Published as: Sund, B., Svensson, M., and Andersson, H., "Demographic determinants of incidence experience and risk perception: Do high-risk groups accurately perceive themselves as high-risk?", Journal of risk research, vol. 20, 2017, pp. 99–117.

Demographic determinants of incident experience and risk perception: Do high-risk groups accurately perceive themselves as high-risk?

Björn Sund [a, b1], Mikael Svensson[c2], Henrik Andersson[d,♦]

(a) Karlstad Business School, Karlstad University, SE-651 88 Karlstad, Sweden
(b) Swedish Civil Contingencies Agency (MSB), SE-651 81 Karlstad, Sweden
(c) Department of Economics, Örebro University, SE-701 82 Örebro, Sweden
(d) Toulouse School of Economics (LERNA, UT1C), F-31015 Toulouse Cedex 6, France

Abstract: This paper analyzes demographic determinants of incident experience and risk perception, as well as the relationship between the two, for eight different risk domains. Analyses were conducted by merging the results of a Swedish population-based survey, which includes approximately 15 000 individuals, with demographic and socio-economic register data. Being male was associated with higher incident experience yet a lower risk perception for nearly all risk domains. Lower socioeconomic status was associated with higher incident experience for falls, and being a victim of violence but lower incident experience for road traffic accidents. Lower socioeconomic status was also associated with higher risk perception for falls. On aggregate, ranking the different domains, respondents' risk perception was in almost perfect correspondence to the ranking of actual incident experience, with the exception that the risk of being a victim of violence is ranked higher than indicated by actual incident experience. On a demographic group level, men and highly educated respondents perceive their risks to be lower than what is expected considering their actual incident experience.

Keywords: Incident experience, risk perception, injuries, beliefs.

[1] Corresponding author (present address):
bjorn.sund@msb.se, Swedish Civil Contingencies Agency (MSB), SE-651 81 Karlstad, Sweden. Tel: +46 (0) 10-240 5373
[2] mikael.svensson@oru.se
♦ henrik.andersson@tse-fr.eu

1. INTRODUCTION

Individuals face many risks in their lives. They voluntarily choose to be exposed to some of these risks, such as downhill skiing, skydiving, swimming, and smoking. For the first two, the risk is actually part of the benefit of the activity, since it creates a thrill for the individual. Other risks that by definition are voluntary may still be seen as risks hard to avoid. This is the case for many rare-events risks such as flooding and earthquakes that can be avoided by our decision where to live, but since people's options on where to live may be limited (e.g. due to job opportunities) they are in reality not always able to eliminate such risks. However, many of the risks individuals face are part of their daily lives and cannot easily be avoided and therefore should not be considered as voluntary. For instance, the water that we drink may be contaminated, we face the risk of an accident when commuting to work or school, a break-in into our house or apartment, the air that we breathe may have an effect on our health, etc. Through our choices we may mitigate the risk levels we face but we will never be able to eliminate them.

There is a large body of research on how individuals perceive health risks, especially in the area of mortality risk. One of the early studies, which has been widely cited, is Lichtenstein et al. (1978), in which it was shown that individuals overestimated small mortality risks but underestimated large mortality risks. This finding was then confirmed in other studies and it is today considered an established fact (Andersson and Lundborg, 2007). The overestimation and underestimation is in line with what we expect when individuals update their risk beliefs in a Bayesian fashion (Viscusi, 1989), where the misperception found is a result of partial (but not full) learning (Hakes and Viscusi, 2004; Andersson and Lundborg, 2007).

Understanding how individuals perceive the risk of hazardous activities is of great relevance to policy. In order for safety policies and programs to have the intended effect, it is important that policy makers have an understanding of how individuals perceive the risk to themselves and to others from being exposed to the activities in question (Lichtenstein et al., 1978; Andersson, 2011; Cummings et al., 2013). The risk perception research mentioned above has focused on how closely individuals' subjective risk matches the objective risk. In these studies, risk has been defined as the probability of the negative event and the objective risk has been defined as the statistical risk. In this study we contribute to the risk perception literature by examining individuals' experience of and perceived exposure to hazardous activities, hereafter termed incident experience and risk perception. This literature has mainly focused on larger scale risk, like natural disasters (e.g., Kellens et al., 2011; Viscusi and Zeckhauser, 2006; Halpern-Felsher et al., 2001), also on every-day risks such as domestic fires (Knuth et al., 2014). We contribute to this literature by examining large variation or risks, among which most can be classified as every-day risks.

The aim of the study is to analyze self-reported incident experience and risk perception for eight different risk domains; fire, burglaries and thefts, falls, electrical accidents, road traffic accidents, drowning, natural disasters (e.g. flooding), and being a victim of violence. More specifically, we pose three research questions:

(1) How are demographic variables related to incident experience in a representative sample of the Swedish population in eight different risk domains?

(2) How are demographic variables related to risk perception for the same eight risk domains?

(3) How are incident experience and risk perception related at the full sample level and at the demographic group level? We specifically tested whether higher incident experience in a demographic group also implies a higher risk perception in the same demographic group.

To conduct our analysis we employ data from a Swedish national survey of individuals' views on safety and security, together with official register data on selected individual and household characteristics.

Our research questions concern several different issues relevant to policy. The first research question, to better understand demographic patterns of incident experience, is relevant for improving preventive policies because targeting high-risk groups may increase the effectiveness of these policies (Mackenbach and Bakker, 2003; Woodward and Kawachi, 2000). Personal injuries (which may be one specific outcome of experiencing an incident) represent a large share of premature mortality and morbidity burden; hence it is a major area of concern when outlining policies to improve the health and well-being of the population. Globally, there are many millions of injuries each year, resulting in over five million recorded deaths. Road traffic accidents are the most common cause of fatal injury and the ninth most common cause of all deaths globally. Among those aged 15 to 29, eight of the 15 most common causes of death are due to violence or other injuries (WHO, 2008).

The second research question, how demographic variables are related to risk perception, is of interest since it influences decision-making and behavior. According to decision theories, individuals are assumed to assess the severity and the likelihood of outcomes, perhaps with bias and error, and integrate this information to arrive at decisions regarding risky behavior (Loewenstein et al., 2001). Hence, differences in

risk perception among individuals are important in order to understand differences in risky behavior.

Finally, our third research question concerns how incident experience and risk perception are related to each other. This follows from the literature on risk perception mentioned above, where the empirical evidence showed that low probability mortality risks were overestimated and high probability mortality risks were underestimated (e.g. Hakes and Viscusi, 2005; Andersson and Lundborg, 2007; Andersson, 2011). In this study we compare the rankings of incident experience and risk perception at the full sample level and also analyze whether groups with higher reported experience of incidents also have higher perceived risk for the same type of risk domain. For example, we hypothesize that if men are significantly more likely than women to experience fire incidents then men will also perceive the risk of fire incidents to be higher than women do. Although we cannot use the data in this paper to evaluate this at the individual level, we can compare inconsistent beliefs at the group level.

