was lower for Aspirers and Ex-migrants. In the following analysis, we use the $\exp(b)$ coefficients (odds ratio) to assess the effect size rather than standardised b coefficients, as there is no universally accepted method of standardisation.

Hypothesis 1, that there is no significant association between general risk and uncertainty tolerance and mobility profiles was examined via willingness to bet on risk and uncertainty (Factor 7). We assumed that attitudes to gambling reflect a ‘general risk trait’ free of perceived competence effects (Fox and Tversky 1995). As expected Stayers had highly significant negative attitudes, while Roamers had highly significant positive attitudes (0.01 levels) to general risks and uncertainty. Significant (0.05 level) positive attitudes were also detected for Ex-migrants, but the associations were insignificant for Aspirers. The effect size, as measured by $\exp(B)$, was largest for the Roamers and Stayers. The odds of being more tolerant towards risk/uncertainty were 27.6% higher for Roamers than for non-Roamers when all other variables are controlled for. In contrast, the odds of being less tolerant towards risk/uncertainty were 14.8% lower for Stayers than non-Stayers (Table 2). The effect sizes for Aspirers and Ex-migrants were visibly lower. The null hypothesis (H1) is rejected at the 0.05 level for Stayers, Ex-migrants and Roamers, after controlling for all other variables, including socio-demographic ones. Factor 5 ‘willingness to take everyday risks’ (driving, smoking, drinking, risky sports) mixes ‘pure risk’ attitudes and competence-based risk attitudes (in driving and risky sports in particular). Stayers exhibit the strongest negative coefficient, while Roamers had the strongest positive attitudes towards everyday risks, with the effect size being

particularly large for Roamers ($\exp(B) = 1.401$). This result also hints at the presence of ‘general risk traits’ in the Roamer population group.

In testing **Hypothesis 2**, perceptions of risks associated with mobility are approximated by Factors 2, 4, 5 and 8. As expected, the mobility deterrents (Factor 2) were strongly positive for Stayers, with a relatively large effect size ($\exp(B) = 1.403$). The mobility deterrents were negative for all migrant categories, with Roamers being least likely to be deterred by issues such as poor hygiene/accommodation, health and accommodation. There were similar patterns for the migration deterrents (Factor 4), which was significant for all four mobility groups. The effect size was particularly large for Stayers: an unit increase in Factor 4 increased the odds of being a Stayer versus non-Stayer by 2.04 times. The Roamers were least likely to be deterred by fears of crime/terrorism, health risks, endangering family members etc. ($\exp(B) = 0.544$). Factor 4 was negative both for Aspirers and Ex-migrants, but the effect size was much higher for the former, perhaps reflecting the Aspirers’ lack of experience of having lived abroad. Factor 5, ‘foreign country deterrents’, resembles Factor 2, but encompasses largely ‘unavoidable’ country-specific risks (weather, local customs and religions, natural events). This was most important for the two polar categories – strongly positive for Stayers and strongly negative for Roamers. Factor 8, ‘Foreign country allurements’ (higher income, better jobs and novelty-seeking), was most important for Aspirers and Roamers, followed by Ex-migrants. The Stayers had, as expected, negative attitudes towards the allurements of the foreign countries. Based on the evidence for all four factors, this null hypothesis is rejected.

Hypothesis 3 asserts there is no significant association between perceived competence to manage travel and travel risks and mobility profile. Competence is measured via Factor 1, perceived expertise in travel hazards, and Factor 3, travel competence. Stayers perceived they had low, Aspirers had medium, while Ex-migrants and Roamers had high expertise in travel hazards. The effect sizes were strongest for the polar categories of Stayers and Roamers. For travel competence, Stayers had self-assessed very low levels ($\exp(B) = 0.547$), while Aspirers and Roamers had high levels ($\exp(B) = 1.434$ and 1.969

respectively). All three associations were significant at the 0.01 level. The Ex-migrants had neutral but insignificant (at 0.01 level) competence in relation to hazards. As all four mobility profiles had statistical associations with one or both of the two competence factors, the null hypothesis is rejected.

