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TOURISM, RISK TOLERANCE AND COMPETENCES: TRAVEL ORGANIZATION AND TOURISM HAZARDS

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Tourism, risk tolerance and competences: travel organization and tourism hazards

Abstract

Research on how individual tourists respond to risk has largely focussed on risk perceptions. This paper draws on behavioural economics to analyse the influence of risk tolerance and risk-related competences on how tourists organize their tourism travel, and the importance that they ascribe to specific types of tourism hazards. Whereas most tourism research on risk has been based on small, or highly age-specific surveys, or particular market segments, this paper utilises an innovative, large-scale survey drawn from the range of the UK population. There were significant differences between package tourists and individual 'drifter' tourists in terms of their socio-demographic characteristics, general and tourism-specific risk tolerance, and competence - both real and illusory - to manage risk. Age, and tolerance of both general and tourism-specific risks, were associated with the importance of hazards as deterrents to tourist behaviour, but the evidence for competences was mixed.

1. Introduction

Risks in tourism stem from two main sources: a lack of knowledge about the tourism destination especially compared to usual place of residence, and lack of knowledge of future conditions, ranging from the weather to extreme natural or societal hazards (Chang, 2009). The intangibility, inseparability, heterogeneity and perishability of tourism products make it particularly difficult to assess risks (Mitchell & Grottel, 1993), and the importance of this is amplified by the significance of tourism expenditure in overall household budgets (Roehl & Fesenmaier, 1992). The limited experiences of many tourists, the complexity of decision making, and infrequency of purchases are compounding factors in respect of risk.

While travel and tourism have always involved risk, there has been an increasing awareness of risks associated with natural and societal-originating disasters, ranging from tsunamis and earthquakes to avian flu and terrorism (Lo, Cheung & Law, 2011; Dolnicar, 2005). This has sparked increased research on tourism risks as documented by Kozak, Crofts and Law (2007) and Simpson and Sigua (2008). Yet, Dwyer and

Sheldon (2006) could still argue, comparatively recently, for greater clarity and precision in the use of terms such as risk, while Kozak, Crofts, and Law (2007) argued for stronger conceptualization of psychological personality in research on risk. We respond to both these calls, and aim to make an original contribution by demonstrating the value of the Nobel Prize winning research of the behavioural economists (see Tversky & Kahneman, 1974; Kahneman & Tversky, 1979).

Although the work of the behavioural economists is referred to by some tourism researchers (Gray & Wilson, 2009; Money & Crofts, 2003; Silva, Reis & Correia, 2010), there has been limited substantive engagement with this theoretical approach. The paper addresses this deficit by drawing on key behavioural perspectives on risk that have particular application to tourism. These are, first, the distinction between general versus tourism-specific risk tolerance/aversion, which poses questions about whether tourism behaviour is subject to general or domain specific risk determinants. Second, the difference between risk and uncertainty, that is the difference between known and unknown risks (Knight, 1921), a key issue in respect of the imperfect knowledge that informs tourism decision making. Third, how self perceived competence/knowledge to manage risks influences attitudes and behaviour – both general competences to resolve challenges and problems, and travel/tourism specific competences. Fourth, the importance of socio-demographic differences in risk tolerance. These conceptual perspectives provide new insights into the determinants of types of tourism travel (especially individual versus package) and how tourists respond to particular hazards. Moreover, they address risk and uncertainty issues which feature increasingly prominently in tourist decision making and behaviour. They also reposition tourism risk in context of a broader literature on risk.

Existing research on tourism risk mostly relies on small and, or highly selective surveys. Sönmez and Graefe's (2008b) sample of 240 usable questionnaires is not untypical, and they acknowledge that this sample size is small and skewed toward international travel. Most research has also been socially selective and has focused on students or young adults, or on sensation-seeking adventure tourism (Gray & Wilson, 2009; Reisenger & Mavondo, 2005). Even Pizam et al's (2004) relatively large sample of 1429 was restricted to students. Although Dolnicar (2005) had two sub samples, tourists using travel agents and students, this was also a highly selective sampling frame. Several

researchers (such as to Slevitch & Sharma, 2008) have argued for more representative studies, and the paper addresses this gap by analysing a specially commissioned, and relatively broad sample of some 4,500 individuals, drawn from the range of the UK population.

2 Literature review

Research on tourism risks tends to focus on risky behaviour as constituting 'any purposive activity that entails novelty or danger sufficient to create anxiety in most people' (Levinson, 1990: 1073). For Reisinger and Mavondo (2005: 212) risk involves 'exposure to the chance of injury or loss, a hazard or dangerous chance'. This contrasts with the behavioural economists, for whom risk indicates a non-deterministic outcome, with either positive or negative consequences. The latter perspective is only recognized by a few tourism researchers with Pizam et al (2004: 252), for example, proposing that risk-taking is 'any consciously, or non-consciously controlled behaviour with a perceived uncertainty about its outcome'.

Risk and uncertainty are complex concepts, but involve two main perspectives that are important for this paper: attitudes to risk and risk perception. Kahneman, Tversky and associates have focused more on risk attitudes, in particular tolerance versus aversion to risk and uncertainty. In contrast, tourism researchers have focussed more on perceptions, or how predetermined ideas influence the willingness of tourists to accept particular - negatively defined - risks (Silva, Reis, & Correia, 2010: 334). Individual researchers have been especially concerned with analysing different types of risks (Lepp & Gibson, 2008; Roehl & Fesenmaier, 1992; Sönmez & Graefe, 1998a) and, or how perceptions of these affect the choices made by tourists (Sönmez & Graefe, 1998b; Wong & Yeh, 2009). Sensation seeking, especially in relation to adventure tourism (Pizam et al 2004), has also attracted considerable research attention, particularly the contrast between this and risk seeking. In contrast, drawing on the behavioural economists, this paper focuses on attitudes to risk, and competence to manage risks, applying these to understanding, firstly, responses to perceived tourism hazards and, secondly, preferences for different forms of tourism organization. We review below the approaches of tourism researchers to these topics.

First, tourism researchers have been particularly interested in individual perceptions of specific types of hazards, and in evaluating their influence on tourist decision making, often in relation to specific destinations, or after specific events such as a tsunami or terrorist act. This work draws on the wider consumer behaviour literature which has identified seven main types of risk (Schiffman & Kanuk, 1991): financial, functional or performance, physical, social, psychological, satisfaction and time. Pioneer research by Cheron & Ritchie (1982), Roehl & Fesenmeier (1992) and others drew on such models to identify similar forms of risk in tourism and travel contexts. The classification of types of risks has been revised and refined over time, with Sönmez & Graefe (1998a), for example, summarizing these in terms of four main types of risk in tourism: financial, psychological, satisfaction, and time risks. Reflecting changes in both the external environment, and the related evolution of research agendas, the same authors have also identified other risks associated with travelling, notably health, political instability and terrorism (Sönmez & Graefe 1998a, 1998b). As would be expected, more recent research (Floyd, Gibson, Pennington-Gray, & Thapa, 2004; Lepp & Gibson, 2003) indicates that the most important concerns for tourists relate to safety and security (Poon & Adams, 2000), highlighting four main risk factors: war and political instability, health, crime and terrorism. Unsurprisingly, tourists' responses to natural disasters have also attracted significant attention from researchers in recent years (Lo, Cheung, & Law, 2011).

Researchers have also analysed the relationships between individual perceptions of risk and tourist decision making. Arguably, this is a long overdue response to the relative neglect of travel inhibitors compared to travel motivators (Quintal, Lee, & Soutar, 2010). In broad terms, perceptions of risk influence both the destinations that individuals choose not to visit, and those that they consider safe destinations (Silva, Reis, & Correia, 2010). The risks associated with potential terrorism and political stability have been especially influential in deterring tourists from travelling, whether generally, or to particular destinations (Sönmez & Graefe, 1998a). A particularly useful, and relatively neglected study in this area has been the work of Larsen, Brun, W. and Øgaard (2009) on tourists' worries; they not only identify their particular concerns, and associations between risk perceptions and a tourist worry scale, but also how these differ between the planning, and the actual holiday stage. They conclude that there is a need for tourism

researchers to link to more generic research on risk judgements and affective states, which resonates in part with the call in this paper to engage with generic behavioural economics research; while they focus on worry, we focus on risk tolerance and competences.