2. PREVIOUS RESEARCH

There is a large international literature on risk perception. This literature largely falls into two categories: (1) studies examining biases in risk beliefs, which have found, as described above, that individuals overestimate low probability risks but underestimate high probability risks, and (2) studies examining how different factors influence risk beliefs and how these factors can be classified (e.g., Sjöberg, 2000; Slovic, 2000). There are also some previous Swedish studies that have examined how individuals perceive different hazards. For instance, Sundblad et al. (2007) examined cognitive and affective risk judgments about climate change, Sjöberg (2004) studied risk perception concerning nuclear waste, Lundborg and Andersson (2008) looked at

adolescents' risk perception related to smoking, and Andersson and Lundborg (2007) studied risk perception related to road traffic accident and overall mortality risk and Andersson (2011) studied mortality risk related to car accidents.

Regarding demographic determinants of risk perception, a consistent pattern in the literature is that women tend to perceive risks to be larger than men do. This relationship was also found in three of the Swedish studies reported above (Andersson and Lundborg, 2007; Lundborg and Andersson, 2008; Andersson, 2011) where women perceived risks to be higher than men did. Another example is Savage (1993), who found that, compared to men, women perceived risks to be larger for the risk domains aviation accidents, house fires, auto accidents, and stomach cancer. The same results have been found for food risks, violence and crime, flooding, and environmental risks such as radioactive waste, global warming, and technology (Gustafson, 1998; Davidson and Freudenberg, 1996; Kellens et al., 2011; Bord and O'Connor, 1997; Dosman et al., 2001; Palmer, 2003). Rowe and Wright commented, *'Perhaps the most widely demonstrated demographic factor related to risk perception is that of gender'* (Rowe and Wright, 2001, p. 348). A similar conclusion is drawn by Slovic (1999), who argues that dozens of studies have shown that men tend to judge risks as both smaller and less problematic than women do.

Apart from gender, few other demographic characteristics show a systematic pattern in risk perception. Savage (1993) found a negative relation between age and risk perception for aviation, house fires and auto accidents, but a positive relation for cancer, and Lazo et al. (2000) found that older individuals perceive risks related to the ecosystem to be higher. In studies using Swedish data, Sjöberg (2004) found a positive correlation between age and the general risk associated with nuclear waste, whereas Andersson and Lundborg (2007) and Andersson (2011) found mixed results

between age groups for the probability of underestimating the risk related to overall mortality risk or traffic mortality risk.

Some studies have found lower perceived risk levels among highly educated individuals (Savage, 1993; Rowe and Wright, 2001), whereas other studies have failed to find any significant association between risk perception and educational level (Sjöberg 2004). As argued in Sundblad et al. (2007), education could increase a person's sense of control and thus lower perceived risks. On the other hand, education could also be systematically associated with the degree of accuracy regarding the probability and consequences of an accident, which could indicate either higher or lower risk perception depending on the existence and degree of misperception of risks in the general population. For instance, when comparing objective and subjective risks, Hakes and Viscusi (2004) found that better educated individuals had a smaller risk bias. Similarly, Andersson and Lundborg (2007) and Andersson (2011) found weak evidence that the risk bias was smaller among those who underestimated the mortality risk of their own age and gender group.

Previous studies on the relation between incident experience and risk perception have generally focused on larger-scale natural disasters like floods, earthquakes, tornadoes, and hurricanes (e.g. Kellens et al., 2011; Viscusi and Zeckhauser, 2006; Halpern-Felscher et al., 2001; Ho et al., 2008; Lindell and Hwang, 2008). A recent study by Knuth et al. (2014) investigated the domain of domestic fires and found that incident experience increases perceived risk for this 'every-day' risk. The majority of the studies have found a positive relation between incident experience and risk perception, but examples of negative relation (Halpern-Felsher et al., 2001) and non-significant relation also exists (Viscusi and Zeckhauser, 2006). Moreover, tt has also been found that the effect of experience on risk perception depends on

whether the risk is voluntary or not (Barnett and Blackwell, 2001). The same study reported variability in risk perception depending on the way experience was assessed by the individual ('impact', 'outcome', and 'frequency').

3. DATA

The data on incident experience and risk perception used for the analyses originate from a mail survey carried out by the Swedish Rescue Services Agency (SRSA) from January to March 2007.[3] The total sample size was 33 600 individuals, split into a national sample (12 000) and a municipality sample (21 600). All 290 municipalities in Sweden were invited to participate in the survey with 600 respondents each, and 36 agreed to do so. Respondents were 18–79 years old and were randomly chosen among registered inhabitants of Sweden and the participating municipalities; they received no payment for participation. In total, 20 881 questionnaires were returned, which was an overall response rate of 62 percent. Excluding observations with missing values we have a working dataset that includes 14 000 to 15 000 observations. (The number of observations differs for the different risk domains.) A non-response analysis showed that non-responses had no important systematic effects on the results. The general results of the survey and an analysis of missing data are summarized in an SRSA report (SRSA, 2007).

The aim of the survey was to examine how people view safety and security in their everyday environment. Part 1 (security) was about whether the individuals were concerned about becoming victims of accidents or other serious events. Part 2 (risk and safety) investigated the size of the subjective risk of becoming a victim of accidents or other serious events, and part 3 (security measures) examined the

[3] On January 1, 2009, the Swedish Rescue Services Agency (SRSA) was renamed the Swedish Civil Contingencies Agency (MSB).

presence of security measures and how important they were considered to be. A few questions about demographics were included, which SRSA supplemented by adding register data from Statistics Sweden on selected individual characteristics. Table I show the demographic data and indicates which variables are from the survey and which are from Statistics Sweden. The SRSA choice of variables includes such variables previously shown to have a significant effect on incident experience and risk perception and other variables of a more exploratory nature, without previous systematic patterns or a clear prediction of the effect across all risk domains. The descriptive statistics are based on the whole sample and they may differ between the different risk domains.

[TABLE I ABOUT HERE]

The eight risk domains used in our analysis are the same for both survey questions. They are: fire incidents, burglaries and thefts, falls, electrical accidents, road traffic accidents, drowning, being a victim of violence, and natural disasters (e.g. flooding). For the first four risk domains there is a slight difference in wording since '…at home' is added to the description of risk perception, e.g. 'fire' for incident experience and 'fire at home' for risk perception. These eight specific risk domains were selected from a larger set because they appeared in both the incident experience and risk perception question of the survey. In the incident experience question, respondents were also asked about "Aviation, boat, or train accident", "Industrial accident", "War or warlike conditions", and "Other serious accident". These areas were not covered in the risk perception question; instead, respondents were asked about "Accidents with chemicals at home", "Accidents in connection with leisure

activities", "Fire in a public facility", "Dangerous chemical emissions", and "Terrorism". Since we could not compare experience and risk perception for these domains, they were dropped from our analysis.

