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THE EVOLUTION OF RISK PERCEPTION IN CHILE: A COMPARISON OF CROSS SECTIONAL STUDIES (2001-2013)

CAMILA ANDREA ZACHARIAS MOLINA

Thesis submitted to the Office of Research and Graduate Studies in partial fulfillment of the requirements for the Degree of Master of Science in Engineering

Advisor:

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Santiago de Chile, December, 2013

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I dedicate this work to my family and all those who helped me in this process. A special feeling of gratitude to my loving parents, Nora and Jaime, who have taught me everything and have always encouraged me to follow my dreams.

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RESUMEN

Chile ha experimentado muchos cambios sociales y culturales durante la última década. Con un aumento del PIB per cápita y alta estabilidad política, Chile se ha posicionado como uno de los países más desarrollados de la región. A la vez, grandes desastres naturales han afectado a la población. El más relevante ocurrió en el 2010, cuando un terremoto de magnitud 8.9 y un tsunami afectaron al 80% de la población chilena, algo que no había ocurrido a este nivel de magnitud desde 1960. Con todos estos cambios, es esperable que la percepción de riesgo de la población haya cambiado en la última década.

El principal objetivo de esta investigación es evaluar el cambio en percepciones de riesgo en Chile entre el 2001 y el 2013. Para llevar esto a cabo, se midieron las percepciones de riesgo actuales y se contrastaron con aquellas evaluadas en el estudio de Bronfman y Cifuentes (2003). Basándose en el paradigma sicométrico, y utilizando una encuesta similar a la del estudio pasado, se estudiaron las diferencias de percepciones de riesgo, beneficio y aceptabilidad para 31 peligros distintos. La encuesta fue implementada en Santiago de Chile en junio del 2013, donde 1.273 personas participaron del estudio. Los resultados muestran que el paradigma sicométrico no muestra grandes diferencias en la última década. El factor 1 ("Riesgo Terrible") se mantiene como el más importante a la hora de explicar las percepciones de la población para el 2001 y el 2013. Las percepciones de riesgo, beneficio y aceptabilidad muestran cambios significativos en la última década: la población actual percibe los peligros con mayor riesgo y menor aceptabilidad que hace una década, particularmente para desastres naturales, males sociales y peligros ambientales. Las implicancias de este estudio en políticas públicas son discutidas.

Palabras claves: percepción de riesgo, evolución de percepción de riesgo, paradigma sicométrico, diferencias entre géneros, estudio transversal.

ABSTRACT

Chile has experienced several social and cultural changes during the last 15 years. Per-capita income growth and political stability have placed Chile in a leading position in South America, and development has produced many changes in its society. The population has raised awareness towards environmental hazards and inequality issues in health and education. Natural disasters have also affected the population. In 2010 Chile suffered an 8.9 magnitude earthquake and tsunami, something not experienced by the Chilean population since 1960. With all these changes, it is expected that public risk perceptions are different than it was a decade ago.

The main objective of this investigation is to assess the change in risk perception in Chile between 2001 and 2013. To achieve this, current public concerns and perceptions of risk were characterized and contrasted with those quantified and reported a decade ago by the study of Bronfman and Cifuentes (2003). Based on the psychometric paradigm, and using a similar survey to the one implemented before, differences in perceptions of risk, benefit and acceptability for 31 hazards were studied. The survey was implemented to 1,273 participants from Santiago in June 2013. Results show that the psychometric paradigm has no relevant differences over the last decade. Factor 1 (Dread Risk) remains as the most important factor in explaining risk perception for 2001 and 2013. Perceived risk, benefit and acceptability have significantly changed over the past decade: today's population perceives hazards with higher risk and less acceptability than a decade ago, especially regarding natural disasters, social ills and environmental hazards. Men and women show significant differences between their perceptions of 2001 and 2013. Main implications for public policies are discussed.

Key words: Risk perception, evolution of risk perception, psychometric paradigm, gender differences, cross sectional study.

1 INTRODUCTION

Public perceptions of risk are a focal point of discussions regarding the management of different hazards (technologies, activities, substances, etc.). The policies that should be adopted and the structure of policy-making processes are often determined by different views of what the public knows and wants. The problem about this is that, more often than not, these views are based on anecdotal observation or speculation (Fischhoff et al., 1982). In order to develop appropriate policies regarding acceptability levels of risk and risk communication strategies, among others, empirical evidence regarding what the public truly knows and wants is needed.

The study of risk perceptions began in the 1970's, with the initial investigations by (Starr, 1969), (Fischhoff et al., 1978) and (Slovic et al., 1980). Using questionnaires with psychometric scales, researchers asked the public directly what their perceptions of risk and benefit were, regarding several hazards. Numerous researchers followed, and important findings were made in this field (Alhakami & Slovic, 1994; Bastide et al., 1989; Fischhoff, 1995; Fischhoff et al., 1997; Goszczynska et al., 1991; Hinman et al., 1993; McDaniels et al., 1997; Poumadere et al., 1995; Renn, 1998; Siegrist, 2000; Slovic, 2000a). One of these findings was that technical experts and laypeople judge risk in a very different way.

While experts guide their assessments by mortality rates, laypeople assessments of risk are influenced by cultural, psychological and social factors, and that the characteristics of a risk, such as its controllability or catastrophic potential, have a powerful effect in how people perceive them (Slovic, 2000b). Another interesting finding was that, developed countries have populations more concerned about hazards, with greater demands for control and regulation than society's at lower development stages (Wildavsky, 1979).

In Chile, Bronfman and Cifuentes (2003) performed a cross sectional study in 2001 to investigate risk perceptions and attributes with a representative sample of Santiago. Since then, Chile has experienced several social and cultural changes. Social ills are a

now primary concern, leading to laws controlling abuse of alcohol and drugs, and to efforts to reduce inequality in health and educational services. Environmental concerns have switched somehow from local and regional problems, such as particulate air pollution and wastewater pollution to global issues, such as climate change. In addition, natural disasters have affected the population. In 2010, Chile suffered an 8.9 magnitude earthquake and tsunami, something not experienced by the Chilean population since 1960. In light of these changes, it is expected that public risk perception have changed as well.

The objective of this work is to study the evolution of risk perceptions and attributes in Chile, to provide essential information for the proper development of risk communication and management strategies. The specific objectives are the following:

1. Study the changes of main factors and the cognitive map between 2001 and 2013.
2. Study how genders have changed their risk perceptions in the last decade.
3. Study how perceptions of risk, benefit and acceptability over eight types of hazards and 31 different hazards have changed over the past decade.

The following hypotheses have been drawn:

H1: Risk perceptions of the population have increased significantly in the last decade, and acceptability perceptions have significantly lowered.

H2: Women's perceptions towards risk and acceptability are no longer significantly different from those of men.

H3: Natural hazards and social ills are perceived as significantly riskier and less acceptable than in 2001.

To achieve the research goals, a cross sectional study was performed to study current public concerns and characterizations of risk, and results were contrasted with those obtained in the previous study. A survey was implemented in June of 2013 to a representative sample of Santiago (1,273 participants) which was comparable to the sample of 2001 (508 participants). Differences in perceptions of risk, benefit,

acceptability and eight risk attributes for 31 hazards were studied. Gender differences in perceptions were also studied.

The following thesis is structured as follows: a brief introduction of the research topic is presented in the first chapter, where the main objective of the study is raised. In the second chapter, a revision of the most relevant literature for the purposes of this study is made: the psychometric paradigm is explained, results found in the study of Bronfman and Cifuentes (2003) are described, and the main social and cultural changes that have affected the Chilean population in the last decade are mentioned. Chapter 3 describes the methods implemented in the study: the survey design and implementation and how the data was analyzed. Results for the differences in perceptions and in the psychometric paradigm are described in chapter 4, and discussion and conclusions of this investigation are detailed in chapter 5, were perspectives for future studies are also mentioned.

2 THEORETICAL FRAMEWORK

2.1 Expert and laypeople judgments about risk

From the moment we get out of bed, we incur into a variety of risks. Trivial aspects of life, like walking down the stairs or taking the bus to work, have the possibility of becoming harmful to a person's health (Wilson, 1979). The ability to sense and avoid harmful conditions, as well as learning from past experiences, is crucial for survival in this hazardous world (Slovic, 1987).

There have been several international studies that investigate how the population assesses certain risks. In these studies, it has been shown that there are relevant differences between evaluations made by technical experts and laypeople in the variables that both groups take into consideration when evaluating risk (Fischhoff et al., 1982; Flynn et al., 1993; N. Kraus et al., 1992; Lazo et al., 2000; Savadori et al., 2004; Slovic et al., 1980, 1985; Slovic et al., 1995). According to Slovic (1987), when experts judge risk, their responses correlate highly with technical estimates of annual fatalities. However, laypeople's judgments of risk are related to perceptions of other hazard characteristics, such as catastrophic potential, level of control, immediacy of effects, etc. As a result, the hazards that the population perceive with the most risk are not necessarily those with higher fatalities, despite that lay people can assess annual fatalities when asked specifically to do so (and can produce estimates somewhat like the technical estimates).

Even though lay people sometimes lack the specific knowledge about certain hazards that experts do possess, their basic conceptualization of risk is much richer and reflects legitimate concerns that are typically omitted from expert risk assessments (Slovic, 2000b). This has made risk perception an important topic to politicians and policy makers (Sjöberg, 2004). Without listening to public judgments and opinions, it would be impossible to understand what they value, know and demand (Fischhoff et al., 1997).

In order to make wise decisions, the population needs to understand the risks and benefits associated to the hazards they face. For the successful development of public policies of risk education and communication, where the population is provided with useful information regarding risks, it is important to consider how the population perceives them and their desires of regulation. Only with this information can there be a proper strategy of communication towards risks that leads to robust risk management policies, where public attitudes are taken into consideration to highlight the concerns of the population and forecast their reactions towards different hazards. Even though considering perceptions does not guarantee wise decisions, lack of such information would definitely increase the likelihood of failure of well-intentioned policies (Slovic et al., 1982). Research on risk perception has been dominated by the psychometric paradigm, a methodology that has been fruitful in bringing up important issues for policy people and regulators (Sjöberg, 2004).

2.2 The Psychometric Paradigm

The psychometric paradigm explains why people perceive different hazards in different ways, unveiling the factors that determine risk perception (Siegrist et al., 2005). This model was first published in the empirical investigation by (Fischhoff et al., 1978), with the basic assumption that, through psychophysical scales and multivariate analysis techniques, many of the factors that characterize risk can be quantified and modeled in order to determine social and individual preferences (and attitudes) towards risks (Slovic, 1987). In studies where the psychometric paradigm is used, participants assess different rating scales that characterize risk, such as “severity of consequences” (how likely are the consequences to be fatal) or “controllability” (to what degree can the risk be controlled by the population) for a set of hazards. Even though studies usually evaluate these scales on a heterogeneous set of hazards, which can range from marihuana to earthquakes, a number of studies have focused on a homogenous set, such as (N. N. Kraus & Slovic, 1988) for railroad hazards and (Sparks & Shepherd, 1994) for food hazards.