Hypothesis 4 states there is no significant association between risk-related socio-demographic characteristics and mobility profiles. Age, gender and education are significantly associated for Ex-migrants and Stayers; age and education for Roamers; and age with Aspirers. As at least one of the three measures is significant for all four types of mobility, the null hypothesis is rejected.

In summary, principal components analysis provided a partial solution to identifying a set of independent variables which were utilised in logistic regression to analyse the risk-related determinants of each of four types of mobility profiles. These analyses found statistically significant associations with three types of mobility, but not with Aspirers. R^2 values were reasonable to moderate, accounting for 13% to 36% of the total variance, according to the measure used, in respect of three types of mobility. It was substantially lower– although still statistically significant – for Ex-migrants. Based on the significance test values for the independent variables, all four null hypotheses were rejected.

5. Discussion

The survey provides a reminder that, even in the age of globalization and enhanced mobility, most people (83.5%) have never lived for a substantial period of time (6 months in this instance) outside their country of birth. Stayers, who also had no intention to migrate, accounted for almost two thirds of the total sample, while Aspirers accounted for 21.3%. As intentions to migrate involve different degrees of commitments, they will not necessarily become migrants in future, as reflected in their labelling as Aspirers. Approximately one sixth of the sample had previously been migrants (16.5 %) and most of these (9.7%), the Roamers, intended to migrate again. The greater intention of past migrants than of non-migrants to migrate in future is hardly surprising for two possible

reasons: the continuing importance of the factors that first made them migrate, and or the acquisition of competences and experiences as a result of this. Our cross-sectional data set does not permit testing of the relative importance of these competing arguments, although we do reflect further on these at the end of this section: instead, we focus on discussing their characteristics at the time of the survey.

The first and, in some ways, the most important research finding is that the regressions demonstrate there are significant overall associations between a range of risk measures and three of the four mobility profiles, the exception being the Aspirers (although they do not have the lowest R^2 value). The same general picture emerges if the relationships between the four mobility profiles and the full set of *original* independent variables are analysed using backward linear regression; therefore, this is not the outcome of the data transformation via factor analysis. There is no obvious reason for Aspirers being the exceptional group although, possibly, this reflects a lack of realism in their migration intentions given lack of previous migration experience.

The highest levels of explanation were observed for the two polar groups. Roamers (Nagelkerke 0.267) and Stayers (0.359). This may stem from the relative consistency of their past and future mobilities, especially compared to the Aspirers. The low but significant levels of explanation for Ex-migrants, may reflect the likely diversity of their migration experiences: for example, they could be involuntary migrants to the UK, labour migrants, or return migrants. The overall distribution, significance and directions of the associations with the independent variables are highly consistent with our conceptualization based on willingness to take risks (Table 2). In the following discussion, all significance levels are at the 0.00 level, unless otherwise stated; we also draw selectively on individual Wald scores to illustrate our arguments.

Roamers are more likely to be younger, male and better educated, with education being the strongest predictor for this mobility group. Being more educated may equip them both with more opportunities for international mobility, whether in terms of qualifications, meeting points based visa requirements, or enhanced general competence and knowledge.

They are generally very risk tolerant, especially of mobility risks. They are strongly unlikely to be deterred by migration deterrents, by mobility deterrents, or foreign country deterrents, such as culture and climate. They are also more likely to be tolerant of everyday risks, and to positively value the allure of migration, which includes novelty seeking. They are more willing to gamble on risk and uncertainty. Roamers also consider they have relatively high levels of expertise in travel hazards, and travel competences, with the latter being one of the two strongest predictors for this group. This is the group where education and knowledge comes through most strongly in terms of engaging with risk.