Through our survey data on incident experience, we also captured incidents that are not registered by insurance companies, the police or the health care sector, among others. This provides a broader perspective compared to studies using register data. As with all mail questionnaires, there are concerns regarding data quality and respondent interpretations of the questions; for example, in the case of incident experience, the threshold for an experience can vary between respondents. Nonetheless, we expect that each individual is internally consistent across the two questions. Considering that our focus is on demographic determinants of incident experience and risk perception, individual differences should not cause any problems for the research questions examined in this paper. Only systematic differences in the interpretation of the questions between the demographic groups would be a problem.

4. RESULTS

4.1 Incident experience

Our variable of interest in this section is experiencing an incident. The question was posed as follows in the survey: *'Have you or someone close to you experienced the following? Several options on the same line can be specified.'* Possible answers were: (A) *I have experienced…*, (B) *Someone close to me has experienced…*, (C) *No, neither I nor someone close to me has experienced….* This question was asked for all eight risk domains. We dichotomized the answers by assigning the value one if the option (A) (first-hand experience) was specified, and zero otherwise.

Figure 1 shows the proportions of incident experience for the eight risk domains. The highest proportions are indicated for road traffic accidents and burglaries or thefts (over 25 percent), followed by falls, fires, and violence. Few respondents had personally experienced natural disasters, electrical accidents, or drowning.[4] As previously mentioned, the survey data may capture a somewhat broader concept of incident experience compared to register data (such as from hospital admissions), yet the pattern generally follows the incidence rates from official reports, statistics, and databases (NESB, 2007; SRSA, 2005; SRSA, 2009; SLSC, 2009; SIKA, 2008a, BRÅ, 2009).

[FIGURE 1 ABOUT HERE]

Before specifying the regression model, we tested for multicollinearity. All correlation coefficients were below |0.5|, except for the ones between the unit dummy variables university education and secondary school education (-0.62) and between the unit dummy variable age 65–80 and being employed (-0.61). Considering that the outcome variable is a binary variable, we estimate the models using a nonlinear probability model where we relate the explanatory variables to the probability first-hand experience of the risk; the logit model. To offer a more meaningful interpretation than the direct coefficients from the logit regression analysis, we show the marginal effects of a change in the explanatory variables. All estimations are conducted using the software Stata v.13 and standard errors are adjusted for clustering at the municipal level. [5]

[4] Note that the term *drowning* does not imply fatality. The outcome can be death, morbidity, or no morbidity.

[5] Considering that the data is hierarchical in the sense that individuals are nested in municipalities, a multi-level model may also be an appropriate choice instead of adjusting the standard errors for

Table II shows the results for the logistic regression with (first-hand) incident experience as the dependent variable. Being male was a positive determinant for experiencing all incidents, especially road traffic accidents (+9 percentage points=pp), burglary (+5 pp), and electrical accidents (+3 pp). Older respondents were more likely to have experienced incidents, except being a victim of violence. Higher income was positively associated with being a victim of burglary and road traffic accidents (+1 pp per 100 000 Swedish crowns (SEK)) and negatively associated with falls (-1 pp per 100 000 SEK).

[TABLE II ABOUT HERE]

Respondents in single households were more likely to have experienced falls and violence (+2 pp) but less likely to have been a victim of burglary (-2 pp). Those with a higher level of education, both secondary school and university, were more likely to have experienced incidents, especially road traffic accidents (+4 pp) and burglary (+3 pp). Being employed was negatively associated with falls (-5 pp), fires (-2 pp), and violence (-3 pp), and being a homeowner was negatively associated with burglary (-4 pp), violence (-4 pp), road traffic accidents (-3 pp), and fires (-2 pp).

Respondents born in Sweden were less likely to have experienced road traffic accidents (-5 pp), violence (-2 pp), or natural disasters (-2 pp). Respondents from medium-sized and large cities were more likely to have experienced burglaries than respondents from small cities (+4 pp and +12 pp, respectively). Respondents from large cities were also more likely to have experienced violence (+2 pp). However, they were less likely to have experienced road traffic accidents (-6 pp) or fires (-3 pp).

clustering. We have estimated all our regressions using a multi-level logit model as well, with no differences regarding our inferences (results available upon request). We therefore stick to the standard logit model in the paper for ease of interpretation in terms of marginal effects.

Pseudo R^2 values, which compare a model with just the intercept with the model including our parameters, are between 0.008 and 0.046. This is generally rather low, but all models are statistically significant better in fitting the data compared to a model with just the intercept ($p<0.001$).[6]

4.2 Perceived incident risk

In this section we are interested in respondents' perceptions of their personal risk for the eight different risk domains. The question was posed as follows in the survey: *'How large is your risk of personally being affected by the following?'* Possible answers were: (A) *'Very low'*, (B) *'Fairly low'*, (C) *'Neither high nor low'*, (D) *'Fairly high'*, (E) *'Very high'*, and (F) *'Do not know'*.

Again, the same question was asked for all eight analyzed risk domains. We dichotomized the answers by assigning the value one if the perceived risk was stated to be *'Fairly high'* or *'Very high'*, and zero otherwise.[7] 'Do not know'-answers were coded as missing values. Figure 2 presents the proportions of high perceived risk for the eight risk domains.

[FIGURE 2 ABOUT HERE]

We used a logistic regression to analyze the determinants of risk perception.[8] The determinants were the same as in the previous section, except that we

[6] Potentially the model could also include a range of interaction effects. However, with 15 explanatory variables (main effects) the number of potential interaction variables is huge. Without clear theoretical predictions as to which interaction effects would be relevant, we judge it to be sounder to refrain from a "data mining" exercise in checking for significant interaction effects. Thus, we focus on the main effects here.

[7] We obtained largely similar results when we assigned the value of one only for a risk perception of 'Very high'.

[8] We could have used an ordered model instead, but the marginal effects are more difficult to interpret in such a model. However, the parameter estimates are very similar regarding the qualitative interpretation.

included a dummy variable indicating whether a respondent had experienced the incident personally. Hence, we have *perceived risk = f(gender, age, income,… , medium_city, experience_risk domain).*

[TABLE III ABOUT HERE]

Table III shows that men had a lower perceived risk for most risk domains, especially burglary and theft (-3 pp), road traffic accidents (-3 pp), violence (-3 pp), and falls (-2 pp), compared to women. The older respondent groups had a higher perceived risk of falls (+4 to +8 pp) but lower perceived risk of being a victim of violence (-2 pp) compared to the youngest age group. The perceived risk of road traffic accidents was lowest for respondents aged 30–44 years (-4 pp) and 65–80 years (-5 pp). Higher income was negatively associated with perceived risk of natural disasters (-1 pp per 100 000 SEK), but positively associated with perceived risk of road traffic accidents (+1 pp per 100 000 SEK). Being single did not have a significant effect on perceived risk, nor did having children living at home. Education level had a negative effect, whenever significant, across the whole range of incident types. The largest effects of university education on perceived risk were for burglary (-3 pp), violence (-1 pp), and falls (-1 pp). For secondary school education level, the largest effects were for burglary (-2 pp) and violence (-1 pp).