Taking a slightly different perspective, Kozak, Crotts and Law (2007) review the contribution of risk perceptions to destination image formation and decisions to visit/avoid particular destinations. They present a largely predictable, but powerful picture: 'those perceiving terrorism as a risk of travelling are likely to avoid the Middle East Visitors have an image of Africa as a continent which is not safe in terms of its health-related risks, e.g. HIV. In addition, both Africa and Asia are perceived to be worse than Europe and Australasia due to health risks stemming from the supply of poor food and water quality'. Within these broad macro regional images, guidebooks constitute a particularly important influence on how destinations are constructed as being risky versus safe places for tourism (Carter, 1998).

The second strand of research considered here, is how different types of tourists perceive and, or respond to risks. Conceptually, this has drawn especially on the literature concerning preferences for novelty versus familiarity. Tourism risk researchers frequently associate this with Cohen's (1972) fourfold typology: organized mass tourists, individual mass tourists, explorers, and drifters. However, in a more exhaustive research paper, Pearce (1982) used multidimensional scaling to demonstrate that tourists could be differentiated in terms of familiarity versus novelty seeking. Yiannakis and Gibson (1992), and Lee and Crompton (1992), used more multi-layered constructs relating to novelty; for example, the latter deconstructed novelty into key components: thrill, change of routine, boredom alleviation, and surprise. The last of these relates to notions of uncertainty, which we return to when considering the behavioural economics perspective. However, although links can be made between the notions of novelty/familiarity and risk and uncertainty, these have mostly been implicit, rather than explicit, in tourism research, with a few exceptions.

In one such exception, Hyde and Lawson (2003) argued that two of the three distinguishing characteristics of independent travellers are being 'willing to take risks in selecting vacation elements' and a preference for 'unplanned experiences' - that is, for

uncertainty. Probably, the most important study is Lepp and Gibson's (2003) which explicitly argued that, in international tourism, the perception of risk is directly related to preferences for familiarity versus novelty. Empirically, they considered how attitudes to specific tourism risks (health, war and political instability, terrorism, strange food, cultural barriers, national politics and religious dogma, and petty crime) varied across Cohen's typology. Most of these factors were perceived to be less risky by novelty seeking tourists, and 'what may be a source of fear for the organized mass tourist may be a source of excitement for the drifter' (p. 617). However, in common with most tourism researchers, they considered perceptions of risk, rather than risk tolerance.

Also relevant here is Lepp and Gibson's (2008) study of the role of previous experiences. In the language of behavioural economics, this is an aspect of 'competence' to deal with risk, and it is assumed that increased competence enhances willingness to take risks. However, amongst both organized mass tourists and drifters, in Lepp and Gibson's study, the more experienced tourists were also more likely to consider cultural barriers to be important risks. Acquired competence, or knowledge, seems to have made individuals more not less cautious. In another study, Alvarez and Asugman (2006) identified two groups of tourists, in Turkey, and their 'risk averse planners' were less risk tolerant and more likely to participate in package tours.

There has also been selectively focused research on particular types of tourists. Lo and Lam (2004) found that personal safety (and implicitly risk) was an important determinant of participation in package tourism. However, the main focus has been backpackers, sensation seeking, and adventure tourism, relatively small segments of the total tourism market. For example, Elsrud (2001) demonstrated that both risk and adventure were critical in the construction of backpacker identities. However, backpackers are a diverse group, and while some were drawn to particular destinations because of their associated risks, others were repelled by these.

Turning to adventure tourism, Ewert (1989: 8) defined an adventure as the "deliberate seeking of risk and uncertainty of outcome", while Beedie and Hudson (2003) defined adventure tourism as activities with uncertain outcomes. Recent empirical research, however, suggests that adventure tourism is more concerned with sensation seeking than risk (Cater, 2006). This is particularly true of commercial adventure tourism, where

risks and uncertainties are closely managed, if not eliminated, by intermediaries (Bentley & Page, 2008).

Closer examination reveals that the relationship between sensation seeking and adventure tourism constitutes a tangled knot. Zuckerman (1971) defined sensation seeking in terms of seeking novelty, intense sensations and willingness to take risks as valued experiences. This was explicitly recognized by Pizam et al. (2004) who emphasized that risk perception and sensation seeking are correlated but not identical constructs. Of relevance here, Lepp and Gibson (2003) demonstrated that sensation seekers were more likely to choose explorer and drifter roles, but this was not related to risk perceptions. However, they also showed that explorers and drifters were more likely to have travelled internationally, and to have visited higher risk destinations.

There is, therefore, some evidence of a relationship between risk perception, although not risk tolerance, and Cohen's (1972) typology and the work of Pearce (1992). However, this is mediated by sensation seeking, so the empirical evidence on risk tolerance has been very limited. That is compounded by the selective focus of most research on relatively small samples, or specialised types of tourism. There is also lack of clarity in the literature about causality and whether type of tourist travel is a dependent variable to be explained by risk or an independent variable that can be used to predict differences in risk perceptions.

2.1 Perspectives from behavioural economics

A few tourism researchers acknowledge the fundamental work of Tversky, Kahneman and associates on risk. The most significant are probably Gray and Wilson (2009) who specifically discuss the potential contribution of prospect theory (Tversky & Kahneman, 1979), especially how individuals value losses and gains differently, distortions in the estimates of the probabilities of unlikely events (Tversky & Kahneman, 1992), and the use of heuristics to simplify individual risk calculations. However, their empirical analysis largely departs from these conceptual and methodological frameworks, and instead examines the inter-relationships between types of risk, and how these deter individuals from travelling. Another example is Money and Crofts (2003) who found that those most likely to avoid uncertainty were also likely to go on shorter holidays to fewer destinations,

travelled alone less, and travelled more in organized groups. Such engagements with behavioural economics are sparse and rarely followed through empirically in tourism, which is surprising given the status of this theoretical perspective in social science. Instead, psychographics, focusing on personality characteristics (for example, Reisinger & Mavondo, 2005), usually provide the starting point for much of the research on risk within tourism.

The work of Tversky and Kahneman (1974), and associates, on judgements and decisions under uncertainty was developed in response to the limitations of expected utility theory in explaining individual preferences. Over four decades, a substantial corpus of work has emerged within a framework for studying behaviour in relation to risk, four strands of which are considered here.

First there is the question of whether individuals possess a 'general risk trait' that influences risk taking behaviour in multiple, or even all areas of life, or whether there are domain specific traits in areas such as drinking, driving, and tourism. Behavioural researchers have largely ignored tourism in this respect. For example, while Barsky, Juster, Kimball and Shapiro (1997) found statistically significant correlations between risk-aversion and specific risky behaviours in the USA, such as drinking and lack of health insurance, they did not address tourist behaviour. Similarly, Dohmen, Falk, Huffman, Sunde, Schupp and Wagner (2005) found strong correlations between general risk-tolerance and domain-specific forms of risky behaviour in Germany, such as driving, financial matters, and sports, but also ignored tourism. The overall predictive powers of generic risk tolerance measures were relatively low in most such studies, indicating that although a 'general risk trait' exists, it is variably articulated in different domains, emphasising the need for domain-specific measures of risk tolerance. There has been domain-specific research in tourism, as noted earlier, but it has mostly been theoretically detached from the work of the behavioural economists and notions of general risk traits. This is a surprising omission given the significance of tourism activity at least in more developed economies.

The tourism researchers who came closest to addressing this issue were Pizam et al (2004: 252), questioning 'whether there is a general tendency to engage in risk behaviours, or whether individuals vary in the types of risk behaviour in which they

engage'? But they base this argument on the work of Yates (1992) rather than the behavioural economists, and empirically they turned to psychographics. Within tourism studies, Plog (1973) also addressed this issue, although obliquely, in his well known classification of leisure tourist. Allocentrics, who seek novelty, are adventurous, less anxious and moderate risk takers. In contrast, psychocentrics, prefer the familiar, are non adventurous, and low risk takers. Plog also makes a link between being risk-averse and choosing 'safe' destinations, and being risk seeking and preferring 'risky' destinations, but did not measure risk tolerance directly.