Results from numerous studies that have applied the psychometric paradigm, have found that laypeople's risk perceptions are more related to hazard characteristics, such as perceptions of catastrophic potential and dreadfulness, rather than only considering statistical information, such as probability. Their basic conceptualization of risk is much richer than technical estimates of annual fatalities and reflects legitimate concerns that are typically omitted from these technical risk assessments (Slovic, 1987).

Principal components analysis is commonly used to determine the factors found in the psychometric paradigm, where, in most studies, correlations between scales result in two main factors. Scales of controllability, dreadfulness and catastrophic potential usually compose the first factor, labeled "Dread Risk", and degree of novelty, degree of knowledge, and latency of effects usually compose the second factor, labeled "Unknown Risk". The 'cognitive map' that results from plotting these factors has become a key aspect of risk perception research. In this map, each factor becomes a dimension (Dread = x axes and Unknowledge = y axes) and hazards are plotted in the map.

The psychometric paradigm has been conducted in various countries around the world, with very contributing research coming from studies applied in the United States (Fischhoff et al., 1997; Fischhoff et al., 1982; Fischhoff et al., 1978; Flynn et al., 1994; Poumadere et al., 1995; Renn, 1998; Slovic et al., 1980, 1985), Australia (Eiser et al., 1990), United Kingdom (Eiser et al., 1990; Eiser et al., 2002), Canada (Alhakami & Slovic, 1994), Sweden (Nyland, 1993), Japan (Kleinhesselink & Rosa, 1991), among others. Even though cross-cultural differences have been observed in numerous investigations, the two main factor structure has been replicated in most studies, with similarities being greater than any dissimilarities observed in the cognitive maps (Siegrist et al., 2005).

The psychometric paradigm has become very useful for public policy people, engineers and anyone who should be concerned with public reactions towards risks for a better understanding of risk perceptions, and consequently, better public policies for risk communication.

2.3 The availability heuristic and its relationship with natural hazards

Natural hazards are adverse events that are commonly associated with human loss and destruction. Disasters such as earthquakes, tsunamis, wild fires or extremely powerful storms often leave the affected population devastated and can cause major injuries and death. Due to the existence of technologies such as internet, television and smartphones, mass media and social media can reveal the effects of such events to the entire population.

Hazards that are usually overestimated by lay people tend to be mentioned in the news media disproportionately (Combs & Slovic, 1979). This happens because the effects of these hazards are more available to people and can recall them easily. According to (Sjöberg, 2000a), of the three heuristics that people use for judgment: anchoring, representativeness and availability, this last one is often argued as the most important one for understanding risk perception.

Sjöberg also mentions that there is an obvious relationship between mass media and how hazards are available for the population. Frequent media exposure of a certain hazard makes it become more memorable for people and the availability of that risk rises. In the investigation by Fischhoff et al (1982), it was observed that there were large differences in the estimated frequency of events that had similar statistical frequencies, illustrating the use of availability. People judge these events with larger likelihood of happening since they are easy to recall or imagine.

2.4 Risk perception studies in Chile

In 2001, (Bronfman & Cifuentes, 2003) performed a study in order to characterize risk perception in Chile, based on the psychometric paradigm. A survey was administered to residents of Santiago city (capital of Chile), where a representative sample of 508 participants (57.7% female) was required to quantify several risk attributes and risk constructs (perceived risk, benefit and acceptability) for 54 hazards. Using principal components analysis, 10 risk attributes were reduced to a three factor structure: Factor 1,

labeled as *Dread Risk*, included the attributes "catastrophic potential", "dreadfulness", "severity of consequences", "voluntariness" and control of exposed people", and accounted for 37% of sample's variance; Factor 2, labeled as *Unknown Risk*, included the attributes "knowledge", "novelty" and "immediacy of effects", and accounted for 28% of sample's variance; and Factor 3, labeled as *Personal Effect*, included the attributes "number of exposed people" and "personal effect", and accounted for 15% of sample's variance. This result was aligned with previous studies (Fischhoff et al., 1978; Slovic, 1987). Considering the classical cognitive map reported in the psychometric paradigm literature (factors 1 and 2), results from this study suggest that higher scores in both factors were associated to higher perceptions of risk and unacceptability, with factor 1 having the greatest explanatory power.

Natural hazards, social ills and environmental hazards obtained high scores in factor 1 and were the types of hazards with the highest scores in risk perception. Transport hazards obtained the lowest scores in both factors, being perceived with low risk and high acceptability.

2.5 Changes in Chile over the last decade

Chile has made a tremendous economic and social progress over the last decade, becoming the first South American country to join the OECD in 2010. GDP per-capita has grown from $6,691 in 2001 to $9,447 in 2012 (constant 2005 US$) (World Bank, 2013), while poverty rates have decreased considerably, with 5.8% less people living under the poverty line between 2000 and 2011 (World Bank, 2013).

Social ills have become a greater concern over the years, leading to the development of regulatory instruments aiming at controlling alcohol and drugs abuse, and to efforts to reduce health inequalities. Access to education is also improving: from 10.8 average years of study for the population of Santiago in 2000 to 11.3 in 2011 (Government of Chile, 2011). Environmental concerns now not only include local problems, such as particulate air pollution and wastewater pollution, but have since incorporated global

issues, such as climate change. This hazard was hardly known in 2001, and now it is common knowledge.

Chile is located in the pacific ring of fire, which explains its high volcanic and seismic activity. During the last decade, strong geologic activity has affected the country and caused vast damage. The most recent and severe event occurred in 2010, when Chile suffered the 6th largest earthquake and tsunami recorded in history (U.S. Department of Interior. U.S. Geological Survey), affecting more than 80% of the country's population and leading to 507 deaths and over 440.000 damaged dwellings. In 2008, the volcano Chaiten erupted unexpectedly and caused severe consequences in a nearby city, which was completely evacuated and later relocated. More recently, in 2012, another natural hazard strongly impacted Chileans when a wildfire in the Chilean Patagonia devastated more than 34.000 acres of the famous national park "Torres del Paine".

Gender is strongly related to risk judgments and attitudes. Many studies have found that men tend to judge risks as smaller and less problematic than women (Slovic, 1999), which is consistent with previous findings in Chile. Using the same data of 2001, (Bronfman, Cifuentes, et al., 2008) found that women have higher risk perceptions and lower acceptability than men in Chile, especially regarding technological hazards. According to (Steger & Witte, 1989), since women give birth and have the social task of nurturing and the duty to maintain life, they have been characterized as more concerned about human health and safety. The combination of biology and social experience has been put forward as the source of distinctions in perceptions between genders (Gilligan, 1982).

Since it has been a man's world for centuries, it is logical that they perceive risks differently than women. (Flynn et al., 1994) discuss that there is a sociopolitical explanation to different perceptions between men and women: males see less risk in the world because they create, manage, control and benefit from so much of it. Women see the world as more dangerous because they benefit less from technologies and institutions, and because they have less power and control. Gustafson (1998) and

Hitchcock (2000) discuss in depth how and why men and women's risk perceptions might differ. However, women have been raising their voices and gaining power in their communities and countries, accessing better educational opportunities that should be changing this last mentioned fact (Gustafson, 1998; Hitchcock, 2000).

In Chile, there have been many changes over the last decade regarding equality issues between genders, especially in education and employment opportunities. Nowadays, women have higher access to education than a decade ago (from 10.5 in 2000 to 11.1 years of study in 2012) (Government of Chile, 2011). In 2009, 30% of women and 28% of men between 18 to 24 years of age were enrolled in superior education in the country, contrasted to 21% of women and 23% of men of the same age group in 2000. In 2001, only 25% of investigators financed by the National Commission of Scientific and Technological Research (CONICYT) were women, which increased significantly to 40% by the year 2011 (Boisier, 2012). Women have also increased in numbers and gained power in political positions. A clear example of this was shown in the elections of 2006, were the first female president was elected.

3 METHODS AND DATA

3.1 Instrument design

A survey including 40 hazards was designed, with 31 of them replicated from the preliminary study of Bronfman and Cifuentes (2003), and the other nine were related to new technologies, social ills and natural disasters that currently affect the country and were not included previously. The survey was designed to quantify eight risk attributes from the psychometric paradigm and three risk constructs (social risk, social benefit and social acceptability). All of these attributes and variables quantified social perceptions, that is, how participants perceive risks to be to the entire population, and not just to themselves. Additionally, nine questions were included to measure social trust. Of these questions, six of them were aimed at evaluating social trust (perceptions of competence and integrity) in 10 institutions responsible of risk communication regarding natural disasters, and the other three studied social trust in the participant's community. In all questions associated to risk perception, the hazards were to be rated on a 7 point Likert scale, and questions regarding trust were to be rated on a 5 or 7 Likert scale, depending of the question. The survey was divided into three questionnaires: Form A included questions regarding the three analysis variables (and social trust questions), and forms B and C included 4 questions regarding the psychometric paradigm each. For the purpose of this study, which is to evaluate the evolution in perceptions of the Chilean population over the last decade, we will consider the 31 hazards that this study has in common with the study of Bronfman and Cifuentes (2003) and the 11 questions regarding risk perception (analysis variables and psychometric paradigm). Questions regarding social trust and the nine new hazards will be studied in further investigations, since they cannot be evaluated longitudinally at the time. The questions considered for this investigation and their distribution in the questionnaires can be observed in Table 3-1, and the 31 hazards (and the other 9 that were part of the survey) can be observed in Table 3-2. Additional questions were also included to characterize the participants sociodemographically.