Being employed had a generally negative effect on perceived risk, especially for falls (-3 pp), violence (-1 pp), and natural disasters (-1 pp), but not for road traffic accidents (+3 pp). Homeowners had a higher perceived risk of burglary (+5 pp) and lower perceived risk of violence (-2 pp). Compared to other groups, respondents born in Sweden perceived risks to be lower across all risk domains except road traffic

accidents. The effect was particularly strong for burglary (-6 pp), natural disasters (-3 pp), fires (-2 pp) and violence (-2 pp) and it was -2 pp or larger for all incident types. Living in a large or medium-sized city was associated with a lower perceived risk for both fires (-2 pp) and road traffic accidents (-3 pp), compared to living in a small city, but the perceived risk of violence was higher (+2 to +4 pp). Respondents in large cities also perceived a higher risk of burglary (+6 pp).

Incident experience significantly increased perceived risk for all incident types except drowning, i.e. having experience of a particular accident/risk outcome is associated with a higher perceived future risk as well; the effect ranged from +2 to +13 pp.

Again, the pseudo R^2 values were relatively low for all models (0.027 to 0.088), but still statistically significantly better fits compared to a model with just the intercept ($p<0.001$).

4.3 Incidence experience and risk perception: do they coincide at the aggregate level?

In this section we compare how respondents ranked the different risk domains in terms of incident experience and risk perception at the aggregate level, and we look at potential inconsistencies in the rankings. We further examine how incident experience and risk perception coincide at different demographic group levels.

When comparing internal rankings of the risk domains at the full sample level (combining Figures 1 and 2) we see that incident experience and risk perceptions correlate to a large degree.

[TABLE IV ABOUT HERE]

As summarized in in Table IV and previously shown in Figure 1 and 2, the highest proportions were assigned to road traffic accidents, both for incident experience and risk perception. All proportions within each column were significantly different (chi-square test, $p<0.01$). The only deviation from perfect correspondence between incident experience and risk perception at the full sample level is that violence was ranked higher (third place) for perceived risk than for incident experience (fifth place). All other internal ratings were consistently ranked.

Differentiating the proportions between genders showed no changes in risk perception. The rankings are the same for men and women. For incident experience, burglary tops the list for men, while road traffic accidents top the list for women. Also, electrical accidents are ranked higher for men than women.

On an individual level, incident experience was a significant determinant of risk perception for seven of the eight risk domains in Table III. Here we hypothesized that the parameter estimates for the different demographic variables from the regressions on incident experience and risk perception would have the same sign. For example, based on the regression results that men were more likely than women to experience fires, we hypothesized that men would also perceive the risk of fire as higher than women did. We conducted these comparisons for several of the demographic groups listed in Table I. To compare the results, we classified the combinations of significant positive (+), significant negative (-), and non-significant (0) parameter estimates into three groups:

1. Combinations +/+, -/- and 0/0: The respondent's perceived risk matches what was expected from incident experience at a group level.
2. Combinations +/-, +/0 and 0/-: The respondent's perceived risk is smaller than what was expected from incident experience at a group level.

3. Combinations -/+, 0/+ and -/0: The respondent's perceived risk is larger than what was expected from incident experience at a group level.

[TABLE V ABOUT HERE]

Table V shows that the combinations where the sign is diametrically different were concentrated to gender and education level. Men have higher incident experience than women do, yet they perceive the risks to be smaller. Note that we have no objective measure of the magnitude of these risks that would enable us to establish whether the inconsistency between the groups could be the result of inaccurate risk perception by men or women, or both. The same pattern can to some degree also be seen for respondents with a higher education level. Both university and secondary school graduates generally perceive risks to be relatively smaller than expected by experience at a group level.

There are several relative inconsistencies between incident experience and risk perception for the other demographic groups too. However, the signs do not tend to show a similar pattern for the different risk domains. For income, higher income is associated with a lower-than-expected perceived risk of fire, burglary, electrical accident, and natural disaster, but a higher-than-expected perceived risk of violence. Age is excluded from this comparison, since we would expect it to be positively related to incident experience and negatively to risk perception. The older the respondents are, the more likely they are to have experienced an incident, although there may also be a tendency to forget experiences that took place long ago. Regarding risk perception, age may be negatively correlated for most risk domains,

since the risk perception question concerns future risks (without any time restriction) and it is unclear how respondents incorporate this factor.

5. DISCUSSION

The first research question in this paper was 'How are demographic variables related to incident experience in a representative sample of the Swedish population in eight different risk domains?' Our analyses showed that for all eight risk domains, men were more likely than women to report having experienced incidents. Generally, there were distinct differences across the different risk domains. For violence and falls, the results indicate that lower socio-economic groups (low income, low education, unemployed and not a homeowner) experienced more incidents.

The opposite was found for road traffic accidents: high-income earners and individuals with a university education experienced more incidents, which is at odds with register data evidence on hospital care for road traffic accidents in Sweden (SIKA, 2008b). It may be that high-income earners are involved in more traffic accidents of a lower severity (not requiring hospital care), or that different income groups interpret the question differently. However, the result fits well with Danish data reported by Fosgerau (2005), showing that higher income was significantly related to speeding (increasing accident risk).

The second research question was 'How are demographic variables related to risk perception for the same eight risk domains?' The results showed that several demographic variables were significantly related to lower perceived risk for most risk domains. These demographic variables were: being male, having a high level of education, being employed, and being born in Sweden. Since we have no objective measure for the risks we do not know whether these perceptions to lower actual risk

levels for these groups. Any explanation why employed individuals and those borne in Sweden perceive many risks to be lower will only be speculative, like actually being at lower risk, or more trust in the system. However, the education effect is in line with the hypothesis that education may increase a person's sense of control and thus lower perceived risks (Sundblad et al., 2007). Moreover, that men perceive risks to be lower is a robust finding in the literature on risk perception, for example Davidson and Freudenberg (1996) and Savage (1993). It is a matter of debate whether the gender difference is biological or an indication that one gender is more informed than the other (Flynn et al., 1994; Finucane et al., 2000; Barke et al., 1997; Slovic et al., 1997; Steger and Witt, 1989). Alternative plausible explanations for why men perceive risks to be lower than women are that men have more to gain from risky activities (Davidson and Freudenberg, 1996) and that women dislike risk more than men (Powell and Ansic, 1997; Jianakoplos and Bernasek, 1998; Hersch, 1998; Byrnes et al., 1999).