Ex-migrants are likely to be especially heterogeneous in terms of migration experience, and this was reflected in a relatively low R^2 . However, the final regression model is characterised by mostly consistent and interpretable b coefficients, although at lower significance levels and with lower Wald scores than for the other mobility types. Returnees tend to be older than average, as expected. They are also more likely to be women than men, but there is no obvious reason for this, other than for mobility being constrained by the gendered division of family and caring responsibilities. They are slightly more likely to be better educated, although only at the 0.1 significance level. Their diversity is also evident in their risk tolerance. They tend not to be deterred by mobility deterrents, or by migration deterrents (the latter only at 0.1 level). In terms of general risks, they are more willing to gamble on both risky and uncertain bets (0.05 level), and consider that their friends perceive them as more risk tolerant. They are more likely to be positive about foreign country allurements (0.1 level). There is no association with willingness to take everyday risks, perhaps another sign of their heterogeneity. They consider that they have higher levels of expertise in travel hazards, but no significant association with travel competences. This suggests a group who understand the risks of mobility, but are relatively mixed in their self-perceived competence to manage these. In summary, although a difficult group to interpret, the three strongest Wald scores indicate that they tend to be older and to be women (groups known to be more risk averse), and to have perceived knowledge of travel hazards (Wald scores of 27.02, 18.73 and 32.42, respectively), which perhaps contributes to their intentions not to migrate again.

The Aspirers are a reasonably distinctive group, have higher significance levels than Ex-migrants, but have significant associations with less independent variables than any other group. Their stand out characteristic is their young age (very high Wald value, 218.82), but they have no significant association with education (partly because, being the youngest cohort, they are more likely still to be in education) or gender. This suggests a group of young individuals with aspirations for international experiences, whether temporary or more permanent migrations, or gap years versus occupational mobility. Not surprisingly, given their age, they tend to be strongly tolerant of general and mobility specific risks. They are highly unlikely to be deterred by migration risks (very high Wald score 152.98), such as those to family and friendship ties, or health risks. They are also less to likely to be deterred by foreign country deterrents, and to be positive about foreign country allures, such as better jobs and novelty seeking. They are also more tolerant of everyday risks. In terms of competence, they do not have a significant association with expertise in travel hazards – which is consistent with their relatively young ages. However, they are more likely to consider that they have better travel competence than their friends, which may indicate overconfidence (discussed below). In summary, this group has three very strong and significant associations which suggest that they are likely to be young, little influenced by migration deterrents, and confident of their travel competence. They are Aspirers who would like to live or travel abroad, and see few obstacles to this; whether they will realise these dreams is an issue for further research.

Stayers are the largest and most distinctive of the four mobility profiles, recording the highest R^2 . Their characteristics are consistent, and contrast markedly with the Roamers and Aspirers. Demographically, they are likely to be older (high Wald score 143.40), less educated, and women (although only at the 0.1 level. These characteristics are known to be associated with risk aversion. Stayers have low risk tolerance, evident for every type of measurement, including both general and mobility-specific risks. They are strongly deterred by migration deterrents (extremely high Wald score 339.24), foreign country deterrents and mobility deterrents, while not being attracted by foreign country allurements. They also demonstrate general trait risk aversion in terms of everyday risks,

and gambling on risk and uncertainty. Their friends are considered to perceive them as being risk averse. The evidence is even stronger in respect of competences: they have a very strong negative association with travel competence and expertise in travel hazards. In summary, the strongest associations of the Stayers are with being relatively older, being risk averse especially in regards to migration deterrents, and having less competence to manage risks. There are many reasons why they may not have migrated in the past or wish to migrate in future, but there is clear evidence of the importance of risk tolerance and competence to manage risks.

Given the limits of cross sectional data, this paper has focussed on analysing statistical associations not causality, but we briefly reflect on the latter. The central issue is whether migrants are self-selected because they are more risk-tolerant, or whether migration experience impacts on risk-tolerance? This paper provides some limited insights into this question, within the constraints of cross sectional data. Our conceptual frame assumes that migration is influenced by three types of risk-taking: (a) 'pure risk' taking, (b) domain-specific perceptions of risks associated with mobility and (c) competence-based risk taking. Arguably, 'pure risk' taking (expressed in gambling attitudes) has a deep psychological origin and be at least partially independent from environmental influences. Research in psychology and neuroscience indicates there is a relation between personality and risk-taking across different risk domains. Zuckerman and Kuhlman (2000: 1024) suggested that 'the personality traits associated with risk-taking have a moderate to strong heritability and the environmental influences are mostly not of the shared family environment type'. An increasing number of studies have found relatively high impacts of genetics on economic risk-taking (Cesarini et al. 2010; Kuhnén and Chiao 2009; Zyphur et al. 2009). There is also some evidence that genetic factors may impact on novelty-seeking and migration behaviour (Chen et al. 1999, Mathews and Butler 2010). This paper found that 'pure risk' attitudes (Factor 7) were strongly and positively related to being a Roamer and negatively to being a Stayer (both significant at 0.000), after controlling for other variables, including age, education, and gender. Based on the published literature, it can be argued that, in respect of 'pure risk' attitudes, causality probably runs from risk-taking to migration.