Secondly, one reason for dissimilar behaviours by individuals in different domains of risk may be variability in perceived competence to manage these. For example, an individual who has a high risk tolerance general trait, may participate in risky forms of tourism but be highly unwilling to take risks with his/her personal savings and investments, reflecting different competences (and other factors) in these two domains. Individuals tend to be over-optimistic about their competences: in respect of tourism risks, this involves preferring or selecting positive information and beliefs about a particular destination. Similarly, individuals overestimate their competence compared to their reference groups, usually their friends (Lovallo & Kahneman, 2003; Camerer & Lovallo, 1999) and this is likely to apply to tourism as in other domains.

Although risk-related competences have not been researched in tourism, there is some work on the related concept of tourist knowledge. Tsaur, Yen and Chen (2010), for example, examined how individual tourists harvested particular types of knowledge and skills, but did not directly address risk/uncertainty, or deconstruct the notion of skills into competences. Slevitch and Sharma (2008) did partly address this issue, and demonstrated links between the quality of information available (and uncertainty about this) and perceptions of particular types of risks. Pearce and Foster (2007) examined competences, identifying the skills and attributes that shaped the effective learning capacity of backpackers. There is also research on how prior product knowledge influences tourist search behaviour, with Gursoy (2003) differentiating between expertise and familiarity. Wong and Yeh (2009) give this a particular twist, arguing that although risk perceptions make tourists more hesitant in decision making, tourist knowledge may mediate this effect.

Thirdly, behavioural research has found consistent differences in risk tolerance, in a number of domains, within and between socio-demographic groups (see Barsky, Juster, Kimball, & Shapiro, 1997; Donkers, Melenberg, & van Soest, 2001; Halek & Eisenhauer, 2001) and this is likely to hold for tourism. Indeed, Reisinger and Mavondo (2006), and Simpson and Siguaw (2008) contend there is a relationship between the socio-demographic characteristics of tourists and perceptions of travel risks, but Sönmez and Graefe (1998a) could not confirm these relationships. Key generic findings include:

- A meta-analysis (Byrnes, Miller, & Schaffer, 1999) found that men were more risk tolerant in 14 out of 16 observed types of risk behaviour. Consistent with this, women have been found to be more likely to be concerned about physical risks in tourism (Boksberger, Bieger, & Leasser, 2007).
- Younger people are more risk tolerant than older ones (van Dalen & Henkens, 2012; Hallahan, Faff & McKenzie, 2004). This is substantiated in tourism by Gibson and Yiannakis (2002), although Sönmez and Graefe (1998a) did not find any consistent relationships between age and risk perception. In general, the selective focus of most tourism researchers on particular groups or types of tourists has tended to fragment understanding of this key relationship.
- Risk tolerance tends to increase with education (Halek & Eisenhauer, 2001; Hallahan, Faff & McKenzie, 2004), and this is considered to be related to higher levels of (perceived) competence. Simpson and Siguaw (2008) did find a relationship in tourism, not between education and risk, but between income and perceptions of crime, transportation, and financial risks. However, Sönmez and Graefe (1998a) found that neither variable was a good predictor of risk perceptions, or travel, in respect of terrorism and political instability.
- Mobility experiences. Migrants are generally more risk tolerant than non migrants (Baláž & Williams, 2011) and arguably this spills over into tourism. Knowledge of living abroad, or perceived competence in dealing with problems abroad, may influence willingness to take tourism risks. While the behavioural economists have not addressed tourism risks, there is tourism research on how tourism

experiences influence risk perceptions and destination choice. Mazursky (1989) argued that travel intentions are influenced by the extent and nature of previous travel experiences, and this has largely been substantiated by subsequent research. Hales and Shams (1991) and Lepp and Gibson (2003) found positive relationships between travel experience and preference for riskier destinations, and linked this to Pearce's (1996) notion of the travel career ladder. However, Sönmez and Graefe (1998a, 1998b) found that previous visits to a destination considered risky were associated with greater likelihood of avoiding these in future.

Fourthly, the behavioural economists differentiate between risk and uncertainty, two terms which are often confused in the tourism literature. There are competing conceptualizations of risk and uncertainty (Camerer & Weber, 1992) with modernists drawing on Knight's (1921) distinction between known risks, and uncertainty or unknown risks. Risk involves a range of outcomes, whose probabilities are known (Tversky & Kahneman, 1992). Individuals are considered to prefer risk to uncertainty, the so-called Ellsberg paradox (Ellsberg, 1961), which asserts the power of ambiguity aversion, although there is a debate as to whether this only applies in comparative situations (Fox & Tversky, 1995). As noted earlier, tourism mostly involves uncertainties rather than (known) risks, although these are often blurred by partial knowledge. Tolerance of uncertainty should therefore be a particularly strong predictor of tourism behaviour under particular conditions of uncertainty such as adventure tourism, visiting particular destinations, drifter tourism (Cohen, 1972), or particular forms of novelty seeking (Pearce 1982). However, as tourism decisions are usually informed by *some* knowledge about destinations and types of holidays, they are made in context of a continuum of knowledge, risk and uncertainty. This confusion has led to neglect of uncertainty versus risk in tourism (Quintal, Lee, & Soutar, 2010).

In summary, behavioural approaches have demonstrated in a number of domains, notably health and finance, that risk tolerance is an important determinant of attitudes and behaviour. While it has been established that there are general and domain-specific risk traits, relatively little is known about their role in the tourism domain. Secondly, perceived competence and attitudes to risk are known to be important in explaining individual decision making across different risk domains, but there has been little

systematic evaluation of the role of competences in relation to tourism risk. Thirdly, risk tolerance varies both within and between socio-demographic groups and again there has been limited tourism research specific to risk tolerance, as opposed to risk perceptions. Fourthly, individuals are averse to uncertainty compared to risk, a significant differentiator of the nature of incomplete knowledge in tourism.

3 Methodology

3.1 Model and hypotheses

Drawing on the extensive behavioural economics literature outlined above, this paper analyses the determinants of the willingness to take risk in tourism (Figure 1). The key determinants are considered to be risk tolerance (including general risk traits, domain-specific tourism risk tolerance, and risk versus uncertainty), perceived competence/knowledge to manage risks (both general competences to resolve challenges and problems, and those specific to travel and tourism), and socio-demographic variability in risk tolerance. The model will be tested in relation to two measures of willingness to take risks: types of travel organization, and tourism hazards as deterrents to travelling.

FIGURE 1 ABOUT HERE

The first analysis models the risk and risk-related determinants of different types of travel organization. In this we draw on, but do not strictly seek to replicate, Cohen's (1972) typology of tourists based on familiarity versus novelty seeking. Four categories were operationalized in the questionnaire: these differentiated between two types of package tourism, mass and small scale, and two types of individual tourism seeking comfortable facilities versus staying with local people. Individuals assessed themselves on a 9 point scale for each type. This allows multiple self identification, reflecting the propensity for individuals to participate in different modes of travel organization (Uriely, 2005), and the complexity of social identities.

- a) My preference is for organized package tours to attractive resorts and for comfortable travel and accommodation (package)

- b) I like to buy a package of travel and accommodation from a small or specialist tour company (small package)
- c) I arrange my trip completely by myself and prefer comfortable accommodation and travel (explorer)
- d) I travel completely by myself, have no fixed itinerary and like staying with local people (drifter)

The following null hypotheses will be tested:

- (H1) There is no significant association between risk tolerance and type of travel organization.
- (H2) There is no significant association between perceived competence to manage risks and type of travel organization.
- (H3) There is no significant association between risk-related socio-demographic characteristics and type of travel organization

In the second analysis, we sought to analyse the risk-related determinants of eight types of tourism hazards as deterrents to travelling. The selection of hazards is shaped by the literature review, but especially by Sönmez and Graefe (1998a; 1998b) and Lepp and Gibson (2003): poor hygiene, health concerns, weather, crime/terrorism, poor accommodation, political unrest, local customs/religion, and natural disasters. Three further hypotheses will be tested:

- (H4) There is no significant association between risk tolerance and travel deterrence related to tourism hazards.
- (H5) There is no significant association between perceived competence to manage risks and travel deterrence related to tourism hazards.
- (H6) There is no significant association between risk-related socio-demographic characteristics and travel deterrence related to tourism hazards.