Table 3-1. Attributes and analysis variables included in each questionnaire

Variable	Description	Scale end points		Form
		Low (1)	High (7)	
Social risk	To how much risk is the national population subjected product of (……)?	No risk	High risk	A
Social benefit	How much benefits does the national population obtain product of (……)?	No benefit	High benefit	A
Social acceptability	How acceptable is the risk that affects the national population product of (……)?	Unacceptable	Acceptable	A
Novelty	Is the risk associated to (……) new and non-familiar, or is it old and familiar?	New	Old	B
Involuntariness	To what degree is the risk associated to (……) faced voluntarily by the exposed population?	Voluntary	Involuntary	B
Catastrophic potential	To what magnitude (……) has the potential to cause death and catastrophic destruction?	No catastrophic potential	High catastrophic potential	B
Dread	Is the risk associated to (……) a common risk or a terrible risk?	Common	Dread	B
Immediacy of the effects	Are the effects of the risk associated to (……) immediate, or do they take place later in time?	Immediate	Delayed	C
Severity of the consequences	When the risk associated to (……) appears: how likely is it that the consequences are fatal?	Non-fatal	Fatal	C
Social knowledge	In what degree is the risk associated to (……) known by the exposed population?	No knowledge	High knowledge	C
Social controllability	In what degree can the risk associated to (……) be controlled by the exposed population?	Not controllable	Highly controllable	C

Source: own elaboration

Table 3-2. List of hazards evaluated

1	Motorcycles	21	Fossil fuels
2	Commercial aviation	22	Cell-phone transmission antennas
3	Bicycles	23	Genetic engineering
4	Public transportation	24	Nuclear power
5	Motor vehicles	25	Earthquakes
6	Smoking	26	Floods
7	Alcoholic beverages	27	Landslides
8	Marijuana	28	Wildfires
9	Cocaine	29	Swimming
10	Assaults	30	Ski
11	Terrorism	31	Sunbathing
12	Nuclear weapons	32	Influenza AH1N1*
13	Ozone layer depletion	33	Genetically modified foods*
14	Climate Change	34	Nanotechnology*
15	Air Pollution	35	Tsunamis*
16	Suspended particulate matter	36	Volcano Eruptions*
17	Food coloring substances	37	Droughts*
18	Food preservatives	38	Storms*
19	Chemical fertilizers	39	Extreme temperatures*
20	Pesticides	40	High fat foods*

Note: hazards with (*) were not considered in the 2001 survey

Source: own elaboration

3.2 Instrument validation

The questionnaire was validated through focus group sessions, conducted by the researchers and a sociologist in June 2013. For each questionnaire, a focus group was developed to measure the time length of each questionnaire and to see if the questions were easily understood. Considering that the study would cover a representative sample of Santiago's population, it was decided to use a sub sample of six to eight individuals per focus group, where three criteria were considered in selecting the individuals. Males and females had to be represented in equal number, and four different age groups were established (from 18 to 30 years old, 31 to 45 years old, 46 to 60 years old and over 60 years old) where all categories had to be represented by at least one participant (ideally

two). Since the lowest socioeconomic groups tend to have the poorest quality of education in the country, people belonging to socioeconomic groups C3 and D were selected in order to verify the clarity of the questions of the survey and the time taken to answer them. It was assumed that, if participants with the lowest educational levels in the country could answer the survey without problem, people with higher income and education would comprehend them as well. An introduction was included in the three questionnaires, informing of the content of the survey and the list of hazards. Additionally, an example was included for the three questionnaires to make it easier to respond the questions.

Subjects took 20-30 minutes to answer questionnaire A and 15-20 minutes to answer questionnaires B and C. In general, there were no problems with understanding the questions and hazards, with the only exception of the hazards "Nanotechnology" and "Genetic Engineering", were 50% of the participants of the focus groups claimed to be unfamiliar with them. These technologies were still included in the survey due to the numerous applications of them in Chile (computers and hard drives, cleaning products, frost resistant crops, etc.). For form A (analysis variables), subjects considered the example very helpful to understand the survey, however, for forms B and C (psychometric paradigm) it was considered confusing and not helpful at all. For these reasons, the example was only included in form A. A team of psychologists of Pontificia Universidad Católica that revised the survey also validated the instrument. Annex E shows the final questionnaires that were implemented.

3.3 Instrument Implementation

With the information provided by the National Institute of Statistics (INE)(Instituto Nacional de Estadísticas), 40 blocks were randomly selected from Santiago's street map, where the four socioeconomic groups were equally characterized (10 blocks per socioeconomic level). A theoretical sample of a minimum of 384 participants was established per questionnaire that had to be representative of Santiago's population. To achieve this, the population was segmented by gender, socioeconomic status (ABC1, C2,

C3 and D) and age group (18 to 29 years old, 30 to 35 years old, 46 to 60 years old, and over 60 years old). To reach the number of participant needed, a minimum quota of 12 participants per gender, socioeconomic level and age group had to participate in the survey.

Between July and September, a team of surveyors was hired and trained by the researcher in order to obtain the number of surveys required to achieve representation of the population. Through two training sessions and daily meetings, surveyors learned how to properly administer the survey to the population. The procedure to lift the information for each questionnaire (independently) began in the North-West corner of each block, where subjects were contacted in their households and had to answer the printed survey face to face. Surveyors were allowed to interview only one person per household and had to complete a quota of 12 surveys per block. In case they couldn't complete the required amount of surveys, an adjacent block of similar characteristics was assigned to complete the quota. Subjects took 25-35 minutes to answer questionnaire A and 10-20 minutes to answer questionnaires B and C. Even though 384 surveys was the ideal quota per questionnaire, surveyors were asked to do a larger number of surveys (around 460) in order to eliminate possible outliers later. The sample obtained through this process is shown in Table 3-3**.**

Table 3-3: Sample obtained per questionnaire

Form	S.E. status	18 to 29 years old		30 to 45 years old		46 to 60 years old		Over 60 years old	
		Male	Female	Male	Female	Male	Female	Male	Female
A	ABC1	15	15	15	13	11	13	12	12
	C2	12	13	14	15	19	15	12	16
	C3	13	12	13	14	12	19	12	18
	D	14	12	14	20	13	16	17	14
B	ABC1	12	12	12	12	10	14	13	14
	C2	14	13	13	15	15	12	13	15
	C3	16	14	15	18	15	17	13	16
	D	15	11	14	14	13	15	13	14
C	ABC1	14	14	13	15	14	14	12	12
	C2	13	15	15	13	14	20	13	19
	C3	14	13	13	15	14	16	14	13
	D	14	16	16	16	14	15	16	16

Source: own elaboration

A total of 1,381 surveys were obtained through this procedure, which were later digitalized in Excel and thoroughly revised by the researcher. Mean values and standard deviations were obtained for each question. Respondents who were outside the 95% confidence interval for more than 10% of the questions were considered outliers and purged from the sample. 108 participants were removed from the total sample in this process.

3.4 Data Analysis

The data was analyzed with Excel and the statistical program SPSS17. To compare rating scales of social risk and benefit between the study of 2001 (measured with 10 point scales) and the current study, the scales of 2001 for these variables were converted to a 7 point scale. To study any potential biases between the samples of 2001 and 2013 due to age differences, Tukey's HSD tests were performed by hazard and year. Normality of the data was verified with quantile plots (Q-Q plots), and Levene's test was run to study homogeneity of variances. Reliability of the psychometric scales was measured with Cronbach's alpha (Cronbach, 1951), and confirmatory factor analysis

was performed using Principal Components Analysis (PCA) with varimax rotation, where main factors and the cognitive map were extracted. OLS regression models were used to relate main factors with the three analysis variables (social risks, benefit and acceptability), and perceptions between genders and between years were compared through Independent Samples T-Tests. The different methods and techniques are further explained below.

3.4.1 Tukey's HSD Test

The purpose of Tukey's HSD test is to determine which groups in a sample have significant differences. This test is performed after an ANOVA test, and works by defining an HSD value (honest significant difference), that represents the minimum distance between two group means that must exist before two groups can be considered significantly different.

3.4.2 Normal probability Q-Q plot

Quantile plots (Q-Q plots) are a graphical technique used to determine if a dataset comes from a theoretical probability distribution or if two datasets come from populations with a common distribution (specified or unspecified). These plots are built with the quantiles of a certain dataset against the quantiles of another dataset (or theoretical distribution). A special case of the quantile plot is the normal probability plot, were the normality of a certain data is assessed (the data is set against a theoretical normal distribution) (Heiberger & Holland, 2004). Since normality is one of the requirements to use a parametric test such as independent samples t-test, it is important to check if the data distributes in such way. The straightness of the Q-Q plot indicates the degree of agreement of the data with the theoretical distribution. If a dataset matches with a normal distribution, but has certain departures of normality, the plot will show certain variations:

- S shape: distributions with thinner tails than a normal.
- Inverted S shape: distributions with heavier tails than a normal
- J shape: positive skewness

- Inverted J shape: negative skewness
- Isolated points at the extreme: presence of outliers

3.4.3 Levene's Test of Equality of Variances

When the population variances of two groups are equal, you have homogeneity of variances or homoscedasticity. Even though the violation of this assumption is not too serious, it is important to check it through Levene's test in order to interpret properly the results of an independent samples T-test. If samples have homogeneity of variances, you must consider independent samples t-test calculated with pooled variances, and if the assumption is violated you consider results of the t-test with separate variances (non-pooled).

3.4.4 Principal Components Analysis

Principal components analysis (PCA) is a multivariate technique that reduces a large set of variables into a smaller set of uncorrelated variables (main factors or principal components), explaining as much of the variance as possible. These main factors are a linear combination of original variables (Dunteman, 1989). The goals of PCA are to reduce the dimensionality of the original data set, simplify the description of the data and analyze the structure of the variables (Abdi & Williams, 2010). In this study, main factors were extracted from the mean scores per hazard for the scales of the psychometric paradigm (quantified by participants in questionnaires B and C). To ensure the proper use of this technique, Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy for the overall data set and Bartlett's test of sphericity were implemented.

3.4.4.1 KMO Measure of Sampling Adequacy

The KMO measure is used as an index to determine if variables have a linear relationship between them and if PCA is appropriate to run on the data. Its value can range from 0 to 1, with values above 0.6 suggested as a minimum requirement for sampling adequacy. In this case, the KMO measure was 0.715, which is considered appropriate for the use of PCA, according to (Kaiser, 1974).

3.4.4.2 Bartlett's Test of Sphericity

The null hypothesis of this test is that there are no existing correlations between any of the variables, which would mean that the correlation matrix is an identity matrix. It is important to run this test before using PCA because, if there were no correlations between variables, it would be impossible to reduce them into a smaller number of components. Clearly, you want to reject the null hypothesis of this test in order to perform PCA. In this case, Bartlett's Test of Sphericity was statistically significant ($p<0.0005$) indicating that the data was likely factorable.

3.4.5 OLS Regression Model

This type of regression model allows you to predict a dependent variable based on one or more independent variables. Through OLS regression models, you can determine the overall variance explained of the model and the contribution each of the independent variables (predictors) to the total variance explained.

3.4.6 Independent Samples T-Test

The independent-samples t-test determines if there are statistical significant differences between mean values of two independent groups on a dependent variable. Differences in perceptions between men and women, and changes in risk, benefit and acceptability in the last decade for each hazard (and types of hazard) are determined through this test.

4 RESULTS

4.1 Sample population

1,273 participants composed the sample. Each questionnaire was answered by a representative sample of Santiago, composed by 401 people in questionnaire A (*M*=47 years, *SD*=18 years, 52.3% women), 443 in questionnaire B (*M*=46 years, *SD*=18 years, 50.6% women), and 429 in questionnaire C (*M*=46 years, *SD*=18 years, 51.7% women). The final sample data is described in Table 4-1, along with the data from the study of 2001.