The third research question was 'How is incident experience and perception related at the full sample level and at the demographic group level?' At the full sample level, the perception of different risks corresponds almost perfectly with actual incident prevalence, with road traffic accidents having the highest proportion, burglary the second-highest, and so on. One risk domain, violence, was perceived to have a relatively higher ranking than its actual prevalence. The high degree of accuracy in the ranking of risk perception reinforces previous findings that individuals tend to have quite accurate perceptions of the degree of risks (Sjöberg, 2000; Lichtenstein et al., 1978), even though there is evidence that small mortality risks tend to be somewhat overestimated and large mortality risks tend to be somewhat underestimated (Morgan et al., 1983; Hakes and Viscusi, 2004).

At the demographic group level, we tested whether higher incident experience within a demographic group correlates with higher perceived risk in the same group. The main result is that men consistently had higher incident experience rates but lower risk perceptions. On an aggregate level, this result indicates a relative inconsistency in the risk perceptions of men and women. Since we have no objective data against which to calibrate the respondents' personal definitions of each risk event, we cannot tell whether men underestimate their risks or whether women overestimate theirs (or whether both are correct). Knuth et al. (2014) compared objective risk to the perceived risk and concluded that it cannot be assumed that differences between men and women will always be in the same direction for all risk events. For traffic and fire risks specifically, men were found to underestimate the objective risk.

Some inconsistencies were also found for university-educated respondents. In six risk domains, university education is not significantly associated with a higher or lower incident experience, whereas in two risk domains, incident experience is significantly more common among respondents with a university education. However, their risk perception is lower in four risk domains and not significantly different in the remaining four risk domains.

Inconsistencies in risk perception may lead to individuals making non-optimal decisions if based on systematically inaccurate risk beliefs. On a societal level, misperceptions of risk (both underestimation and overestimation) may result in public acceptance of, or support for, inefficient life-saving projects. Poor understanding of risks may lead to similar levels of resources being allocated to projects with substantial differences in potential for risk reduction, implying that the cost of each life saved will vary significantly (ESO, 1994; Tengs et al., 1996).

In our analysis and discussion we have focused on how demographic and socio-economic characteristics are related to incident experience and risk perception. We have disregarded emotion-based factors including worry, anxiety, dread, fear, free will, and novelty that are involved in risk assessments. Emotion-based variables may explain much of the variation that we did not capture in our analyses. Previous research has shown that risk perceptions are indeed influenced by dimensions that are not linked to cognitive aspects (Slovic, 1987, 2000). There are a variety of psychological, social, institutional, and cultural factors that frame subjective risk perceptions (Loewenstein et al., 2001). Hence, since our data do not allow us to examine how these characteristics are related to incident experience and perception, it is important for future work to also collect data on these variables.

ACKNOWLEDGMENTS

We would like to thank Peter Frykblom, Lars Hultkrantz, Niclas Krüger, Henrik Jaldell, Ulf Persson, and seminar participants at the Swedish National Road and Transport Research Institute for helpful comments and suggestions.

FUNDING

We gratefully acknowledge the financial support of the *Swedish Civil Contingencies Agency*. Henrik Andersson is also grateful for financial support from *Handelsbankens forskningsstiftelser*.

REFERENCES

Andersson, H., Perception of Own Death Risk: An Assessment of Road-Traffic Mortality Risk. Risk Analysis, 2011, 31(7), 1069–1082.

Andersson, H. Lundborg P., Perception of own death risk: An analysis of road-traffic and overall mortality risks. Journal of Risk and Uncertainty, 2007, 34(1), 67–84.

Barke RP, Jenkins-Smith H, Slovic P. Risk perceptions of men and women scientists. Social Science Quarterly, 1997; 78(1):167–176.

Barnett J and Breakwell G.M. Risk perception and experience: hazard personality profiles of individual differences. Risk Analysis, 2001; 21 (1): 171–178.

Bord R. J, O'Connor R. E. The gender gap in environmental attitudes: The case of perceived vulnerability to risk: Research on the environment. Social Science Quarterly, 1997, 78: 830-840.

BRÅ. Database on burglaries, violence, and abuse. 2009, Accessed 2009.10.26: http://statistik.bra.se/solwebb/action/index.

Byrnes JP, Miller DC, Schafer WD. Gender differences in risk taking: A Meta-analysis. Psychological Bulletin, 1999; 125(3): 367-383.

Cummings, C. L., D. M. Berube, and M. E. Lavelle. 2013. “Influences of Individual-level Characteristics on Risk Perceptions to Various Categories of Environmental Health and Safety Risks.” Journal of Risk Research 16 (10): 1277–1295.

Davidson D, Freudenberg W. Gender and Environmental Concerns: A Review and Analysis of Available Research. Environmental Behavior, 1996; 28: 302-339.

Dosman D, Adamowicz W, Hrudey S. Socioeconomic Determinants of Health- and Food Safety-Related Risk Perceptions. Risk Analysis, 2001; 21: 307-317.

ESO. Att rädda liv Kostnader och effekter. 1994: Finansdepartementet, Ds 1994:14.

Finucane ML, Slovic P, Mertz CK, Flynn J, Satterfield TA. Gender, race, and perceived risk: The “white male” effect. Health, Risk & Society, 2000; 2(2):159–172.

Flynn J, Slovic P, Mertz CK. Gender, race and perception of environmental health risks. Risk Analysis, 1994; 14(6):1101–1108.

Fosgerau M. Speed and income. Journal of Transport Economics and Policy, 2005; 39(2): 225-240.

Gustafson P. Gender Differences in Risk Perception: Theoretical and Methodological Perspectives. Risk Analysis, 1998; 18(6): 805-811.

Halpern-Felsher B.L, Millstein S.G, Ellen J.M, Adler N.E, Tschann J.M, Biehl M. The role of behavioral experience in judging risks. Health Psychology, 2001; 20(2): 120-126.

Hakes JK, Viscusi WK. Dead Reckoning: Demographic Determinants of the Accuracy of Mortality Risk Perceptions Risk Analysis, 2004; 24(3): 651-664.

Hersch J. Compensating differentials for gender-specific job injury risks. American Economic Review, 1998; 88(3):598–607.

Ho M.-C, Shaw D, Lin S, Chiu Y.-C. How do disaster characteristics influence risk perception? Risk Analysis, 2008; 28(3): 635-643.

Jianakoplos NA, Bernasek A. Are women more risk averse? Economic Inquiry, 1998; 36(4):620–630.

Kellens W, Zaalberg R, Neutens T, Vanneuville W, Maeyer P.D. An analysis of the public perception of flood risk on the Belgian coast. Risk Analysis, 2011; 31(7): 1055-1068.

Knuth D, Kehl D, Hulse L, Spangenberg L, Brähler E, Schmidt S. Risk perception and emergency experience: comparing a representative German sample with German emergencu survivors. Journal of Risk Research, 2014. http://dx.doi.org/10.1080/13669877.2014.910685

Lazo JK, Kinnell JC, Fisher A. Expert and layperson perceptions of ecosystem risk. Risk Analysis, 2000; 20: 179-193.