3.2 Data collection and variables

In order to obtain a sample drawn from the range of the UK population, rather than particular age, occupational or market segments, the authors commissioned an online survey of individuals aged 18 and over who lived in the UK. The survey was undertaken by market research organization, *Shape the Future*

(<http://www.themarketresearchcompany.co.uk>) which utilises a large panel of regular survey respondents. The questionnaire was made available online to the survey company's panel for 10 days. After data checking and cleaning, this produced a final sample of 4528. The sample over-represents the UK population in terms of women (55.1%) and education (35.2% had a degree or higher degree), and under-represents older people (only 11.3% aged over 65). It is also known that participation in online surveys is selective (Yun & Trumbo, 2000) being mediated by IT access, resources, and attitudes to survey participation. However, there is no reason to believe such selectivity is related to attitudes to risk, or tourism intentions and behaviour. Moreover, representativeness is not essential to our analysis because the analyses focus on differences between sub-samples rather than producing estimates for the UK population.

34 potential explanatory variables were utilised to operationalize the determinants of willingness to take tourism risks (see Appendix).

The socio-demographic variables are standard measures of age, gender, education, occupation and migration, all of which are related to willingness to take risk. There are three measures of migration, reflecting the links between these and tourism, especially in terms of experience and knowledge (Williams & Hall, 2002): past internal and international migration, and future international migration. The questions on attitudes to risk are mostly standard risk tolerance/aversion questions drawn from research by Kahneman and Tversky (1979), Barsky, Juster, Kimball and Shapiro, (1997) and Dohmen, Falk, Huffman, Sunde, Schupp and Wagner (2005), while adding new questions about tourism and mobility experiences. Some gambling questions are included, being standard measures in behavioural economics for measuring attitudes to risk and uncertainty in a pure chance (i.e. competence free) environment. All attitudinal variables are based on nine point scales.

Finally, self-assessed competences include both general and travel specific questions. The former include assessments of how friends view their propensity to take risk, and their own assessments of their willingness to take risks, to adapt flexibly to new situations, and to manage their problems better than their friends. There are two travel specific measures – adapting better to living abroad, and being able to solve their problems when travelling abroad better than their friends. Additionally, there are three

more 'objective' measures of 'knowledge' and experience: networking with those who live or have lived abroad (knowledge resource), travel frequency in last 10 years, and number of countries visited outside of Europe. These competence measures were based on, or involved adaptation to tourism risks, of the work of Svenson (1981), Alicke and Govorunl (2005), and Lovallo and Kahneman (2003).

3.3 Measurement and analysis

The analyses do not aim to explain the totality of the differences in intentions and behaviour between travel types, as these are complex social constructs influenced by a range of factors, such as experience, access to travel, family circumstances, health, and personal attributes. Instead, the aim is to demonstrate that a range of risk-related attributes significantly influence how individuals respond to tourism risks. R^2 values are not, therefore, necessarily expected to be very high. Given the exploratory nature of this application of behavioural economics to tourism risk, we start with a long list of independent variables, and backward linear regression is employed to eliminate variables that are not statistically significant.

Backward linear regression decreases potential problems with multicollinearity arising from the use of related questions in the questionnaire. All the independent variables are considered before removing those that are insignificant and which may also contribute to multicollinearity. High probability F-entry and F-removal thresholds (0.01) were utilised. For example, for package travel organization, the R^2 was 0.132 when using the enter (all) method and 0.121 when using the backward method. The decrease in the explanation power of about 1 percentage point was reflected in low values of the variance inflation factors (lower than 2 for all retained predictor variables).

In linear regression, ordinal variables can be used providing there are no large violations of intervalness. Nine point Likert scales were used for most variables, including the dependent variables, which provide acceptable proxies of continuous variables. Ordinal variables with fewer categories were utilised for age and education, and these were approximately equally spaced so that there was no need to rely on dummy variables.

The validity of the measures is based on their derivation from the extensive body of research in behavioural economics referenced in section 3.2, which is based on very large scale surveys, drawn especially from the USA's Health and Retirement Study and Survey of Consumer Finance (e.g. Barsky, Juster, Kimball & Shapiro, 1997) and German Socio-Economic Panel data (e.g. Dohmen et al, 2005). Questions have been developed and tested over time by a community of behaviouralist researchers. In terms of reliability, the internal consistency of the constructs was tested using Cronbach Alpha statistics. High scores over 0.8 (considered good for this measure) were recorded for most of the key variables, such as combined measures of risk hazards (0.88) and perceived competences (0.839) (Gliem & Gliem, 2003). The measures of risk tolerance are very diverse (ranging from, say, driving to uncertainty bets) and can not reasonably be combined in a single construct for testing purposes.

4 Analysis

4.1 Types of tourism travel, risks and competences

Linear regression was used to examine the relationships between four different types of tourism travel and risk related independent variables: all four dependents were approximately normally distributed. Each constituted a separate dependent variable, rather than using a single dependent measure, in recognition that individuals have multiple identifications as tourists (Uriely, 2005) rather than forcing them to identify with a single type. Table 1 supports the importance of this approach. More than 30% of those who strongly identified themselves as package tourists also identified strongly as small package or explorer tourists, and 47% of those who identified themselves as small package tourists also strongly identified with explore tourists. The self identification of these categories was weaker with drifter tourists, ranging from 8.4% for package tourists to 20% for explorer tourist. The contrast between package tourists and drifter tourists, and the distinctiveness of the latter are recurring themes in the following analysis.

TABLE 1 HERE

Backward linear regression was used in order only to include highly significant variables (0.01 level) and to minimise Type II error. The final models included between 10 and 14 variables. The overall explanatory power of the models was relatively low. Risk-related variables only explain a small part of the variance in all four tourist types, with R^2 values ranging between 0.063 and 0.166 (see Table 2). However, these were all highly significant at the 0.01 levels. The highest R^2 values were at the opposite end of the tourism spectrum: package tourists to attractive destinations with comfortable accommodation and travel, and drifters who organized their own travel, had no fixed itinerary and prefer staying with local people.

TABLE 2

Comparing the four models, risk-related measures are significantly associated with individuals' self-assessments as types of tourists, although only contributing a small part of the total explanation of these complex types. There were however some, not always easily explained, differences within and between the package and individual tourist categories. The highest R^2 values were in the two polar types, package tourists, and drifters, so that the strongest and most consistent differences were evident when comparing these. These were also the groups with the lowest degree of overlap in terms of self identification (Table 1).

In terms of the independent variables, package tourists were more likely to be aged 18-45 (and to have young children), be less educated, less likely to have lived or worked abroad, and were more willing to take everyday risks in respect of driving and drinking. They were also more deterred from travelling by particular tourism hazards, especially the weather and poor accommodation but also by poor hygiene. They were generally less confident about their general competences to deal with risks and the challenges of being abroad, other than in solving travel problems. In contrast, individual explorer tourists are more likely to be aged 35-65, more educated, and more likely to be intending to live or work abroad in future. In addition, drifters are more likely to be risk-tolerant men who have lived or worked abroad for periods of more than 6 months. Individual tourists are also more likely to be willing to take risks in relation to jobs or their finances, and/or to participate in risky sports. They are not, however, positively and significantly more likely to tolerate uncertainty. But they are less likely to be deterred by particular hazards,

while drifters are less likely to be deterred by poor accommodation. This greater tolerance of risks is also associated with greater competence to manage risks and challenges, and having more international experience and networks to draw support from.

The null hypothesis H1, that there is no significant association between risk tolerance and type of travel organization, is rejected with four to seven measures from this cluster of independent variables being highly significant and included in the final models. Hypothesis H2, that there is no significant association between perceived competence to manage risks and type of travel organization, is rejected with between one and five measures being highly significant and included in the final models. In the case of package tourists, only variable (solving travel problems abroad) was significant. Finally, H3, that there is no significant association between risk-related socio-demographic characteristics and type of travel organization, was also rejected with two to four variables being highly significant and included in the final models.

4.2 Analysis: Tourism hazards, risk and competences

Factor analysis was used to reduce the 8 tourism hazards to a smaller number of dependent variables (Table 3). This identified two underlying factors, which explained 68.5% of the total variance. The first component explained 46.0% and the second explained 22.6% of total variance. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy statistic was reassuringly high (0.862) and the Bartlett's test of sphericity was highly significant (0.000), confirming the model was appropriate and significant.