Table 4-1. Description of Sample

Variables	Sample population	
	2001	2013
	n=508	*n*=1,273
Demographic Data		
Gender (%Female)	54.5	51.4
Age (average)	33	46
Marital Status		
Single (%)	59.9	40.4
Married (%)	40.1	59.6
Socioeconomic Data		
Average family income (current US$/month)	1,874	1,720
Occupation		
Employed (%)	69.8	48.9
Unemployed (%)	16.5	5.6
Studying (%)	12.5	11.3
Homemaker(%)	0.8	15.5
Retired(%)	0.4	18.7

Source: own elaboration

Considering that the mean age of the samples of 2001 and 2013 are rather different (33 and 46 years old), a Tukey's HSD (honest significant difference) test was performed for each hazard per year, to observe if there were significant differences between age groups for mean values of social acceptability, risk and benefit. The purpose was to study the homogenous subsets of the test and determine if these age differences could be a bias for

the study. The result of the test was that, for the majority of hazards, there were no significant differences in mean values for any of the groups. Only for a small group of hazards, significant differences between mean values were observed between the youngest and the oldest participants, but these groups had no significant differences with the other demographics. To illustrate this, Table 4-2 shows the homogenous subsets obtained for nuclear weapons and genetic engineering.

Table 4-2. Nuclear weapons and genetic engineering's homogenous subsets for α = 0.05 (Tukey's HSD, dependent variable = social acceptability)

	Nuclear weapons				Genetic engineering				
	2001		2013		2001			2013	
Age Group	N	Set 1	N	Set 1	N	Set 1	Set 2	N	Set 1
60-95	4	2	91	1.14	4	**2.25**		58	3.24
36-41	19	2.21	35	1.46	18	3.56	3.56	28	3.32
30-35	28	2.11	38	1.13	29	3.79	3.79	30	3.57
48-53	7	3.57	38	1.16	7	3.86	3.86	32	3.44
54-59	9	2.78	39	1.13	10	4.00	4.00	27	2.89
42-47	13	3.00	36	1.22	14	4.07	4.07	31	3.74
24-29	65	3.42	54	1.54	65		**4.72**	51	3.57
18-23	28	3.14	38	1.42	28		**4.89**	35	3.37
Sig.	173	0.683	369	0.087	175	0.195	0.588	292	0.463

Source: own elaboration

The case of nuclear weapons shows that all age groups have no significant differences in their mean scores, which is replicated for the majority of hazards. Mean values for acceptability regarding genetic engineering show that there are significant differences between 18-29 year old participants with 60-95 year old participants in the sample of 2001, which is a usual difference found when surveying a sample.

Considering that the other hazards had similar results, this information indicates that, in general, participants of different age groups assess acceptability with no significant

differences. Therefore, it is appropriate to compare the samples of 2001 and 2013 to study the evolution of perceptions in the last decade.

4.2 Transformation of Likert scales

In 2001, all variables and risk attributes were rated on a 7 point Likert scale, with exception of social risk and benefit which were rated on a 10 point scale. To compare the data of both years (in 2013 all variables were measured on 7 point Likert scales), all variables must be on scales with the same length. Following the recommendations of the study by (Colman et al., 1997), a linear transformation was used to convert the data of 2001 for social risk and benefit to a 7 point scale. The transformation equation applied to the data of 2001 is shown below:

$$y = \frac{6}{9} * (x - 1) + 1 \qquad (1)$$

In this equation, the 'x' represents the scores of the 10 point Likert scale and the 'y' represents the converted scores to a 7 point Likert scale. A correlation of 0.900 can be found between the original and the tranformed data of social risk, and, for social benefit, a correlation of 0.964 can be found between the original and transformed data (both values being significant at the 0.01 level). With these transformations, the pattern of results is very similar to the original data set and to standarized data, reflecting that it is appropiate to use the transformed data to analyze the evolution of risk and benefit perceptions between years.

4.3 Normality of the data

In order to compare perceptions between years with parametric tests, the assumption of a normal model must be met. For each year, the three analysis variables were tested for normality with normal probability Q-Q plots. In these plots, the data for the three variables appeared very similar to the theoretical normal distribution, clearly indicating that the underlying population was normally distributed. A very subtle inverted S shape

can be observed in all the plots, indicating slightly heavier tails in the datasets than in a theoretical normal distribution (to view the plots go to Annex A).

4.4 Homogeneity of variance

Homogeneity of variance was studied for each analysis variable with Levene's test for equality of variances, where the variances of a hazard were compared between years for social risk, benefit and acceptability. In this process, it was determined that homogeneity differed between hazards and variables, with some hazards having homoscedasticity for one variable but not the other. Since this study compared mean values between years for each hazard with independent samples t-test, and this test offers two results for each hazard (assuming equal variances and not assuming equal variances), this is not an issue, and for every case the proper result was considered.

4.5 Description of Attributes

Considering the resulting factor structures obtained in the previous studies by Bronfman and colleagues, scale directions of social knowledge, control and novelty were inverted to have all attributes of a same factor with positive correlations (variables must measure a common entity in order to obtain positive alpha scores, which explains why they must correlate positively (Dixon, 2003; SAS Documentation, 2013)). "No knowledge", "no controllability" and "new" became the high ends of the scales. Global mean values and standard deviations for each risk attribute are shown in Table 4-3, where it is observable that there are no significant changes in attribute scores between 2001 and 2013.

When the population rates a hazard for its level of dread, this is highly correlated with the scores of catastrophic potential, lack of control, involuntariness and severity of consequences (see Table 4-4). On the other hand, scores of delayed effects, lack of knowledge and novelty have high correlations between them. For mean scores of risk attributes per hazard, go to Annex C.

Table 4-3. Mean values (standard deviations) for risk attributes in 2001 and 2013

Attribute	2001	2013
Common - Dread	3.67	3.75
	(1.31)	(1.37)
Voluntary - Involuntary	4.20	4.17
	(1.72)	(1.68)
Not Catastrophic - Catastrophic	4.55	4.20
	(1.15)	(1.27)
Control - No Control	4.04	4.09
	(1.39)	(1.29)
Non-Fatal - Fatal	4.58	4.99
	(0.96)	(0.75)
Knowledge - No Knowledge	3.78	3.40
	(1.09)	(0.88)
Old - New	3.35	2.99
	(1.12)	(0.99)
Immediate - Delay	3.61	3.52
	(1.68)	(1.60)

Note: no significant differences for any mean score between 2001 and 2013

Source: own elaboration

Table 4-4. Correlation matrix of risk attributes (combined 2001-2013)

	Dread	Catastrophic Potential	Involuntariness	Lack of Controllability	Severity of consequences	Degree of Knowledge	Novelty	Delayed Effects
Dread	1.00							
Catastrophic Potential	0.92	1.00						
Involuntariness	0.76	0.69	1.00					
Lack of Controllability	0.76	0.68	0.91	1.00				
Severity of consequences	0.69	0.64	0.33	0.45	1.00			
Degree of Knowledge	-0.10	-0.07	0.19	0.11	-0.46	1.00		
Novelty	0.01	0.00	0.18	0.13	-0.39	0.89	1.00	
Delayed Effects	-0.13	-0.03	-0.16	-0.24	-0.38	0.64	0.67	1.00

Source: own elaboration

4.6 Factor analysis

Based on a hazard x attribute rating matrix (created by averaging responses over participants), PCA was performed and a classic factor structure was obtained, accounting for 86% of sample's variance (see Table 4-5). The first factor, labeled *Dread Risk,* was composed of four attributes (social control, dread, voluntariness and catastrophic potential). Severity, degree of knowledge, immediacy of effects and degree of novelty formed the second factor, labeled *Unknown Risk.*

The only difference in relation to the factors obtained in 2001 was that the attribute "Severity of consequences" (Non-fatal to Fatal) switched from Factor 1 to Factor 2. This is not surprising since, in both years, this attribute correlates well with both factors.

Table 4-5: Rotated components matrix for each year

	2001			2013		
Attributes	F1	F2	Communalities	F1	F2	Communalities
Common - Dread	**0.951**	-0.074	0.909	**0.947**	-0.142	0.917
Not Catastrophic - Catastrophic	**0.883**	-0.035	0.781	**0.944**	-0.167	0.919
Voluntary - Involuntary	**0.818**	0.172	0.699	**0.950**	0.085	0.910
Control - No Control	**0.838**	0.128	0.718	**0.954**	-0.049	0.912
Non-Fatal - Fatal	**0.832**	-0.315	0.791	0.419	**-0.777**	0.780
Knowledge - No knowledge	0.011	**0.960**	0.921	0.065	**0.928**	0.866
Old - New	0.058	**0.933**	0.873	0.161	**0.946**	0.921
Immediate - Delay	-0.074	**0.832**	0.697	-0.204	**0.776**	0.644
Total variance explained	47%	33%		48%	38%	

Source: own elaboration

4.6.1 Combined Factor Analysis

Since there are no major differences between 2001 and 2013 in the composition of factors, a factor analysis was performed combining the information of 2001 and 2013, to observe the changes of each hazard in the cognitive map. This model explained 81% of sample's variance and showed no relevant differences in composition with the factors previously obtained in this study (see Table 4-6).

Internal consistency of the scales was studied through Cronbach's alpha considering aggregated data by participants (matrix of scales and hazards). Factor 1 had an alpha of 0.935 and Factor 2 had an alpha of 0.838. (Nunnally & Bernstein, 1994) suggest a value of 0.70 as the lower acceptable bound for alpha, and (DeVellis, 2003) considers alpha ranges over 0.80 as "very good", indicating that the scales obtained in this study are of a very high degree of reliability.

Table 4-6. Rotated components matrix for factor analysis 2001-2013

Attributes	F1	F2	Communalities
Common - Dread	**0.946**	-0.112	0.907
Not Catastrophic - Catastrophic	**0.899**	-0.075	0.814
Voluntary - Involuntary	**0.893**	0.134	0.816
Control - No Control	**0.907**	0.045	0.824
Non-Fatal - Fatal	**0.630**	-0.544	0.693
Knowledge - No knowledge	0.046	**0.948**	0.900
Old - New	0.107	**0.941**	0.897
Immediate - Delay	-0.141	**0.791**	0.646
Total variance explained	47%	34%	

Source: own elaboration

Source: own elaboration

Figure 4-1 shows the cognitive map for the 31 hazards and indicating their positions in 2001 and 2013. General tendencies regarding the positioning of hazards in the map have not been considerably altered through time.

Aligned with results observed in the study by Slovic (1987) and colleagues, Factor 1 ("Dread Risk") is defined at its high end by perceived catastrophic potential, dread, lack of control, involuntariness and fatal consequences (severity). Factor 2 ("Unknown Risk") is defined at its high end by hazards that are judged as unknown, new and delayed manifestation of harm.