Lichtenstein S, Slovic P, Fischhoff B, Layman M, Combs B. Judged Frequency of Lethal Events. Journal of Experimental Psychology: Human Learning and Memory, 1978; 4(6): 551-578.

Lindell M.K, Hwang S.N. Households' perceived personal risk and responses in a multihazard environment. Risk Analysis, 2008; 28(2): 539-556.

Ljung R, Peterson S, Hallqvist J, Heimerson I, Diderichsen F. Socioeconomic differences in the burden of disease in Sweden. Bulletin of the World Health Organization, 2005; 83(2): 92-99.

Loewenstein G, Weber E, Hsee C, Welch N. Risk as Feeling. Psychological Bulletin, 2001; 127(2): 267-286.

Lundborg P, Andersson H. Gender, risk perceptions, and smoking behavior Journal of Health Economics, 2008; 27(5): 1299-1311.

Mackenbach JP, Bakker MJ. Tackling Socioeconomic inequalities in health: analysis of the European experiences. Lancet, 2003; 362: 1409-1414.

Morgan G, Brodsky SF, Butler DA, Ditz DW, Exekoye LI, Florig HK, Geisler DF, Morgan DJ, Moteff JD, Perusich KA, Rod SR, Sandilya MS, Weiss MBH, Wiecha CF, Wise BP, Wojcik LA, Zane HR. On Judging the Frequency of Lethal Events: A Replication. Risk Analysis, 1983; 3: 11-16.

NESB. Elolycksfall (National Electric Safety Board). 2007, Stockholm: National Electric Safety Board.

Palmer, C. 2003. "Risk Perception: Another Look at the 'White Male' Effect." Health, Risk & Society 5 (1): 71–83.

Powell M, Ansic D. Gender differences in risk behavior in financial decision-making: An experimental analysis. Journal of Economic Psychology, 1997; 18(6):605–628.

Rowe G, Wright G. Differences in expert and lay judgements of risk: Myth or reality? Risk Analysis, 2001; 21: 341-355.

Savage I. Demographic Influences on Risk Perceptions. Risk Analysis, 1993; 13(4): 413-420.

SIKA. Official Statistics on Road Accidents. 2008a, Östersund: Swedish Institute for Transport and Communication Analysis.

SIKA. Vad kostar en trafikolycka: Konsekvenser av vägtrafikolyckor i form av sjukskrivningar, arbetslöshet och inkomstförluster. SIKA Rapport 2008:8. 2008b, Östersund.

Sjöberg L. Factors in Risk Perception. Risk Analysis, 2000; 20(1): 1-11.

Sjöberg L. Explaining Individual Risk Perception: The Case of Nuclear Waste. Risk Management, 2004; 6: 51-64.

Slovic P. Perception of risk. Science, 1987; 236(4799): 280-285.

Slovic P. Trust, emotion, sex, politics and science: Surveying the risk-assessment battlefield. Risk Analysis, 1999; 19: 689-701.

Slovic P. The Perception of Risk. 2000, London: Earthscan.

Slovic P, Malmfors T, Mertz CK, Neil N, Purchase IFH. Evaluating chemical risks: Results of a survey of the British Toxicology Society. Human & Experimental Toxicology, 1997; 16:289–304.

SLSC. Drunkingsolyckor 2008. 2009, Stockholm: Swedish Life Saving Society.

SRSA. Olyckor i boendet, skadestatistik och risker (NCO 2005:8). 2005, Karlstad: Swedish Rescue Services Agency.

SRSA. Trygghet och säkerhet i vardagsmiljön. Resultat från enkätundersökningen (NCO 2007:8). 2007, Karlstad: Swedish Rescue Services Agency.

SRSA. Database on natural disasters in Sweden. 2009, Accessed 2009.10.26: http://www.srv.se/templates/SRV_ExternalPage____22396.aspx.

Steger MAE, Witt SL. Gender differences in environmental orientations: A comparison of publics and activists in Canada and the U.S. Western Political Quarterly, 1989; 42(4):627–649.

Sundblad E-L, Biel A, Gärling T. Cognitive and affective risk judgements related to climate change. Journal of Environmental Psychology, 2007; 27: 97-106.

Tengs TO, Adams ME, Pliskin JS, Safran DG, Siegel JE, Weinstein MC, Graham JD. Five-hundred life-saving interventions and their cost-effectiveness. Risk Analysis, 1996; 15(369-390).

Viscusi WK, Prospective Reference Theory: Towards and Explanation of the Paradoxes. Journal of Risk and Uncertainty, 1989, 2(3), 235-263.

Viscusi W.K, Zeckhauser R.J. National survey evidence on disasters and relief: risk beliefs, self-interest, and compassion. Journal of Risk and Uncertainty, 2006; 33(1-2): 13-36.

WHO. Violence, Injuries and Disability. 2008, Geneva: World Health Organization.

Woodward A, Kawachi I. Why reduce health inequalities? Journal of Epidemiology and Community Health, 2000; 54: 923-929.

TABLES

Table I. Descriptive statistics

Variable	**Description**	**Mean (std. dev)**
Male	Unit dummy variable for male gender.	0.47 (0.50)
Age 18-29	Unit dummy variable for age 18-29 years.	0.13 (0.33)
Age 30–44[a]	Unit dummy variable for age 30–44 years.	0.23 (0.42)
Age 45–64[a]	Unit dummy variable for age 45–64 years.	0.40 (0.49)
Age 65–80[a]	Unit dummy variable for age 65–80 years.	0.24 (0.43)
Income[a]	Income per person in 2005 SEK (Swedish kronor, USD 1 = SEK 6.758, monthly average 2007, stats.oecd.org, 2014-06-14).	230 664 (168 236)
Single	Unit dummy variable for single household; zero for married or cohabiting.	0.28 (0.45)
Children	Unit dummy variable for children living at home; zero if no children at all or adult (18+) children.	0.35 (0.48)
University[a]	Unit dummy variable for education level of at least two years at a university.	0.26 (0.44)
Secondary school[a]	Unit dummy variable for education level longer than nine-year compulsory school, but below university level.	0.51 (0.50)
Primary school[a]	Unity dummy variable for education level primary school as maximum (i.e. nine-year compulsory school or less)	0.23 (0.40)
Working	Unit dummy variable for being in employment; zero if unemployed, student, or retired.	0.54 (0.50)
Homeowner	Unit dummy for owning one´s own house (including terraced house) or apartment; zero for apartment block.	0.54 (0.50)
Born in Sweden[a]	Unit dummy variable for being born in Sweden.	0.83 (0.38)
Large city	Unit dummy variable for living in a city with more than 200 000 inhabitants (i.e. Stockholm, Gothenburg, Malmö)	0.15 (0.36)
Medium city	Unit dummy variable for living in a city with 15 001 – 200 000 inhabitants	0.45 (0.50)
Small city	Unity dummy variable for living in a city/village with 15 000 inhabitants or less	0.40 (0.49)

Notes: Number of observations is 20 881

a: Based on register data from Statistics Sweden. Other variables were collected in the survey.