TABLE 3 HERE

Varimax rotation produced two factors. Factor One has high component loadings on poor hygiene, health concerns, crime/terrorism, poor accommodation and political unrest, and is interpreted as 'General travel hazards'. These are understood as being generally more manageable by the tourist, for example in seeking advice on inoculations, accommodation and the loci of crime. Factor Two has strong loadings on local customs/religion, weather, and natural hazards and is interpreted as 'Foreign

country hazards'. These are understood as being less manageable, it being difficult to avoid many forms of highly uncertain natural hazards such as earthquakes, or to avoid contact entirely with a national culture seen as 'other', or different.

Backward linear regression models were computed to identify the relationships between the two factors and the independent variables (Table 4). Only highly significant variables (at the 0.01 level) were included in the final model. The regression analyses produced an R^2 value of 0.225 ($F= 93,817$, $Sig = 0.000$) for general travel hazards, but only of 0.069 ($F=33,322$, $Sig = 0.000$) for foreign country hazards. Both were highly significant although only a small proportion of the variance (7 percent) in the second factor is explained.

TABLE 4 HERE

The final models provide broad evidence of significant associations between socio-demographic, risk tolerance and competence/knowledge measures, and the two hazard factors. The null hypothesis, H4, that there is no significant association between risk tolerance and travel deterrence related to tourism hazards, is rejected for both types of hazards. Five of the independent variables are significantly associated with the general hazards factor, and three with foreign country hazards. Hypothesis H5, that there is no significant association between perceived competence to manage risks and travel deterrence related to tourism hazards, is also rejected for both models. Six of the independent variables are significantly associated with general hazards, and five with foreign country hazards. Finally, hypothesis H6, that there is no significant association between risk-related socio-demographic characteristics and travel deterrence related to tourism hazards, is rejected for both models. Gender, age and international migration experience are significantly associated with general hazards, and education and age with foreign country hazards.

5 Discussion

For travel organization, the biggest contrast in the associations with independent variables is to be found between drifter and package. This is not surprising given there is the strongest differentiation between these two types in terms of self identification (Table

1). Individual tourists were expected to be more willing to take risks, especially the drifters who preferred local facilities (Table 2). The overall findings were generally similar for the two types of individual tourists. Explorers were significantly more willing to take financial risks, which may also be related to this being the group with the highest representation of socio-economic groups A and B, who probably had most money available while explorers and drifters were more willing to take smoking risks. Drifters were more willing to participate in risky sports, and were less loss averse in terms of gambling (coin-flipping) with a chance of losing a large amount of money. They were also the only type of tourist significantly more willing to take risks associated with job changes. Drifters were more likely to prefer accepting a shorter guaranteed holiday to the chance of winning a longer holiday. Perhaps this group has relatively little interest in this particular type of holiday (in the UK or France), preferring more exotic destinations. The other counterintuitive finding is that explorers were significantly less willing to bet under conditions of uncertainty. This may be a reflection that the most educated group decided not to bet on uncertainty, because –compared to other tourists - they better realise the limits of their competence. The lack of significant associations with uncertainty in the other models may reflect Fox and Tversky's (1995) contention that ambiguity aversion is only observable in comparative situations. In general, these overall findings resonate with Lepp & Gibson's (2003) argument that sensation seekers were more likely to choose explorer and drifter roles.

The findings for organized tourists in terms of risk tolerance measures showed that package and small package tourists were more likely to drink too much and the latter were more likely to drive too fast: these are variables for which there were no significant relationships for individual tourists. Risk tolerance and recklessness are not necessarily the same, especially in relation to health and physical danger. However, neither type of package tourists, unlike drifters, was significantly more likely to consider they smoked too much. Other influences on smoking, such as its perceived role in reducing stress, may swamp the influence of risk (Niaura, Shadel, Britt, & Abrams 2002). Also initially puzzling is the significant willingness of small package tourists to participate in risky sports, but this may be due to the role of niche companies in selling adventure tourism. Small package tourists were also more loss tolerant, and there is no obvious explanation for this.

Turning to another aspect of risk, particular hazards as deterrents to travelling, there is a broadly consistent pattern of relationships. Package tourists and small package tourists were most likely to be deterred by tourism-related hazards: weather and poor accommodation were important concerns for both, and this is consistent with relying on tour companies to organize the latter. Poor hygiene was important for package tourists, again a factor that would encourage reliance on intermediaries. Crime and terrorism were important for small package tourists, and this group may be more likely to be travelling in areas considered hazardous which has made them opt for the reassurance of travelling with small, specialist tour companies. In contrast, specific tourism hazards were not significant for individual tourists with two exceptions. Drifters had a negative relationship with accommodation concerns, which is consistent with their preferences for staying with local people. Explorers were more likely to be concerned about natural disasters; while there is no obvious reason for this, we can speculate that it is associated with age, as they have the oldest age profile.

In terms of the relationships with self assessed competences, drifters were the only group significantly more likely to consider that they were better at adapting flexibly to new situations. This is consistent with the very idea of 'drifting' without a fixed itinerary and staying with local people, that is outside the bubble of the tourist resort (Cohen, 1972). This is also consistent with the demands made on individual travellers, even if they prefer comfortable and standardised facilities. Explorers considered they were better at managing their problems, solving travel problems, and adapting to life abroad, than their friends: this may be consistent with being significantly more likely to travel abroad frequently (see below), and possibly to greater propensity to travel for work as a consequence of their higher occupational status. The surprising finding was that package and small package tourists also had positive significant relationships with perceptions of being able to solve problems better than friends. There are two possible reasons for this: either it reflects the particular nature of their reference group (i.e. their friends are also likely to be package tourists) or to de-differentiation, and a blurring of the types of tourism discussed above.

In terms of knowledge and experience, drifters and explorers were likely to know more migrants or returnees living abroad. This is commensurate with the notion that individual travellers are more likely than package tourists to make such contacts. Travel frequency

was not significant for either type of package tourism, but was strongly positive for explorers as expected. However, it was not significant for drifters, which poses the question of whether they are more likely to have spent longer periods of time, less frequently, in fewer countries. This is consistent with the emphasis on staying with locals, and embedding themselves for a period in local communities, whether as tourists or migrants. The number of countries visited outside Europe was significant only for small package tourists, which also fits with our earlier observation that many of those travelling to more 'different' and 'exotic' destinations may be more likely to rely on specialist tour companies.

Finally, the risk-related socio-demographic measures demonstrate a strongly consistent pattern of relationships with types of tourism travel. In terms of gender, only drifters were more likely to be men, which is consistent with their greater risk and uncertainty tolerance. Package tourists were more likely to be relatively younger (and therefore to have young children), while explorers are likely to be relatively older. Package tourists had relatively lower educational qualifications, while explorers and drifters had higher qualifications, which is consistent with the different knowledge demands made on these types of tourism (Tsaur, Yen, & Chen, 2010).

There were also significant relationships with measures of other forms of mobility. Differences between organized and individual tourism were evident in respect of international migration: this was negative for both types of package tourists, and positive for drifters. Finally, only explorer tourists were significantly more likely to plan to migrate in future. The key issue here is that migration is a source of acquiring knowledge, experience and competence of travelling (Williams & Hall, 2002) and, in the case of international migration, of prolonged stays outside the UK. The greater likelihood of explorers to be considering future migration, may be associated with their higher occupational status, and the greater potential of the A and B categories to either work or retire abroad.

The second stage of the analysis, focussing on hazards as deterrents to tourism, provided a far higher R2 value for general hazards than for foreign country hazards, although both were significant. Turning to individual variables, the significant socio-demographic variables were, generally, related to the two factors as anticipated. Women

were more likely to consider general travel hazards to be deterrents to travel, which is consistent with known gendered differences in risk tolerance. The general health and safety factor tended to be significantly more important for older people, which is again consistent with general research on age and risk tolerance. They were significantly less likely to consider foreign country hazards to be deterrents, which may suggest a greater tolerance of cultural difference, although that explanation does not fit with natural hazards. Education was not significantly related to general travel hazards, but was significantly related to foreign country hazards, suggesting that greater knowledge may help counter some forms of cultural stereotyping that can deter travel. Only one migration variable is significant, but it indicates that those with international migration experience are less likely to be deterred by general travel hazards.