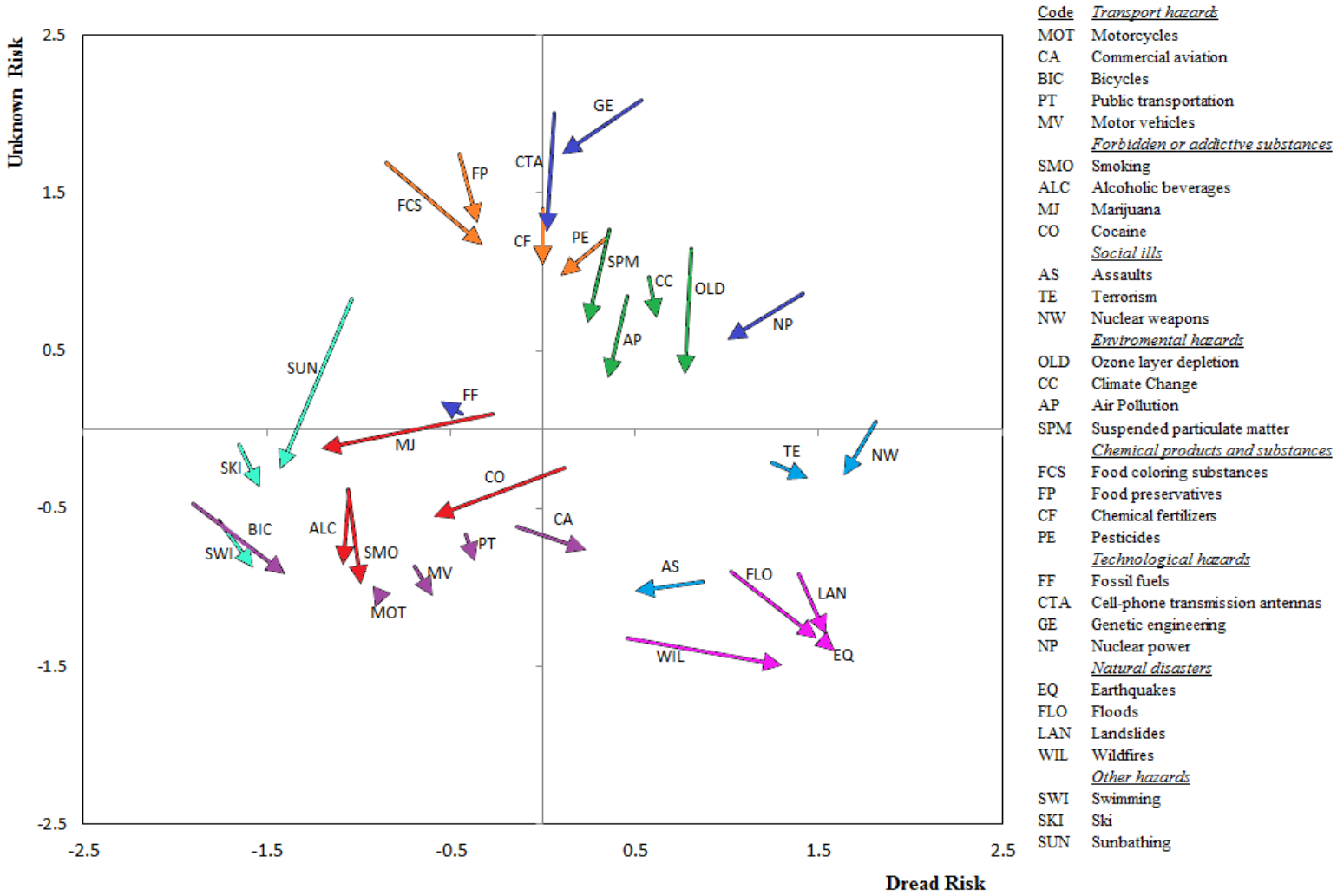
An important observation that can be drawn from the cognitive map, is that the great majority of risks have lower scores in Factor 2 in 2013 than they did in 2001. This means that, in general, the population has a better understanding of risks and perceives them as older risks. Evidently, education has a very important role in this change of perception, since it provides the necessary tools for the population to understand risks.

Most hazards remain in the same quadrants than a decade ago, showing that their relative positions have had no drastic alterations. Technological and environmental hazards are still located in the upper right quadrant, which is the quadrant with highest scores for "Dread Risk" and "Unknown Risk". The level of dread that these hazards produce in the population is high, and it is very likely that more strict regulation to achieve risk reduction of these hazards is what the public wants (Slovic, 1987).

Chemical products and substances (and one technological hazard) are located in the upper left quadrant, where there are high scores of "Unknown Risk" and low scores of "Dread Risk". These hazards are perceived as more common, with lower perceptions of catastrophic potential and higher controllability than those positioned in the right upper quadrant.

Natural disasters and social ills continue to be located in the lower right quadrant, which is where hazards with the highest scores of "Dread Risk" and lowest scores of

"Unknown Risk" are positioned. Hazards that fall into this category have characteristics that make them well known and understood by the population but at the same time are



Code	*Transport hazards*
MOT	Motorcycles
CA	Commercial aviation
BIC	Bicycles
PT	Public transportation
MV	Motor vehicles
	Forbidden or addictive substances
SMO	Smoking
ALC	Alcoholic beverages
MJ	Marijuana
CO	Cocaine
	Social ills
AS	Assaults
TE	Terrorism
NW	Nuclear weapons
	Enviromental hazards
OLD	Ozone layer depletion
CC	Climate Change
AP	Air Pollution
SPM	Suspended particulate matter
	Chemical products and substances
FCS	Food coloring substances
FP	Food preservatives
CF	Chemical fertilizers
PE	Pesticides
	Technological hazards
FF	Fossil fuels
CTA	Cell-phone transmission antennas
GE	Genetic engineering
NP	Nuclear power
	Natural disasters
EQ	Earthquakes
FLO	Floods
LAN	Landslides
WIL	Wildfires
	Other hazards
SWI	Swimming
SKI	Ski
SUN	Sunbathing

Source: own elaboration

Figure 4-1: Position of hazards in factorial map in 2001 and 2013 (movement shown by arrows)

perceived with high levels of dread, lack of control and catastrophic potential. Even though natural disasters had high scores for Factor 1 in 2001, they continue to move to the high extreme of the scale, and are perceived are more dreadful, catastrophic and less controllable than before. Finally, transport hazards, forbidden and addictive substances and other hazards fall in the lower left quadrant, where there are low scores for both factors. Hazards that are positioned in this quadrant represent those hazards that the population perceive as old risks with high degree of knowledge and control.

Genetic engineering is still perceived in the highest position regarding Factor 2. After 12 years, floods, earthquakes, landslides, wildfires, terrorism and nuclear weapons continue to be perceived as the most dreaded hazards. By observing the cognitive map, it is clear that scores for "Unknown Risk" in 2013 are lower than those of 2001.

The hazards with the most pronounced movements in the factor space (greater than 0.5 in a factor) were studied, in order to determine if their movements were because of changes in all attributes or because of a change in a particular set of attributes. For Factor 1, bicycles moved towards the right due to significantly higher scores in the severity of consequences attribute (+1.85)[1] and lack of controllability (+0.84). Marijuana and cocaine have moved to the left due to significantly lower scores for catastrophic potential (-2.31 for marijuana and -2.12 for cocaine) and dread (1.53 for marijuana and -1.23 for cocaine). Wildfires have moved considerably to the right, and this movement is because scores for all attributes in Factor 1 have significantly increased for this hazard. Nowadays, the population perceives wildfires to be more dreadful, catastrophic, involuntary, severe and less controllable. Food coloring substances is the only hazard that shows large movements in both factors. For Factor 1, significantly higher scores can be observed in all attributes with exception of lack of controllability, explaining its movement towards the right end of the scale. For Factor 2, the population perceives to

[1] Changes in scores between 2001 and 2013 for the given attribute, on a 7 point Likert scale. A positive (negative) sign means that there is an increase (decrease) in an attributes' score.

have a higher degree of knowledge of food coloring substances (+0.78), explaining why this hazard has moved to the lower end of the scale. Smoking and air pollution also show movements in this factor towards the lower end of the scale, which is explained by similar score differences between years in all the attributes that compose this factor (between |0.42| and |0.58|). Both hazards are perceived today with higher degree of knowledge, as older risks and effects are sensed as more immediate than before. Ozone layer depletion, sunbathing, cell phone transmission antennas and suspended particulate matter have moved in Factor 2 mainly because they are perceived as older risks and with greater degree of knowledge than before, with significant differences for these attributes between years ($-1.16_{Novelty}$, $-0.73_{Unknowledge}$ for ozone layer depletion, $-0.69_{Novelty}$, $-0.78_{Unknowledge,}$ for suspended particulate matter, $-1.32_{Novelty}$, $-0.95_{Unknowledge}$ for cell phone transmission antennas and $-1.29_{Novelty}$, $-0.93_{Unknowledge}$ for sunbathing).

4.7 Changes in male and female perceptions during the last decade

In a decade, risk perceptions have significantly changed in the Chilean population. With an improved quality of life, better education and opportunities, social acceptability and benefit perceptions are significantly lower and risk perceptions higher in 2013 than in 2001 for the total population.

Table 4-7. Mean scores (standard deviations) for analysis variables in 2001 and 2013

Variable	Year	Male	Female	Total Sample
Social Risk	2001	4.66 **	4.90**	4.78
		(1.87)	(1.86)	(1.87)
	2013	4.99**	5.26**	5.13
		(1.88)	(1.79)	(1.84)
Social Benefit	2001	3.93	3.94	3.93
		(2.12)	(2.00)	(2.06)
	2013	2.76	2.76	2.74
		(2.05)	(2.11)	(2.08)
Social Acceptability	2001	3.82**	3.52**	3.67
		(2.00)	(2.04)	(2.03)
	2013	2.81	2.82	2.81
		(1.89)	(1.99)	(1.94)

** Significant differences between genders of a same year at $p<0.01$.

Source: own elaboration

As shown in Table 4-7, for each gender, mean values for risk, benefit and acceptability show significant differences ($p<0.01$) between 2001 and 2013. In general, both genders appreciate hazards today as less acceptable, with higher social risk and lower benefit perceptions. Women and men continue to perceive social risk significantly different in 2013, despite narrower differences in education than before. In 2001, significant differences in risk perceptions between genders could be observed for natural and technological hazards, forbidden or addictive substances, social ills and other hazards. Nowadays, these differences keep existing (with exception of natural hazards), and transport hazards, and chemical products and substances are also added to hazards where genders have significant differences for social risk.

In benefit scores, males and females of 2001 show significant differences for transport and environmental hazards. In 2013, these differences keep existing and chemical products and substances and natural hazards are also perceived by males and females with significant differences.

Acceptability scores show the opposite effect. In 2001, significant differences existed for forbidden or addictive substances, social ills, chemical products and substances, technological and natural hazards. The present situation has changed considerably, with men and women having very similar mean scores for acceptability in 2013 and no significant differences in their perceptions for all hazards, with exception of transport hazards (at $p<0.05$). Table 4-8 shows mean scores of risk, benefit and acceptability perceptions by gender and year.