There is a lack of similar evidence to draw on in respect of domain specific risks and competence based risk taking. Nevertheless, we have observed that Ex-migrants and Roamers have real experience of migration, while Stayers do not, and this may hint that causality may run from migration experience to (perceived) expertise and not vice versa. However, perceived expertise may be informed with overconfidence, the tendency for people to be more confident than correct in their judgments. Overconfidence can also result in higher risk-taking. There is evidence that overconfidence is impacted by gender, age and education. Males tend to more overconfident than females (Barber and Odean 2001), younger people more than older ones (Deery 1999), and experts more than non-experts (Deaves et al. 2010). Our question about expertise in travel hazards provides some evidence on this point in relation to migration (Table 3). The survey participants estimated the shares of particular type of assistance provided by the British consular service abroad (Foreign and Commonwealth Office 2011). They vastly (a) overestimated the importance of assistance provided in case of arrests, deaths and hospitalisation, and (b) underestimated the importance of assistance with lost/stolen passports and other issues .

INSERT TABLE 3 ABOUT HERE

The Roamers claimed the highest expertise in respect of a range of travel hazards (Q1a-e, Appendix Table A). They were most likely to have real expertise and, or to be overconfident in their competences. The Roamers sometimes erred slightly less than non-Roamers, but their judgements were far from being realistic. As for their confidence levels (measured on a 1-9 Likert scale), Roamers consistently claimed greater expertise than non-Roamers (all t tests significant at 0.000). They were also willing to bet twice as much as non-Roamers on the accuracy of their judgement (all significant at 0.000). As differences in betting on the accuracy of judgement were much lower than the differences in perceived competence, we consider the Roamers more overconfident than non-Roamers. Was overconfidence the reason for higher risk-taking by Roamers? A correlation analysis for perceived competence and willingness to bet on judgement

accuracy (Table 3) found medium-weak correlations (0.257-0.344) for both Roamers and non-Roamers. Perceived competence is associated with 7-12% of the variance in willingness to bet on accuracy of judgements. The rest of the variance is explained by socio-demographic variables (age in particular) and ‘pure risk’ attitudes, and other unmeasured variables. We therefore conclude that perceived rather than actual competence influences risk-taking attitudes in migration rather than vice versa, although its contribution to decisions about risk-taking in migration is relatively low.

6. Conclusions

This paper has demonstrated that *explicit* analysis of willingness to take risk, long neglected in research on individual migration, can contribute to explaining mobility profiles, defined here in terms of previous behaviour versus future intentions. Conceptually, we have shown that willingness to take risk offer insights into the relationship between migration and risk and that, in some ways, migration can usefully be situated in context of other forms of risky behaviour. This is not the first study of migration within the behavioural economics tradition, but the few existing studies examine migration as part of broader studies of risk, relying on general secondary data sets, and/or relied only on general, not domain specific, measures of risk (Baláž and Williams 2011; Dohmen et al. 2005). In contrast, this research commissioned a large survey drawn from the range of the UK population, and was methodologically innovative in utilising mobility-specific measures of both risk tolerance *and* competence, which drew on the well-tested research instruments of behavioural economics.

Logistic regressions identified significant associations between risk-related measures and three of the four mobility profiles, the exception being the Aspirers. The level of explanation (R^2) was greatest for Stayers – those who have never migrated and do not intend to migrate in future, followed by Roamers, and then Aspirers. The overall level of explanation provided by risk and risk-related competences and motivations is reasonable, or relatively good, compared to many analyses of the determinants of migration (Zaiceva

and Zimmermann 2008; van Dalen and Henkens 2012). The distribution of coefficient values confirmed that there are striking contrasts between the four mobility groups in terms of their socio-demographic characteristics, tolerance of risk (general versus mobility-specific risks) and competence to manage risks.