Turning to attitudes to risk, there is a broad and mostly consistent pattern of associations with the two factors, especially general travel hazards. Those participating in risky sports are significantly less likely to be deterred by general travel hazards, while those willing to take employment risks are significantly undeterred by foreign country hazards. Perhaps most interesting is that those with greater tolerance of uncertainty are more likely to be undeterred by tourism hazards, which is consistent with these being characterised more by uncertainty than risk. Aversion to uncertainty is positively associated with being deterred by foreign country hazards; this is broadly consistent with the notion of foreign country hazards being relatively difficult, or impossible, to manage. Turning to the only specific tourism measure of risk tolerance, those preferring a guaranteed holiday were, as expected, more likely to be significantly deterred by general travel hazards.

Types of tourism were also strongly significantly related to the two hazard factors. Package tourists and, to a lesser extent, explorer tourists were concerned about both types of hazards. This is consistent, at least in the case of package tourists, but possibly even in the case of explorer tourists, as they were also defined as seeking out comfortable facilities, which minimize many general travel hazards. There are no significant relationships for small package tourists. Drifters, as expected, were the only type of tourist significantly less likely to be deterred by general travel hazards. In summary, here is a clear differentiation between the two polar types, with package tourists being especially concerned about both hazard factors, as evidenced in the high t values and standardised beta values for these. Explorers were broadly similar to

package tourists, reinforcing the distinctiveness of the drifters, as noted in the discussion in section 4.

The findings on competence and knowledge are more mixed. Those who consider they are more likely to be flexible in new situations than their friends are also significantly more likely to be concerned about general travel hazards, but unconcerned about foreign country hazards. The former is apparently inconsistent with the notion of being flexible and adaptable. Also apparently counterintuitive is that those who consider they manage their problems better than their friends have higher levels of concern about both types of hazards. Being better able to adapt to living abroad is only significantly associated with foreign country hazards, which is consistent with engaging with the cultural challenges this implies. Self assessment of willingness to take risks was negatively associated with concern for general tourism hazards. Two of the travel experience related competences were significant and had signs indicating that the accumulation of experience did reduce the deterrence effects of general travel hazards: frequency of travel, and number of countries visited outside Europe. This was broadly consistent with the findings of Hales & Shams (1991) and Lepp & Gibson (2003). Knowing migrants and returned migrants, a valuable resource, was significantly positively related to being deterred by foreign country hazards, and there is no obvious explanation for this, other than these networks being a source of knowledge about the hazards of living in many countries, rather than being a resource to help manage them.

In summary, and focussing here on general travel hazards, which has a larger R² and higher F value, it has been seen that men, young people, drifters, those with higher tolerance of sporting risks, uncertainty, and tourism risks, and those with international migration and travel experiences, are all significantly more likely to be undeterred by general tourism hazards. A more mixed picture emerges for competences, for which there may be a number of possible explanations. One is that the factors are aggregations and necessarily may integrate contradictory relationships at the levels of individual risk variables. A second is that the overall explanatory power of the general travel hazards factor is modest, and that of the cultural/environmental factor is low, with the possibility of being swamped by complex relations with large numbers of unaccounted variables. Finally, it may be consistent to consider yourself more competent than your friends while also being more likely to be deterred from travelling by particular

tourism hazards. An aspect of being competent may be having a higher awareness of the importance of these hazards and managing them by taking decisions not to visit.

6 Conclusions

This paper aimed to demonstrate the value of applying conceptual ideas from behavioural economics to understanding individual tourism preferences in response to risk, specifically in terms of types of tourism travel, and tourism hazards. The work of the behavioural economists suggested three main categories of explanatory variables: socio-demographic measures associated with risk tolerance/aversion, measures of risk tolerance/aversion, and risk-related competences and knowledge. The originality of this contribution is twofold. First, it focuses on three particular components of risk tolerance rather than on risk perceptions as determinants of behaviour: generic risk tolerance, tourism risk tolerance, and uncertainty (unknown risk) versus (known) risk. Secondly, it demonstrates the importance of perceived competence and knowledge to manage risks, again differentiating between generic and tourism specific components. Not only does this bring new perspectives to understanding the determinants of individual tourism behaviour in the face of risk, but it also repositions this branch of tourism research in context of a much broader field of research on risk tolerance. Furthermore, in contrast to most existing research, which either utilises small samples or focusses on particular market segments, the paper utilises an unusually large sample which is broadly drawn from, if not fully representative, of the UK population.

As emphasised earlier, risk tolerance and risk-related competences are enfolded with many other influences such as personality traits, disposable resources, group membership and identities, personal health and mobility, and social responsibilities (Sirkaya & Woodside, 2005). Therefore, the aim of this paper was to provide evidence of significant relationships between risk-related measures and types of travel organization and the importance of tourism hazards, rather than to provide comprehensive explanations of the variance in these. This aim was achieved with very high levels of significance in both sets of linear regression. The R^2 values were relatively low in some instances, but this is generally consistent with the findings of behavioural research dealing with complex decision making and behaviour.

One source of complexity arises from the diversity of individual holiday preferences and tourism experiences stemming from de-differentiation (Uriely, 2005): contrary to the logic of the travel career ladder (Ryan, 1998), individuals may participate in different types of tourism in any one phase of the life course, reflecting their diverse interests and the diversity of travel companions. In response to this, our research design did not force individuals to identify themselves as particular types of tourists. Instead, they identified themselves on nine point scales across all four types. As indicated in section 4, many individuals who identified strongly with say one form of tourism also identified themselves strongly with other forms of tourism (Table 1), and this necessarily makes it more difficult to identify the determinants of the individual types. This is compounded by the enormous societal and tourism changes that have occurred since Cohen (1972) produced his landmark typology of novelty versus familiarity seeking tourists, and the work of other researchers in this field (Pearce 1982). The growth of the internet has led to an enormous increase in the capacity of individuals to book their own holidays, rather than rely on organized tours, while media globalization has changed understandings of what are familiar versus unfamiliar, and the availability of knowledge. This necessarily has reshaped the role of risk in determining tourist preferences and behaviour, although the findings of this paper also confirm that risk-related measures continue to be significant, especially in differentiating tourists and drifters.

In terms of the determinants of tourism behaviour in relation to risk, all six null hypotheses were rejected on the grounds that there were significant relationships (at the 0.01 level) with at least one measure – and up to seven measures - in each group of determinant variables. These demonstrated there were broadly consistent differences between organized and individual tourists, especially between package tourists and individual drifters, in terms of socio-demographic characteristics, risk tolerance and competences. Of particular interest is that while drifters had the socio-demographic profiles and responses to hazards expected with respect to risk taking, they were not significantly more likely to tolerate uncertainty. They were however significantly more likely to possess greater self-assessed competence to manage risks and challenges, and more international experience and networks to use as resources. Turning to the determinants of the importance of tourism hazards as deterrents to travelling, we focus here mainly on the regression model for general travel hazards, as explanation levels

were very modest for foreign country hazards. Socio-demographic factors associated with risk were significant, as was tolerance of both general and tourism-specific risks. Travel experience – both frequency and visiting countries outside of Europe – was also significantly associated with being less deterred by these hazards. However, the picture for competences was more variable, and the possible reasons for this have been discussed.

A major challenge for future research is to address the complexity of the relationships between risk and tourist preferences and behaviour. Four fruitful avenues of research are suggested here, which will require diverse and often innovative research methodologies. First, there is a need to better understand the causal relationship between tourism experiences, and tolerance of tourism risks and hazards. Generic research suggests that levels of risk tolerance are relatively stable over time and events (Sahm, 2007) but this has not been tested specifically for tourism. If so, it poses interesting questions in relation to the distribution of risk-related variables across any possible travel career ladder. Secondly, there is a need for deeper understanding of tourism learning experiences (see Tsaur, Yen, & Chen, 2010) and how these are applied to decision making. Individuals are faced with large amounts of information when decision making, and most use this selectively, just as they learn selectively from their experiences. Complex decision making models offer one way of analysing these issues (Bettman, 1998), an area virtually unexplored in tourism research. Thirdly, there is a need for more fine grained research on the nature of individual competences and how these feed into managing risks, as articulated in tourism decision making. Put crudely, does perception of being competent in respect of tourism risks lead to overconfidence in decision making, or to an individual strategy of risk management (Mansfield, 1996), which may vary from avoiding a destination to seeking to minimize those risks while visiting? Fourthly, if tourism is characterized by uncertainty rather than risk (following Knight's, 1921 definition), and this is being transformed by globalization and new technologies, then what are the new heuristics that individuals use to deal with uncertainty, and how do these vary across changing typologies of tourists and tourism.