Table 4-8. Mean scores for analysis variables by gender and year

	Social Risk				Social Benefit				Social Acceptability			
	2001		2013		2001		2013		2001		2013	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Transport hazards[(b)(c) (d) (f)]	3.65	3.69	3.96	4.29	5.73	5.46	5.22	5.40	4.87	4.69	4.80	4.96
Forbidden or addictive substances[(a)(b)(e)]	5.55	5.91	5.54	5.82	2.24	2.09	1.79	1.68	3.01	2.50	2.27	2.30
Social ills[(a)(b)(e)]	5.56	5.92	5.66	6.13	1.81	2.08	1.17	1.17	2.84	2.43	1.26	1.27
Environmental hazards[(c) (d)]	5.38	5.47	5.70	5.83	1.54	1.94	1.57	1.47	3.03	2.91	1.80	1.73
Chemical products and substances[(b (d)(e)]	4.32	4.33	5.18	5.37	3.14	3.15	2.28	2.10	3.75	3.47	2.59	2.52
Technological hazards[(a) (b) (e)]	4.14	4.46	4.52	4.94	4.46	4.36	3.60	3.42	4.04	3.66	3.41	3.30
Natural hazards[(a)(d)(e)]	5.33	5.72	5.88	6.02	1.42	1.43	1.26	1.17	3.71	3.37	1.48	1.46
Other hazards[(a)(b)]	3.36	3.79	3.57	3.84	4.04	3.98	4.67	4.82	5.14	4.93	4.34	4.55

[(a)] Significant differences between genders of 2001 for social risk at $p<0.05$.
[(b)] Significant differences between genders of 2013 for social risk at $p<0.05$.
[(c)] Significant differences between genders of 2001 for social benefit at $p<0.05$.
[(d)] Significant differences between genders of 2013 for social benefit at $p<0.05$.
[(e)] Significant differences between genders of 2001 for social acceptability at $p<0.05$.
[(f)] Significant differences between genders of 2013 for social acceptability at $p<0.05$.

Source: own elaboration

Very high correlations between risk, benefit and acceptability can be observed in Table 4-9. Benefit and acceptability have a positive correlation between them, while risk has a negative correlation with the two other variables.

Table 4-9: Bivariate correlation between social risk, social benefit and social acceptance

Year (Survey Date)		Social risk	Social benefit
2001	Social benefit	-0.787*	1.000
	Social acceptability	-0.929*	0.713*
2013	Social benefit	-0.923*	1.000
	Social acceptability	-0.917*	0.988*

*** Indicates p<0.01 for the correlation being equal to zero.**

Source: own elaboration

4.8 Relationship between factors of the psychometric paradigm and perceptions of analysis variables

OLS regression models were run to predict perceived social risk, benefit and acceptability from Factor 1 and Factor 2. The assumptions of linearity, independence of errors, unusual points and normality were met. Only Factor 1 predicted the three variables with statistical significance ($p<0.05$). For both years, higher scores in Factor 1 relate with an inequitable distribution of risks and benefits (high risks and low benefits), which lead as well to a low perception of acceptability. Regression coefficients and significance levels can be found in Table 4-10.

Table 4-10. Standarized coefficients from OLS regression models

			Standarized coefficients		
Dependent variables	Year	Independent variables	Beta	t	p-value
Social Risk	2001	Factor 1: Dread Risk	0.69	5.08	0.00
		Factor 2: Unknown Risk	-0.05	-0.35	0.73
	2013	Factor 1: Dread Risk	0.53	3.36	0.00
		Factor 2: Unknown Risk	-0.13	-0.80	0.43
Social Benefit	2001	Factor 1: Dread Risk	-0.51	-3.18	0.00
		Factor 2: Unknown Risk	-0.05	-0.34	0.74
	2013	Factor 1: Dread Risk	-0.59	-3.83	0.00
		Factor 2: Unknown Risk	-0.03	-0.23	0.82
Social Acceptability	2001	Factor 1: Dread Risk	-0.59	-3.96	0.00
		Factor 2: Unknown Risk	-0.20	-1.33	0.20
	2013	Factor 1: Dread Risk	-0.67	-4.72	0.00
		Factor 2: Unknown Risk	-0.01	-0.07	0.95

Source: own elaboration

4.9 Changes in social perceptions analyzed by type of hazard

Table 4-11 shows mean scores of risk perceptions by type of hazard. In general, risk perception of today's population has become higher than it was a decade ago, with the exception for the groups of forbidden and addictive substances, social ills and other hazards. Natural hazards have the highest risk perceptions for 2013, which significant changes from 2001 ($\Delta_{Risk} = 0.43$). The largest difference in risk perceptions can be observed for the group of chemical products and substances ($\Delta_{Risk} = 0.95$).

Table 4-11. Risk perception mean scores by type of hazard

Type of Hazard		Mean	Std. Deviation
Transport hazards**	2001	3.67	1.78
	2013	4.13	1.85
Forbidden or addictive substances	2001	5.73	1.49
	2013	5.68	1.67
Social ills	2001	5.74	1.69
	2013	5.90	1.79
Environmental hazards**	2001	5.43	1.58
	2013	5.77	1.42
Chemical products and substances**	2001	4.32	1.71
	2013	5.28	1.53
Technological hazards**	2001	4.30	1.75
	2013	4.73	1.74
Natural hazards**	2001	5.53	1.60
	2013	5.96	1.37
Other hazards	2001	3.57	1.75
	2013	3.71	1.86

** Scores significantly different at $p<0.01$

Source: own elaboration

For all types of hazards there is a significant difference in the last decade for social benefit perceptions, where all types of hazards are perceived as less beneficial than in 2001 (see Table 4-12). The largest differences were observed for chemical products and substances ($\Delta_{Benefit} = -0.96$) and technological hazards ($\Delta_{Benefit} = -0.91$). Without considering social ills, natural and environmental hazards (evidently perceived as not beneficial at all), forbidden or addictive substances and chemical products and substances were perceived as the groups with less benefit in 2013.

Table 4-12. Benefit perception mean scores by type of hazard

Type of Hazard		Mean	Standard Deviation
Transport hazards**	2001	5.59	1.47
	2013	5.32	1.57
Forbidden or addictive substances**	2001	2.17	1.42
	2013	1.73	1.22
Social ills**	2001	1.92	1.55
	2013	1.17	0.61
Environmental hazards**	2001	1.74	0.96
	2013	1.52	0.96
Chemical products and substances**	2001	3.15	1.64
	2013	2.18	1.44
Technological hazards**	2001	4.41	1.67
	2013	3.51	1.82
Natural hazards**	2001	1.42	0.80
	2013	1.22	0.56
Other hazards**	2001	4.01	1.89
	2013	4.74	2.02

** Scores significantly different at $p<0.01$

Source: own elaboration

Overall, social acceptability has also decreased in the past decade (see Table 4-13). For seven of the eight types of hazards, mean scores for acceptability have become significantly lower ($p<0.01$) in 2013 than in 2001, with transport hazards being the only exception. The most dramatic change in acceptability perception can be observed for the group of natural hazards ($\Delta_{Acceptability} = -2.07$), which is followed by the group of social ills ($\Delta_{Acceptability} = -1.37$).

Table 4-13. Acceptability perceptions mean scores by type of hazard

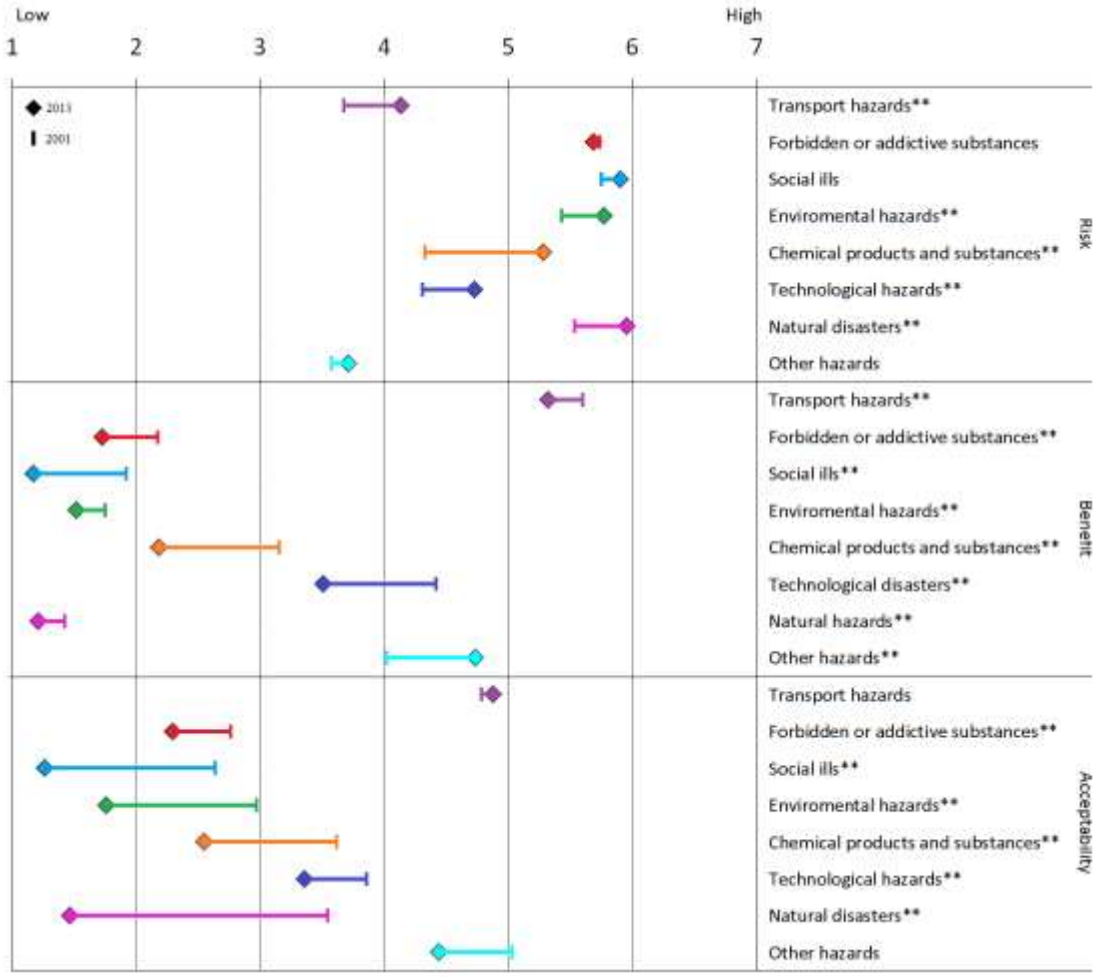
Type of Hazard		Mean	Standard Deviation
Transport hazards	2001	4.78	1.92
	2013	4.88	1.61
Forbidden or addictive substances**	2001	2.76	1.82
	2013	2.29	1.58
Social ills**	2001	2.64	1.96
	2013	1.27	0.77
Environmental hazards**	2001	2.97	1.87
	2013	1.76	1.15
Chemical products and substances**	2001	3.61	1.73
	2013	2.55	1.54
Technological hazards**	2001	3.85	1.89
	2013	3.36	1.75
Natural hazards**	2001	3.54	1.88
	2013	1.47	0.90
Other hazards**	2001	5.03	1.74
	2013	4.44	1.90

** Scores significantly different at $p<0.01$

Source: own elaboration

Source: own elaboration

Figure 4-2 shows the differences in mean scores between years for the three analysis variables graphically. In general, perceptions of social acceptability are the most different ones between 2001 and 2013, and social risk perceptions show the least variations between years of all variables.