Table II. Logit regression: Determinants of incident experience

	Fire	Burglary	Fall	Electrical accident	Road accident	Drowning	Violence	Natural disaster
Male	0.0171***	0.0491***	0.0174**	0.0328***	0.0881***	0.00579***	0.0216***	0.00602
	(0.001)	(0.000)	(0.002)	(0.000)	(0.000)	(0.001)	(0.000)	(0.073)
Age 30–44	0.0338**	0.0911***	0.0858***	0.000908	0.0502***	0.0134**	0.00916	-0.00901
	(0.003)	(0.000)	(0.000)	(0.836)	(0.001)	(0.008)	(0.234)	(0.101)
Age 45–64	0.0438***	0.119***	0.132***	-0.00577	0.0562***	0.00805*	-0.0200**	-0.00317
	(0.000)	(0.000)	(0.000)	(0.150)	(0.000)	(0.016)	(0.003)	(0.562)
Age 65–80	0.0101	0.102***	0.168***	-0.0166***	-0.00793	0.00222	-0.0674***	-0.0121*
	(0.355)	(0.000)	(0.000)	(0.000)	(0.594)	(0.534)	(0.000)	(0.015)
Income	1.35e-08	6.53e-08*	-5.87e-08**	-6.46e-09	7.27e-08**	2.94e-09	-4.64e-08*	-1.05e-08
	(0.354)	(0.016)	(0.003)	(0.322)	(0.003)	(0.373)	(0.022)	(0.336)
Single	-0.0111	-0.0208*	0.0161*	-0.000469	0.00839	0.000247	0.0172**	0.00587
	(0.067)	(0.019)	(0.021)	(0.881)	(0.373)	(0.892)	(0.002)	(0.174)
Children	0.00795	0.00976	-0.0165*	0.00541	-0.00948	-0.00662***	0.0101	0.00992*
	(0.200)	(0.279)	(0.018)	(0.089)	(0.304)	(0.000)	(0.069)	(0.020)
University	0.0115	0.0290*	0.00348	0.00284	0.0376**	-0.00337	0.0113	0.0110
	(0.165)	(0.015)	(0.692)	(0.496)	(0.002)	(0.116)	(0.139)	(0.056)
Secondary school	0.0140*	0.0307**	0.0167*	0.00348	0.0434***	-0.000516	0.00943	0.000830
	(0.043)	(0.002)	(0.022)	(0.303)	(0.000)	(0.789)	(0.126)	(0.855)
Working	-0.0248***	-0.0151	-0.0514***	-0.00841*	-0.0176	-0.00548**	-0.0259***	-0.0124**
	(0.000)	(0.129)	(0.000)	(0.010)	(0.083)	(0.010)	(0.000)	(0.007)
Homeowner	-0.0174**	-0.0377***	-0.00960	-0.00495	-0.0291**	-0.00544**	-0.0367***	-0.00143
	(0.003)	(0.000)	(0.142)	(0.102)	(0.001)	(0.002)	(0.000)	(0.718)
Born in Sweden	0.00722	-0.00233	-0.00751	-0.00895*	-0.0474***	-0.00844**	-0.0175*	-0.0173**
	(0.322)	(0.825)	(0.363)	(0.041)	(0.000)	(0.004)	(0.011)	(0.001)
Large city	-0.0285***	0.117***	-0.0182*	-0.00748*	-0.0557***	-0.000245	0.0239**	-0.00931*
	(0.000)	(0.000)	(0.038)	(0.022)	(0.000)	(0.914)	(0.003)	(0.033)
Medium city	-0.00852	0.0426***	0.00556	-0.00640*	-0.0194*	-0.00144	0.00395	-0.0102**
	(0.120)	(0.000)	(0.376)	(0.018)	(0.021)	(0.393)	(0.439)	(0.005)
N	14913	15342	15477	14397	15270	14797	14441	14172
Pseudo R^2	0.008	0.018	0.032	0.046	0.014	0.040	0.049	0.010

Notes: *marginal effects; p-values in parentheses; based on robust standard errors;* * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Pseudo R^2 refers to McFadden's R^2. Reference categories are as follows: For age the reference is "Age 18-29"; for Educational level the reference is "Primary school", for city size the reference category is "Small city".

Table III. Logit regression: Determinants of perceived risk

	Fire	Burglary	Fall	Electrical accident	Road accident	Drowning	Violence	Natural disaster
Male	-0.0150***	-0.0344***	-0.0222***	-0.00804**	-0.0338***	-0.000705	-0.0266***	-0.00377
	(0.000)	(0.000)	(0.000)	(0.003)	(0.000)	(0.676)	(0.000)	(0.133)
Age 30–44	0.00190	0.00129	0.0357**	0.000934	-0.0360**	0.00451	-0.0215***	0.00369
	(0.759)	(0.905)	(0.002)	(0.835)	(0.002)	(0.194)	(0.000)	(0.450)
Age 45–64	-0.00861	0.0147	0.0465***	-0.00366	-0.0164	0.00192	-0.0185***	0.00821
	(0.115)	(0.137)	(0.000)	(0.336)	(0.149)	(0.508)	(0.000)	(0.063)
Age 65–80	-0.0235***	0.0105	0.0807***	-0.00754*	-0.0527***	-0.00855***	-0.0204***	-0.000715
	(0.000)	(0.340)	(0.000)	(0.038)	(0.000)	(0.000)	(0.000)	(0.872)
Income	-3.07e-08*	2.17e-08	-3.69e-08*	-3.83e-08**	5.09e-08*	6.43e-09	-2.18e-08	-5.47e-08***
	(0.038)	(0.122)	(0.022)	(0.003)	(0.017)	(0.060)	(0.101)	(0.000)
Single	-0.000171	-0.00664	0.00256	0.00282	-0.0144	-0.00266	0.00755	-0.00492
	(0.968)	(0.308)	(0.482)	(0.352)	(0.084)	(0.147)	(0.076)	(0.066)
Children	0.00423	-0.00817	-0.000954	0.00324	0.00938	0.00302	0.000887	0.00291
	(0.314)	(0.201)	(0.818)	(0.315)	(0.258)	(0.132)	(0.842)	(0.333)
University	-0.00801	-0.0304***	-0.0104*	-0.00693*	0.0137	-0.00246	-0.0135**	-0.00637
	(0.102)	(0.000)	(0.011)	(0.037)	(0.208)	(0.283)	(0.004)	(0.061)
Secondary school	-0.00260	-0.0195**	-0.00729*	-0.00467	-0.000582	-0.00326	-0.0112*	-0.00202
	(0.552)	(0.004)	(0.049)	(0.130)	(0.951)	(0.146)	(0.012)	(0.512)
Working	-0.00485	-0.0105	-0.0270***	-0.00919**	0.0291***	-0.00942***	-0.0145**	-0.0105**
	(0.247)	(0.133)	(0.000)	(0.006)	(0.001)	(0.000)	(0.001)	(0.001)
Homeowner	-0.00183	0.0457***	-0.00159	-0.00114	-0.00664	-0.00479*	-0.0174***	-0.00396
	(0.643)	(0.000)	(0.653)	(0.676)	(0.408)	(0.015)	(0.000)	(0.150)
Born in Sweden	-0.0246***	-0.0563***	-0.0177***	-0.0208***	-0.0153	-0.0165***	-0.0240***	-0.0261***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.126)	(0.000)	(0.000)	(0.000)
Large city	-0.0193***	0.0590***	0.000426	-0.00255	-0.0336***	0.00378	0.0411***	-0.00116
	(0.000)	(0.000)	(0.933)	(0.463)	(0.001)	(0.199)	(0.000)	(0.745)
Medium city	-0.0233***	-0.00111	-0.00354	-0.00535	-0.0271***	-0.000416	0.0197***	-0.00168
	(0.000)	(0.855)	(0.304)	(0.053)	(0.000)	(0.837)	(0.000)	(0.528)
Experienced incid.	0.0223***	0.0799***	0.0469***	0.0358**	0.0544***	0.0157	0.0866***	0.132***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.111)	(0.000)	(0.000)
N	14913	15342	15477	14397	15270	14797	14441	14172
Pseudo R^2	0.027	0.036	0.080	0.037	0.012	0.051	0.076	0.088