Behavioural economics offer new insights for tourism marketing through deepening the understanding of behaviour in context of incomplete knowledge, an essential precondition of the existence of risk as understood in this theoretical framework. In

particular, it provides new understandings of how risk tolerance, and competence to manage risks, vary both between socio-demographic group and amongst individuals. Building on our current research, which identifies differences between preferences for different types of travel organization, it would also be possible to analyse market segmentation, based on responses to risks – in terms of both tolerance and competences. The research also provides insights into how individuals respond to particular types of tourism hazards, and therefore potentially could inform risk management strategies across the industry: whether in terms of advance planning, or responding to emerging crises. There are also potentially important applications in respect of how individuals respond to different types of incomplete knowledge, in particular whether the risks are known to them (in that at least approximate probabilities can be attached to these) or are unknown, but also including how individuals use heuristics to overcome such knowledge gaps. This also has implications for both marketing and for risk management. Finally, by repositioning tourism risk within the broader framework of risk research, connections can be made to tolerance of other forms of risk, such as in drinking, driving and dangerous sports, opening up the potential for more sophisticated approaches to the provision of travel insurance.

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Table 1 Identification with types of travel organization: inter-relationships between high levels of self identification

Of those strongly identifying as:	% also with strong identification in other categories			
	Package	Small package	Explorer	Drifter
Package		32.7	35.5	8.4
Small package			47.3	14.6
Explorer				20.0
Drifter				

Note: strong identification = points 6-9 on a 9 point self-assessment scale

Table 2 Linear regression for types of tourists (only significant associations shown)

	ORGANIZED: Package					ORGANIZED: Small Package					INDIVIDUAL: Explorer					INDIVIDUAL: Drifter				
	B	Std. Error	Beta	T	Sig.	B	Std. Error	Beta	T	Sig.	B	Std. Error	Beta	T	Sig.	B	Std. Error	Beta	T	Sig.
(Constant)	2.845	0.259	x	10.998	0.000	1.601	0.218	x	7.327	0.000	0.998	0.255	x	3.915	0.000	1.089	0.280	x	3.893	0.000
Socio-demographic																				
Gender	0.298	0.077	0.056	3.898	0.000	0.410	0.068	0.092	6.039	0.000	0.217	0.075	0.042	2.897	0.004	-0.336	0.070	-0.068	-4.780	0.000
Age	-0.168	0.025	-0.096	-6.669	0.000	x	x	x	x	x	0.243	0.026	0.143	9.304	0.000	x	x	x	x	x
Education	-0.161	0.035	-0.067	-4.597	0.000	x	x	x	x	x	0.176	0.035	0.076	5.077	0.000	0.088	0.032	0.040	2.777	0.006
International migration	-0.647	0.105	-0.090	-6.167	0.000	-0.348	0.091	-0.058	-3.818	0.000	x	x	x	x	x	0.749	0.095	0.113	7.860	0.000
Intentions to live abroad,	x	x	x	x	x	x	x	x	x	x	0.164	0.044	0.059	3.763	0.000	x	x	x	x	x
Attitudes to risk																				
Financial risk	x	x	x	x	x	x	xx	x	x	x	0.124	0.043	0.044	2.869	0.004	x	x	x	x	x
Driving risk	0.047	0.016	0.043	2.963	0.003	0.038	0.015	0.042	2.631	0.009	x	x	x	x	x	x	x	x	x	x
Smoking risk	x	x	x	x	x	x	x	x	x	x	0.037	0.013	0.040	2.795	0.005	0.037	0.012	0.042	3.049	0.002
Sports risk	x	x	x	x	x	0.061	0.016	0.062	3.723	0.000	x	x	x	x	x	0.097	0.017	0.089	5.699	0.000
Drinking risk	x	x	x	x	x	0.042	0.014	0.048	3.063	0.002	x	x	x	x	x	x	x	x	x	x
Employment change risk	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	0.119	0.040	0.044	2.986	0.003
Tolerance of potential gambling losses	x	x	x	x	x	0.000	0.000	-0.038	-2.591	0.010	x	x	x	x	x	0.000	0.000	-0.051	-3.618	0.000
Tourist lottery choice	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	0.295	0.086	0.048	3.444	0.001
Hazards /deterrents to travel																				
Tourism risk: Poor hygiene	0.072	0.019	0.071	3.740	0.000	x	x	x	x	x	0.052	0.016	0.053	3.243	0.001	x	x	x	x	x
Tourism risk: Weather	0.137	0.016	0.128	8.308	0.000	0.082	0.014	0.091	5.736	0.000	x	x	x	x	x	x	x	x	x	x
Tourism risk: Crime/terrorism	x	x	x	x	x	0.049	0.017	0.053	2.825	0.005	x	x	x	x	x	x	x	x	x	x
Tourism risk: Accommodation	0.181	0.021	0.165	8.444	0.000	0.055	0.018	0.060	3.118	0.002	x	x	x	x	x	-0.151	0.014	-0.150	-10.463	0.000
Tourism risk: :Natural disasters	x	x	x	x	x	x	x	x	x	x	0.045	0.016	0.044	2.721	0.007	x	x	x	x	x
Competences/knowledge																				
Travel frequency	x	x	x	x	x	x	x	x	x	x	0.175	0.043	0.066	4.102	0.000	x	x	x	x	x
Travel outside Europe	x	x	x	x	x	0.156	0.033	0.075	4.724	0.000	x	x	x	x	x	x	x	x	x	x
Knowing migrants/returnees	x	x	x	x	x	x	x	x	x	x	0.055	0.014	0.057	3.863	0.000	0.038	0.013	0.042	2.939	0.003
Willing to bet on uncertainty tolerance	x	x	x	x	x	x	x	x	x	x	-0.003	0.001	-0.039	-2.694	0.007	x	x	x	x	x
Adapting flexibly to new situations	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	0.098	0.020	0.082	4.840	0.000
Managing problems	x	x	x	x	x	x	x	x	x	x	0.076	0.021	0.058	3.593	0.000	x	x	x	x	x
Solving travel problems abroad	0.107	0.018	0.089	6.026	0.000	0.087	0.016	0.086	5.415	0.000	0.167	0.020	0.144	8.164	0.000	x	x	x	x	x
Adapting to life abroad	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	0.070	0.019	0.067	3.695	0.000
More willing to take risks	x	x	x	x	x	x	x	x	x	x	0.074	0.020	0.069	3.752	0.000	0.074	0.020	0.069	3.752	0.000
Model summary	R² = 0.121; F = 68,928; Sig. 0.000					R² = 0.063 F = 27,393; Sig. 0.000					R² = 0.110; F = 42,703; Sig. 0.000					R² = 0.168; F = 70,139; Sig. 0.000				

Table 3: Rotated component matrix for tourism risks

Variable	Component loadings	
	1	2
Poor hygiene	0.836	0.204
Health concerns	0.858	0.181
Crime/terrorism	0.820	0.202
Poor accommodation	0.775	0.294
Political unrest	0.789	0.186
Local customs/religion	0.129	0.838
Natural disasters	0.534	0.551
Weather	0.210	0.749

N = 4528

Table 4: Linear regression for the importance of particular risks as deterrents to travel (only significant associations shown)