Source: own elaboration

Figure 4-2. Changes in risk, benefit and acceptability perceptions between 2001 and 2013.

4.10 Changes in social perceptions analyzed by hazard

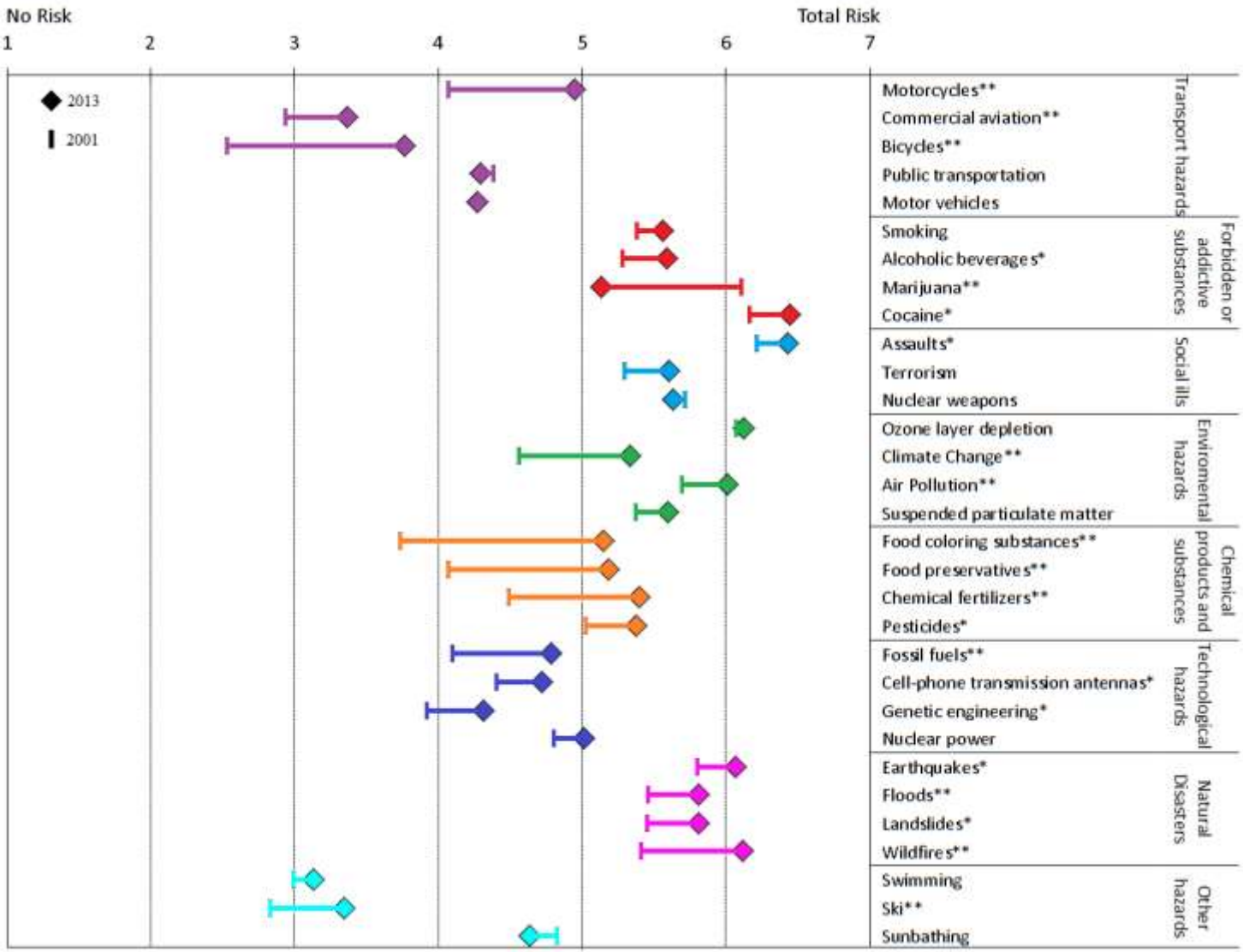
Source: own elaboration

Figure 4-3 shows the changes in risk perception for each hazard between 2001 and 2013. The dominant result is that the population perceives hazards to be riskier than a decade ago. Mean scores of each hazard for this variable are shown in Table 7-3 found in Annex C. Marijuana is the only hazard that is now perceived significantly with less risk than in the past, with a mean of 6.11 (*SD*=1.34) in 2001 and of 5.14 (*SD*=1.92) in 2013. Media frenzy towards this topic and political and social debates towards the legalization of marijuana have made it one of the most discussed topics in the country in 2013, with politicians and local celebrities standing forward towards legalizing the drug and claiming it has no associated risks. This has greatly influenced the public's opinion towards marijuana, and it is a possible explanation of why people perceive fewer risks towards consuming such drug.

Swimming, skiing, commercial aviation and bicycles are perceived as the hazards with the lowest risks of all, but are perceived as significantly riskier than in 2001, with exception of swimming (no significant differences). Cocaine, assaults, ozone layer depletion, air pollution, earthquakes and wildfires are the hazards with the highest risk perception scores in 2013, with only ozone layer depletion having no significant differences between years. The hazards that show the largest differences between perceptions of 2001 and 2013 are bicycles, climate change, food coloring substances, food preservatives, chemical fertilizers and fossil fuels, which can be explained by a greater degree of knowledge and concern of the population towards them.

General tendencies regarding benefit perceptions show that the population perceives hazards as less beneficial than they did a decade ago. The only exceptions can be observed for bicycles, swimming, skiing and sunbathing, which are perceived significantly more beneficial than in 2001. Hazards that were perceived as the most beneficial in 2013 where mostly transport hazards (with the only exception of

motorcycles) and swimming and skiing (other hazards), which can be related to recreational activities and sports. There are a large number of hazards that score towards



Source: own elaboration

Figure 4-3. Changes in risk perception by hazard

to the lowest end of the benefit scale (between 1-2) that are considered as the least beneficial hazards of all. These are all natural disasters, social ills, environmental hazards, alcoholic beverages, cocaine and food coloring substances. The biggest differences in benefit perception between 2001 and 2013 can be observed for nuclear weapons, food preservatives, chemical fertilizers, pesticides, fossil fuels and skiing. All environmental hazards show no significant differences in benefit perceptions between years. Source: own elaboration

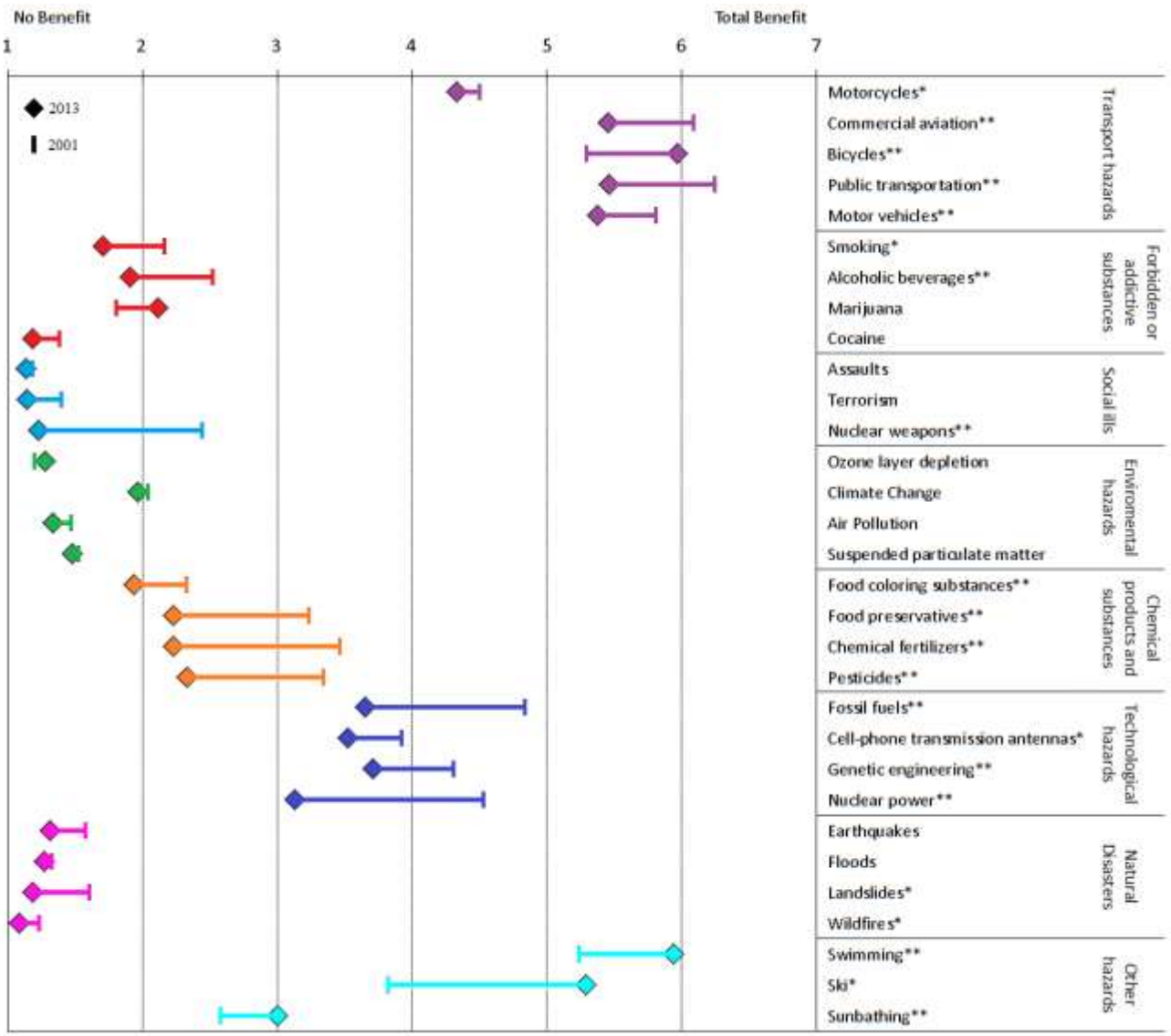
Figure 4-4 shows benefit perceptions for each hazard and their changes in the last decade.

Source: own elaboration

Figure 4-5 shows changes in acceptability perceptions for each hazard. There has been a remarkable change in the past decade, where risks associated to hazards are generally perceived as drastically more unacceptable than in the past (motorcycles, marijuana and cell phone transmission antennas are the only hazards with no significant differences) . Risks associated to public transportation and motor vehicles are the only ones perceived with significantly higher acceptability in 2013 than in 2001. Hazards with the highest acceptability perceptions are the same than those with the highest benefits (transport hazards excluding motorcycles, swimming, and skiing). Cocaine, ozone layer depletion, air pollution, suspended particulate matter, natural disasters and social ills are the hazards with the most unacceptable risks.