Although this study was designed to test and explore the application of willingness to take risk concepts to migration studies, and to develop research methods for this purpose, it also has potential policy implications. In providing insights into not only who migrates, and who does not, but also into the intentions of a relatively young group of Aspirers, it can contribute to refining predictions of future migration. Furthermore, the positioning of mobility risks in context of a range of general measures of willingness to take risk, especially everyday risks, provides insights not only into migration decision making, but also into broader health care concerns relating to migration, relating to, such as migrants' attitudes to drinking, driving or smoking. Finally, the insights into perceived competence to manage risks can inform how information about risk is communicated to potential migrants.

This study has limitations relating to the use of aggregate measures of migration and future migration, and to causality. Even with a relatively large sample, we were only able to use dichotomous measures of international migration behaviour and intentions in order to construct the mobility index. This meant we could not differentiate amongst types of migrants who face very different conditions of risk and uncertainty. Further research is needed to examine more detailed categories such as: migration versus return migration, duration and frequency, and regular versus irregular. There is also a need to consider other national contexts outside of the more developed economies. Secondly, there is a need to investigate further the differences between risk and uncertainty. The nature of imperfect knowledge (known versus unknown risks) is important in migration, but could not be analysed in this paper given the factor outcomes. Thirdly, as emphasised in the discussion, the paper is unable directly to inform the debate about causality, particularly whether migration makes individuals more risk tolerant, or migrants are self-selecting in

this respect. These issues need to be investigated through a combination of quantitative panel data and experimental research methods.

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Table 1 Mobility profiles

		Future migration intentions	
		<i>Intending</i>	<i>Not intending</i>
Previous international migration	<i>Migrant</i>	ROAMER 9.7% (N=438)	EX-MIGRANT 6.8% (N=307)
	<i>Non-migrant</i>	ASPIRER 21.3% (N=964)	STAYER 62.2% (2818)

Note: percentages of total sample

Source: authors' survey

Table 2 Logistic regression: Stayers. Aspirers, Ex-migrants and Roamers

Independent	Stayers			Aspirers			Ex-migrants			Roamers		
	B	S.E.	exp(B)	B	S.E.	exp(B)	B	S.E.	exp(B)	B	S.E.	exp(B)
Constant	0.410***	0.147	1.507	-0.237	0.162	0.789	-4.085***	0.261	0.017	-3.713***	0.248	0.024
F1 Expertise in travel hazards	-0.324***	0.036	0.723	0.044	0.037	1.045	0.284***	0.050	1.328	0.352***	0.046	1.422
F2 Mobility deterrents	0.339***	0.037	1.403	-0.039	0.040	0.962	-0.237***	0.059	0.789	-0.454***	0.056	0.635
F3 Travel competences	-0.603***	0.040	0.547	0.360***	0.041	1.434	0.053	0.062	1.055	0.678***	0.063	1.969
F4 Migration deterrents	0.713***	0.039	2.041	-0.495***	0.040	0.610	-0.111*	0.060	0.895	-0.608***	0.056	0.544
F5 Foreign country deterrents	0.226***	0.037	1.254	-0.135***	0.040	0.874	0.007	0.061	1.007	-0.279***	0.059	0.756
F6 Willingness to take everyday risks	-0.255***	0.038	0.775	0.124***	0.039	1.132	0.012	0.062	1.013	0.337***	0.053	1.401
F7 Risk and uncertainty	-0.160***	0.035	0.852	0.014	0.037	1.014	0.118**	0.051	1.125	0.210***	0.044	1.234
F8 Foreign country allurement	-0.319***	0.040	0.727	0.220***	0.044	1.247	0.117*	0.063	1.124	0.244***	0.064	1.276
Age	0.316***	0.026	1.372	-0.447***	0.030	0.640	0.226***	0.043	1.253	-0.127***	0.041	0.880
Gender	-0.146*	0.075	0.864	0.080	0.082	1.084	0.550***	0.127	1.734	-0.126	0.114	0.882
Education	-0.251***	0.034	0.778	0.060	0.037	1.062	0.093*	0.055	1.097	0.425***	0.054	1.530
R ² (Cox & Snell; Nagelkerke)	0.264	0.359		0.132	0.205		0.022	0.057		0.125	0.267	
Hosmer-Lemeshow test (ChiSq; df; Sig)	7.293	9	0.505	21.643	8	0.006	7.358	8	0.499	9.509	8	0.301