	Factor 1 'General travel hazards'					Factor 2 'Foreign country hazards'				
	Unstd. coef		Std. coef			Unstd. coef		Std. coef		
	B	Std. Error	Beta	T	Sig.	B	Std. Error	Beta	t	Sig.
(Constant)	-0.783	0.110	x	-7.135	0.000	0.144	0.083	x	1.738	0.082
Socio-demographic										
Gender	0.109	0.028	0.054	3.929	0.000	x	x	x	x	x
Age	0.069	0.010	0.105	7.117	0.000	-0.039	0.010	-0.060	-3.974	0.000
Education	x	x	x	x	x	-0.060	0.013	-0.066	-4.424	0.000
International migration	-0.145	0.038	-0.054	-3.796	0.000	x	x	x	x	x
Attitudes to risk										
Sports risk	-0.039	0.007	-0.087	-5.515	0.000	x	x	x	x	x
Employment change risk	x	x	x	x	x	-0.065	0.017	-0.059	-3.918	0.000
Package tourist	0.073	0.005	0.194	13.911	0.000	0.071	0.006	0.190	12.728	0.000
Individual tourist: Explorer	0.064	0.006	0.163	11.297	0.000	0.021	0.006	0.054	3.505	0.000
Individual tourist: Drifter	-0.054	0.006	-0.132	-8.978	0.000	x	x	x	x	x
Tourist lottery choice	0.140	0.034	0.056	4.163	0.000	x	x	x	x	x
Competences/knowledge										
Travel frequency	-0.084	0.016	-0.081	-5.379	0.000	x	x	x	x	x
Travel outside Europe	-0.089	0.014	-0.095	-6.358	0.000	x	x	x	x	x
Knowing migrants/returnees	x	x	x	X	x	0.020	0.006	0.053	3.579	0.000
Willing to bet on uncertainty	-0.002	0.000	-0.064	-4.718	0.000	0.001	0.000	0.051	3.441	0.001
Adapting flexibly to situations	0.035	0.009	0.072	4.043	0.000	-0.045	0.010	-0.093	-4.752	0.000
Managing problems	0.056	0.008	0.109	6.685	0.000	0.034	0.009	0.067	3.751	0.000
Adapting to life abroad	x	x	x	x	x	-0.035	0.008	-0.082	-4.622	0.000
More willing to take risks	-0.051	0.007	-0.116	-7.024	0.000	x	x	x	x	x
Model summary	R² = 0.225; F = 93,817; Sig. 0.000					R² = 0.069; F = 33,322; Sig. 0.000				

N = 4528

APPENDIX Descriptive statistics for variables included in final regression models

	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Travel organization								
Organised: Package travel	1	9	4.52	2.662	0.158	0.036	-1.197	0.073
Organised Small package travel	1	9	4.17	2.228	0.169	0.036	-0.811	0.073
Individual: Explorer	1	9	5.83	2.560	-0.457	0.036	-0.920	0.073
Individual: Drifter	1	9	3.22	2.448	0.852	0.036	-0.425	0.073
Travel hazards /deterrents to travel								
Tourism risk: Poor hygiene	1	9	6.13	2.618	-0.546	0.036	-0.932	0.073
Tourism risk: Health concerns	1	9	6.34	2.504	-0.665	0.036	-0.694	0.073
Tourism risk: Weather	1	9	4.85	2.481	0.053	0.036	-0.983	0.073
Tourism risk: Crime/terrorism	1	9	6.69	2.406	-0.900	0.036	-0.231	0.073
Tourism risk: Poor accommodation	1	9	6.26	2.431	-0.606	0.036	-0.662	0.073
Tourism risk: Political unrest	1	9	6.64	2.406	-0.848	0.036	-0.340	0.073
Tourism risk: Local customs/religion	1	9	4.03	2.509	0.405	0.036	-0.931	0.073
Tourism risk: Natural disasters	1	9	5.53	2.505	-0.219	0.036	-0.986	0.073
Socio-demographic								
Gender	1	2	1.55	0.497	-0.203	0.036	-1.959	0.073
Age	1	6	3.50	1.515	0.006	0.036	-0.983	0.073
Education	1	5	2.98	1.111	0.093	0.036	-0.877	0.073
Internal migration	1	3	1.48	0.618	0.930	0.036	-0.169	0.073
International. migration	1	3	1.22	0.475	2.090	0.036	3.631	0.073
Intentions to live abroad	1	4	1.98	0.902	0.395	0.036	-0.951	0.073
Attitudes to risk								
Financial risk	1	4	1.75	0.907	0.886	0.036	-0.361	0.073
Driving risk	1	9	3.83	2.447	0.317	0.036	-1.141	0.073
Smoking risk	1	9	2.76	2.801	1.215	0.036	-0.159	0.073
Sports risks	1	9	2.60	2.243	1.238	0.036	0.371	0.073
Drinking risks	1	9	3.63	2.579	0.529	0.036	-1.000	0.073
Employment change risk	1	5	1.82	0.903	1.343	0.036	2.091	0.073
Tolerance of potential gambling losses	0.50	250.00	12.83	10.316	0.214	0.036	-1.665	0.073
Tourist lottery choice	1	2	1.80	0.401	-1.488	0.036	0.214	0.073
Competences/knowledge								
Travel frequency	1	4	2.04	0.963	0.513	0.036	-0.782	0.073
Travel outside Europe	1	4	2.63	1.066	-0.281	0.036	-1.154	0.073
Knowing migrants/returnees	1	9	4.17	2.653	0.348	0.036	-1.049	0.073
Opinion by best friends on risk taking	1	4	2.53	0.738	0.223	0.036	-0.337	0.073
Willing to bet on risk tolerance	0.00	250.00	23.52	41.079	3.336	0.036	13.461	0.073
Willing to bet on uncertainty tolerance	0.00	250.00	15.99	35.754	4.349	0.036	22.343	0.073
Adapting flexibly to new situations	1	9	5.96	2.049	-0.476	0.036	-0.158	0.073
Managing problems	1	9	6.06	1.952	-0.495	0.036	-0.053	0.073
Solving travel problems abroad	1	9	5.80	2.209	-0.438	0.036	-0.430	0.073
Adapting to life abroad	1	9	5.71	2.329	-0.388	0.036	-0.659	0.073
More willing to take risks	1	9	4.96	2.282	-0.112	0.036	-0.742	0.073

N= 4528

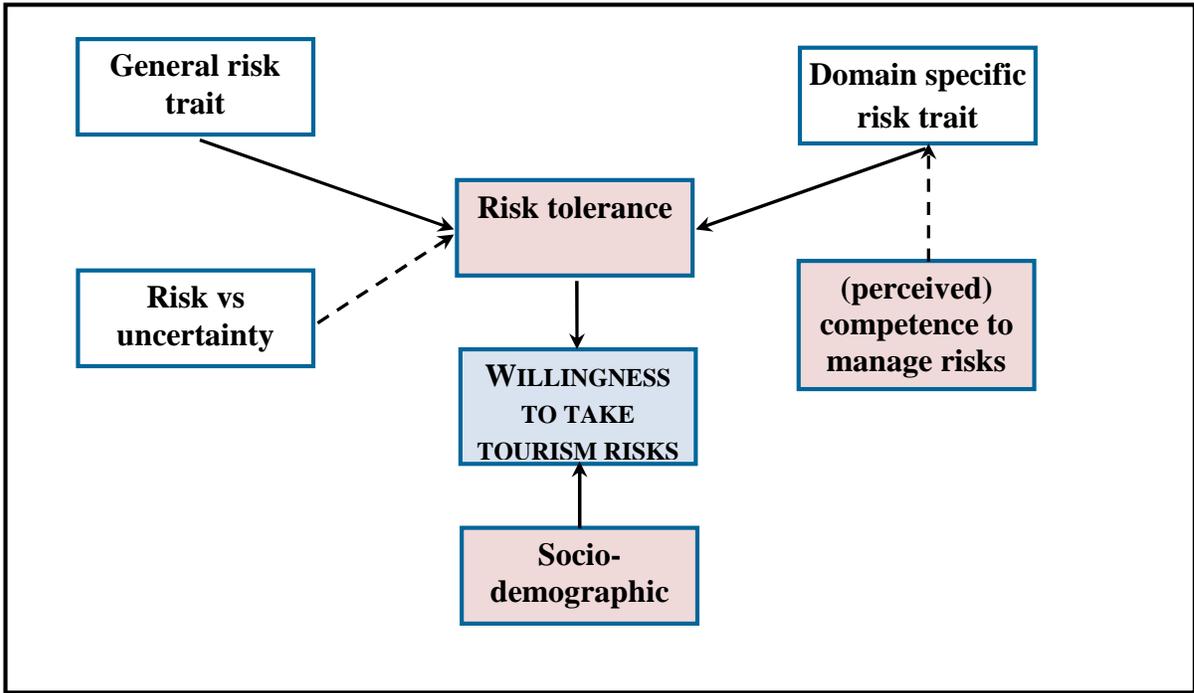


Figure 1 Conceptual model