Notes: marginal effects; p-values in parentheses; based on robust standard errors; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Pseudo R^2 refers to McFadden's R^2. Reference categories are as follows: For age the reference is "Age 18-29"; for Educational level the reference is "Primary school", for city size the reference category is "Small city".

Table IV. Incident experience and risk perception by risk domain: full sample and by gender

Full Sample		Men		Women	
Incident experience	**Risk perception**	**Incident experience**	**Risk perception**	**Incident experience**	**Risk perception**
1. Road traffic	1. Road traffic	1. Burglary	1. Road traffic	1. Road traffic	1. Road traffic
2. Burglary	2. Burglary	2. Road traffic	2. Burglary	2. Burglary	2. Burglary
3. Fall	3. Violence	3. Fall	3. Violence	3. Fall	3. Violence
4. Fire	4. Fall	4. Fire	4. Fall	4. Fire	4. Fall
5. Violence	5. Fire	5. Violence	5. Fire	5. Violence	5. Fire
6. Natural	6. Natural	6. Electrical accident	6. Natural disaster	6. Natural disaster	6. Natural disaster
7.Electrical	7.Electrical	7. Natural disaster	7. Electrical accident	7. Electrical accident	7. Electrical accident
8. Drowning	8. Drowning	8. Drowning	8. Drowning	8. Drowning	8. Drowning

Note: Incident experience and risk perception in decreasing order

Table V. Comparing incident experience to risk perception at demographic group level

	Fire	Burglary	Fall	Electrical accident	Road accident	Drowning	Violence	Natural disaster
Male	+/-	+/-	+/-	+/-	+/-	+/0	+/-	0/0
Income	0/-	+/0	-/-	0/-	+/+	0/0	-/0	0/-
Single	0/0	-/0	+/0	0/0	0/0	0/0	+/0	0/0
Children	0/0	0/0	-/0	0/0	0/0	-/0	0/0	+/0
University	0/0	+/-	0/-	0/-	+/0	0/0	0/-	0/0
Sec school	+/0	+/-	+/-	0/0	+/0	0/0	0/-	0/0
Working	-/0	0/0	-/-	-/-	0/+	-/-	-/-	-/-
Home-owner	-/0	-/+	0/0	0/0	-/0	-/-	-/-	0/0
Born Swe	0/-	0/-	0/-	-/-	-/0	-/-	-/-	-/-
Large city	-/-	+/+	-/0	-/0	-/-	0/0	+/+	-/0
Med city	0/-	+/0	0/0	-/0	-/-	0/0	0/+	-/0

Notes: Coefficient signs from Tables II and III.
+ = positive significant, – = negative significant, 0 = non-significant.
Color codes: White: perceived risk=expected by experience, Light grey: perceived risk>expected by experience, Dark grey: perceived risk<expected by experience.

FIGURES

Figure 1. Incident experience for the different risk domains

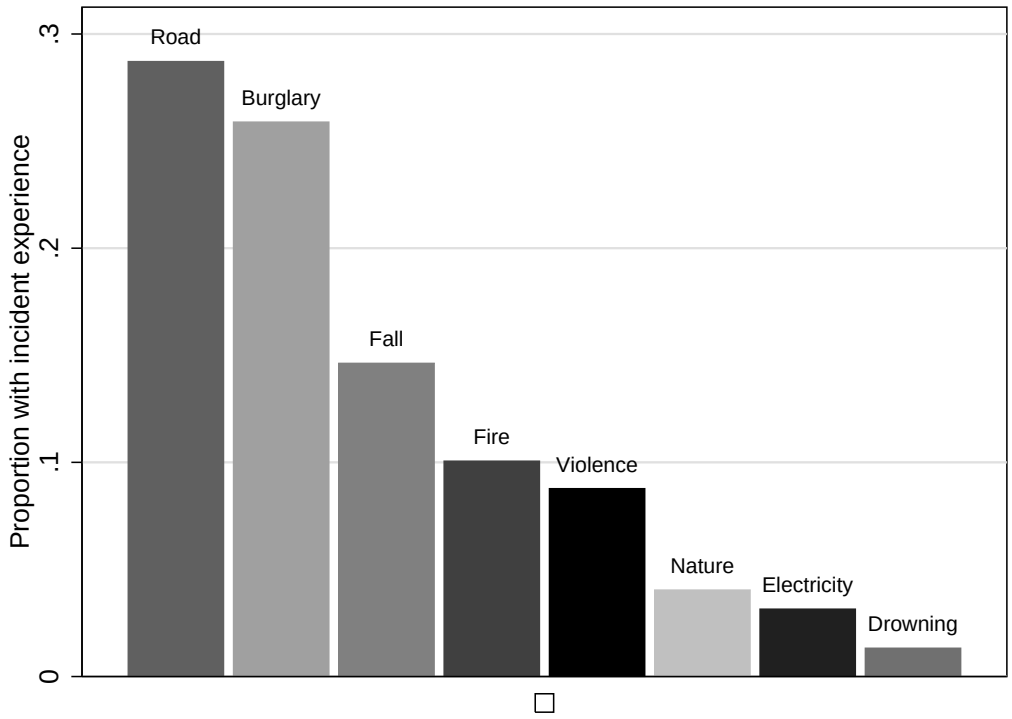

Figure 2. Risk perception for the different risk domains