Notes: Significant at *0.1 level; Significant at **0.05 level; ***Significant at 0.01 level

Source: authors' survey

Table 3: Actual and perceived competence, and risk-taking

Assistance requests, % share	Estimates		Perceived competence		Willingness to bet (£)		Correlation for perceived competence and willingness to bet	
	Roamers	Non- Roamers	Roamers	Non- Roamers-	Roamers	Non- Roamers-	Roamers	Non-Roamers-
Arrests	20.66	20.93	2.20***	1.62	18.93***	10.16	0.299***	0.257***
Deaths	13.23	13.93	2.10***	1.57	19.23***	10.10	0.344**	0.297***
Hospitalisation	22.71**	23.98	2.19***	1.64	20.37***	10.89	0.315***	0.262***
Passports lost/stolen	26.04	25.23	2.24***	1.65	21.01***	11.22	0.271***	0.284***
Other	17.64***	15.93	2.13***	1.56	20.48***	9.99	0.297***	0.286***

Notes:

1. T test significant at **0.05 level; ***Significant at 0.01 level.
2. Actual shares of respective types of assistance were 9.40% for arrests, 9.85% for deaths, 6.19% for hospitalisation, 42.84% for passports lost/stolen and 31.71% for other.

Sources: authors' survey, and Foreign and Commonwealth Office (2011): British Behaviour Abroad Report 2011, available at: <http://www.fco.gov.uk/resources/en/pdf/consular-bba2011> for actual assistance requests

APPENDIX

Distribution of socio-economic variables

Total sample: N = 4528

Gender: female 55.1%; male: 44.9%

Age groups: under 25: 11.3%; 26-35: 16.5%; 35-45: 23.2%; 46-55: 20.0%,
56-65: 17.7%; over 65: 11.3%.

Educational qualifications: none or CGSE: 38.5%; A levels: 26.3%; Degree: 26.3%; Higher degree (e.g. Masters, PhD): 8.9%.

Table A Factor analysis - Rotated Component Matrix

Variables	Component							
	1	2	3	4	5	6	7	8
1a: Perceived expertise on travel arrests abroad	0.876	-0.022	0.035	-0.009	0.035	0.068	0.070	0.038
1b: Perceived expertise on travel deaths abroad	0.889	-0.021	0.025	-0.017	0.038	0.060	0.088	0.026
1c: Perceived expertise on travel related hospitalisation abroad	0.866	-0.018	0.042	-0.007	0.014	0.040	0.060	0.028
1d: Perceived expertise on passport theft abroad	0.865	-0.017	0.037	0.000	0.011	0.056	0.076	0.032
1e: Perceived other expertise about travelling abroad	0.866	-0.035	0.007	-0.007	0.047	0.031	0.088	0.029
1f: Perceived expertise on air travel safety	0.686	-0.025	0.174	-0.003	0.034	-0.007	-0.018	0.018
1g: Perceived expertise on bicycle safety	0.738	-0.021	0.082	0.019	0.027	0.031	0.011	0.005
1h: Perceived expertise on motorcycle safety	0.771	-0.019	0.108	0.011	0.047	0.056	0.016	-0.020
2a: Poor hygiene as deterrent to travel	-0.032	0.823	-0.051	0.135	0.081	-0.033	-0.001	-0.010
2b: Health concerns as deterrent to travel	-0.016	0.838	-0.025	0.159	0.050	-0.048	-0.001	-0.006
2c: Weather as deterrent to travel	0.042	0.439	-0.032	-0.030	0.472	0.064	0.016	0.188
2d: Crime/terrorism as deterrent to travel	-0.044	0.823	0.030	0.183	0.022	-0.018	-0.057	0.006
2e: Poor accommodation as deterrent to travel	-0.038	0.799	-0.027	0.112	0.127	-0.037	-0.023	0.008
2f: Political unrest as deterrent to travel	-0.072	0.786	0.036	0.117	0.036	-0.054	-0.094	-0.030
2g: Local customs/religion as deterrent to travel	0.071	0.361	-0.121	-0.024	0.650	0.042	0.056	0.056
2h: Natural disasters as deterrent to travel	0.012	0.656	-0.065	0.093	0.309	-0.074	-0.026	0.063
3a: Adapt more flexibly to new situations than friends	0.076	0.025	0.810	0.052	-0.069	0.080	-0.004	0.030
3b: Manage own problems better than friends	0.051	0.114	0.741	0.136	0.021	-0.015	-0.015	-0.069
3c: Solve problems related to travelling abroad better than friends	0.114	-0.051	0.800	-0.040	-0.031	0.064	-0.011	0.099
3d: Adapt better to living abroad than friends	0.098	-0.063	0.758	-0.162	-0.097	0.099	0.008	0.237
3e: Willingness to take more risk than friends	0.174	-0.141	0.652	-0.128	0.008	0.271	0.070	0.193
4a: Reason to migrate: higher income / better job	0.014	0.106	0.110	0.265	0.027	0.089	0.006	0.730
4b: Reason to migrate: family/friends living there	0.037	0.073	-0.054	0.651	0.055	-0.067	0.007	0.326
4c: Reason for migrate: novelty seeking	0.082	-0.071	0.285	-0.117	-0.047	0.016	-0.009	0.678
4d: Barrier to migration: different culture/religion/legal system	0.076	0.123	-0.047	0.308	0.721	-0.033	0.004	-0.093
4e: Barrier to migration: different climate	0.071	0.066	0.005	0.230	0.755	-0.059	-0.030	-0.058
4f: Barrier to migration: crime/terrorism	-0.027	0.469	0.088	0.591	0.108	-0.116	-0.051	-0.089
4g: Barrier to migration: health risks	-0.012	0.498	0.063	0.608	0.148	-0.150	-0.043	-0.082
4h: Barrier to migration: weakening ties with family/friends	-0.028	0.171	-0.061	0.742	0.153	-0.010	-0.059	-0.009
4i: Barrier to migration: not suitable for children/family members	0.011	0.174	-0.029	0.739	0.105	0.004	0.009	-0.001
5a: I often drive too fast	0.013	-0.052	0.190	-0.007	-0.046	0.629	0.011	0.062
5b: I often smoke too much	0.038	0.018	-0.037	-0.023	0.008	0.552	0.000	-0.030
5c: I often do risky sports	0.190	-0.206	0.181	-0.103	0.011	0.550	0.159	0.078
5d: I often drink too much	0.040	-0.041	0.071	-0.045	0.001	0.773	0.010	0.021
6a: Ellsberg Q1 Risky gamble	0.133	-0.067	0.032	-0.050	-0.005	0.089	0.915	0.001
6b: Ellsberg Q2 Uncertainty gamble	0.161	-0.090	-0.016	-0.025	0.025	0.037	0.914	-0.003

Notes:

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization

Loadings greater than 0.4 are highlighted in bold font

Table B Factor analysis: total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	6.722	18.672	18.672	6.722	18.672	18.672	5.598	15.551	15.551
2	5.760	16.001	34.673	5.760	16.001	34.673	4.741	13.169	28.719
3	3.173	8.814	43.487	3.173	8.814	43.487	3.116	8.654	37.374
4	1.804	5.011	48.498	1.804	5.011	48.498	2.667	7.407	44.781
5	1.758	4.882	53.380	1.758	4.882	53.380	1.959	5.441	50.222
6	1.410	3.917	57.297	1.410	3.917	57.297	1.794	4.982	55.204
7	1.237	3.436	60.733	1.237	3.436	60.733	1.761	4.892	60.096
8	1.066	2.960	63.693	1.066	2.960	63.693	1.295	3.597	63.693

Extraction Method: Principal Component Analysis. Only factors with eigenvalues higher than 1 shown

Electronic Supplementary Material

The Questionnaire

1 Expertise in travel hazards Many British nationals required consular assistance in 2010. The major needs for assistance are listed below. Please estimate the share of each cause. Imagine there was a prize of £100 pounds if your answer is within 10% (above or below) of the real figure in each case, but you get nothing if your guess is incorrect. The total must add up to 100%. Please, rate your knowledge on each topic on a scale of 1 'none'9 'expert'.

Type of claim	Share	My knowledge on scale 1 'none'	9 'expert'	If the potential win is £100, I am willing to bet
a) Arrests	%	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐		£____
b) Deaths	%	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐		£____
c) Hospitalisation	%	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐		£____
d) Passports lost/stolen	%	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐		£____
e) Other assistance	%	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐		£____
Total	100%			

There are 3 deaths per one billion kilometres travelled by car. What is your estimate of the number of deaths for air, bicycle and motorcycle travel. Please, rate your knowledge on the topic on the scale of 1 'none'9 'expert'.

Deaths per billion kilometres	No. of deaths	My knowledge on scale 1 'none'	9 'expert'
f) air		1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐	
g) bicycle		1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐	
h) motorcycle		1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐	

2 Mobility deterrents There may be specific risks when travelling to some foreign countries. Please tell us how important these risks would be in deterring you from travelling there? *Please tick each line.*

	This factor would deter me								
	1. Absolutely not.....9 Absolutely yes								
a) Poor hygiene	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐
b) Health concerns	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐
c) Weather	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐
d) Crime/ terrorism	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐
e) Poor accommodation	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐
f) Political unrest	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐
g) Local customs/religion	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐
h) Natural disasters	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐

3 Travel competences Please compare yourself to your best friends and rate your abilities on a scale from 0 to 9 (please tick each sentence)

	1= certainly not					certainly yes = 9			
a) adapt more flexibly to new situations than my friends	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐
b) I manage my problems better than my friends	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐
c) I am able solve problems related to travelling abroad better than my friends	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐
d) I would adapt better to living abroad than my friends	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐
e) I am willing to take more risk than my friends	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐

4 Migration deterrents, foreign country allures and foreign country deterrents Please evaluate the following as motives for you to stay in the UK versus living/working abroad? (tick each one of the motives, A-I, on a scale of 1 to 9)

	1. Absolutely unimportant 9 Absolutely important								
Motives to go									
a) Higher income / better job	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐
b) Family/friends living there	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐
c) Novelty seeking: new people, countries, cultures	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐
Motives not to go									
d) Different culture/religion/legal system	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐
e) Different climate	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐
f). Crime, terrorism	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐
g) Health risks	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐
h). Weakening ties with family/friends	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐
i). Not suitable for children/family members	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐

5 How do you rate your willingness to take risks in other areas of your life? *Please indicate for each statement on a scale 1 = absolutely not, 9 = absolutely yes*

	1. Absolutely not					9 Absolutely yes				
a) I often drive too fast	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	
b) I often smoke too much	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	
c) I often do risky sports	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	
d) I often drink too much	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	

6 Please play this lottery game to help us understand your attitudes to betting

a)

There are 50 yellow and 50 green balls in this box. A ball is drawn from the box. You can bet on it being yellow or green. If your bet is right you win £100, if wrong you win nothing. How much are you willing to bet on this lottery?

I am ready to bet £__

b)

In this box, there are 100 balls, some are yellow, some green, but you do not know the proportions – it could be anything between 0 and 100 of each colour. A ball is drawn from the bag. You can bet on it being yellow or green. If your bet is right you win £100, if wrong you win nothing. How much are you willing to bet on this lottery?

I am ready to bet £__

Dependent variable: Actual migration Please tell us about your migration movements in the last 10 years. This is about moving between cities, regions or country of residence, and not about moving house locally (*tick one only*):

	I decided this	I followed family or had no choice
I did not change my permanent place of residence in the last 10 years	☐	☐
I changed at least once my permanent place of residence in the UK	☐	☐
I lived/worked abroad for more than 6 months	☐	☐

Dependent variable: Intended migration Please tell us about your intentions to live or work abroad in future (*tick one only*):

☐ I have never considered this

☐ I considered this but dropped the idea

☐ I am considering this but have not yet made any arrangements

☐ I am firmly determined to do so and have already made arrangements (e.g. looking for information on jobs, housing abroad, applying for visa)