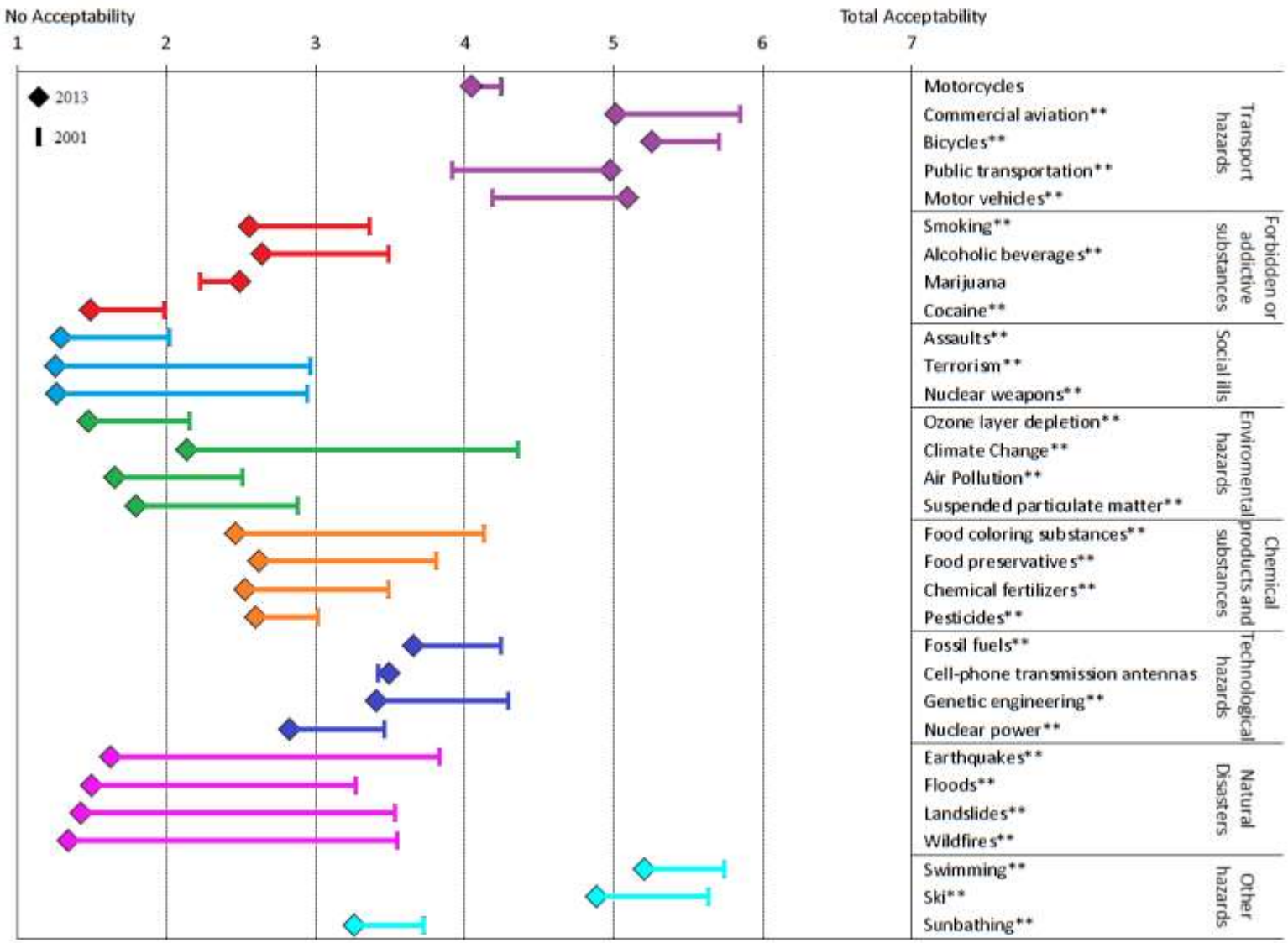
Santiago's low air quality continues to be a very relevant issue for the local population, which is constantly affected by high pollution episodes (especially during the winter). Awareness for global environmental hazards has increased over the last decade, especially regarding climate change, which is one of the hazards that show the largest differences in terms of acceptability between 2001 and 2013 (going from a mean score of 4.35 (*SD*=1.92) in 2001 to 2.14 (*SD*=1.40) in 2013). Mean scores of acceptability for each hazard are shown in table in Table 7-5 in Annex C.

Transport hazards continue to be associated with high social acceptability, high benefits, and low risk perceptions, especially for public transportation, motor vehicles and bicycles. This last hazard is perceived with higher social risk and benefits than in 2001,



Source: own elaboration

Figure 4-4. Changes in benefit perception by hazard



Source: own elaboration

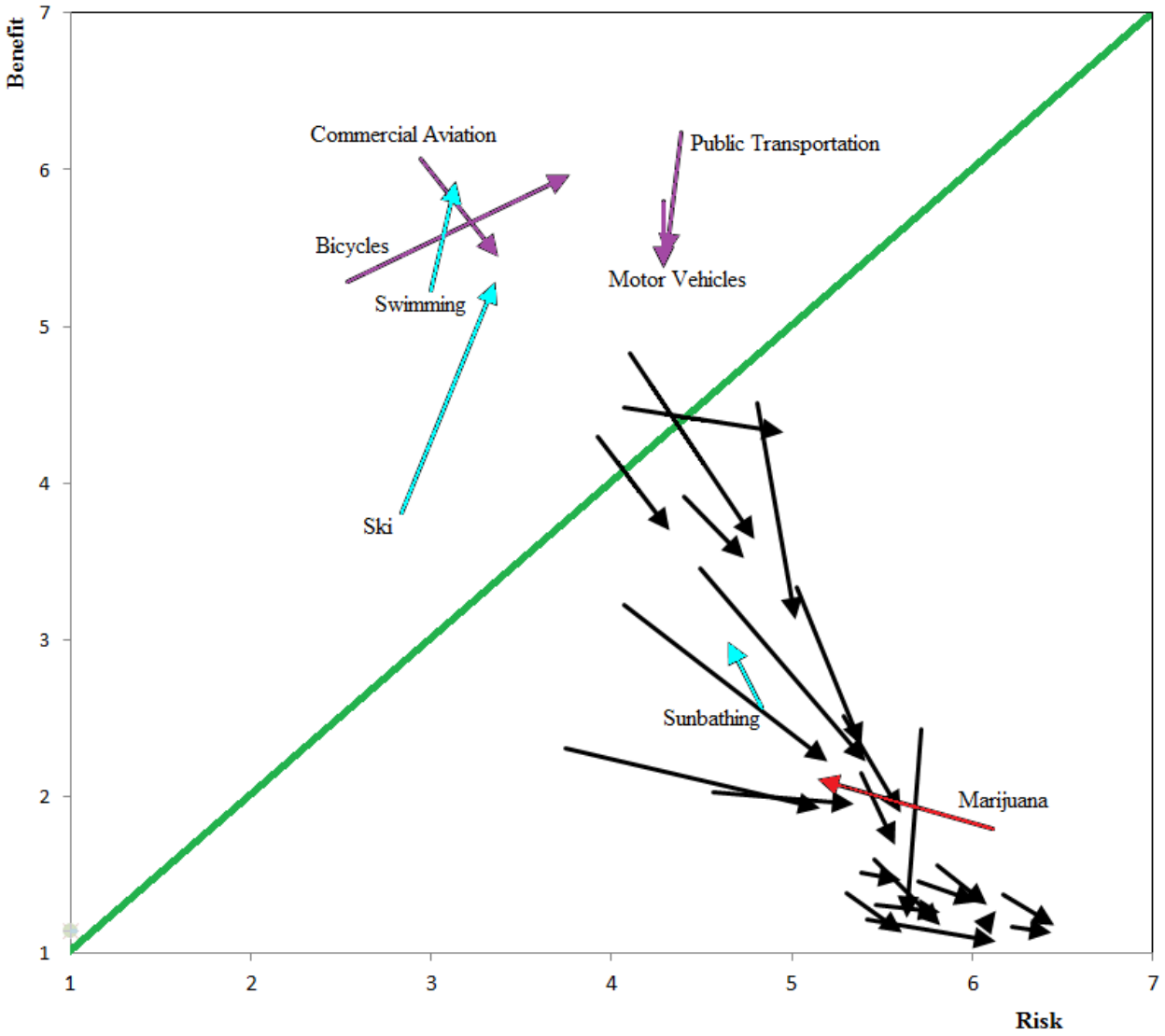
Figure 4-5. Changes in acceptability perception by hazard

which goes against the general tendency of higher risks implying lower benefits. Over the last decade, people have begun to implement the use of bicycles as a mean of transportation to work and to their daily activities, which has made them more vulnerable and exposed to accidents and injuries (higher social risk perception). At the same time, the use of bicycles, not only for recreational purposes but also as a mean of transportation, translates in monetary savings, exercise and the replacement of fossil fuels, which is highly beneficial.

In order to observe the relationship between risk, benefit and acceptability perceptions of the 31 hazards, a risk-benefit map was developed (Source: own elaboration

Figure 4-6), where the arrows show the changes in perceptions from 2001 to 2013. The dominant direction of the hazards is towards higher risk and lower benefit perceptions, with one variable correlating negatively with the other (the higher the perceived risk, the lower the perceived benefit). However, there are some exceptions to the general tendency that are worth mentioning. For the case of marijuana, perceived benefits have barely any effect on perceived risks. Despite the fact that this drug shows lower perceptions of risk in 2013, its scores for benefit remain almost the same, with no significant differences. Sunbathing also goes in the opposite direction of the other hazards, with lower risk perceptions and higher benefit perceptions in 2013 than in 2001. With barely any changes in their social risk scores, commercial aviation, motor vehicles and public transportation are perceived with fewer benefits than 2001, and ski and swimming have an important increase in benefit perceptions. Bicycles show a positive correlation between risk and benefit.

The hazards that are positioned in the upper triangle of the map are those perceived as acceptable by the public, with higher benefits than risks. Consistent with previous results, transport hazards, swimming and ski are the only hazards with acceptable risks.



Source: own elaboration

Figure 4-6. Risk-Benefit Map (movement from 2001 to 2013 perception scores shown by arrows)

5 CONCLUSIONS

Our results show that the psychometric paradigm has had no relevant differences over the last decade. Mean scores for each attribute had no significant differences between 2001 and 2013. The same factor structure was obtained, with very small differences in its composition. Laypeople's risk perceptions and attitudes are closely related to the position a hazard has in the cognitive map, with Factor 1 remaining as the most important factor in explaining risk, benefit and acceptability perceptions for 2001 and 2013 (high scores in this factor relate to high risk, low benefit and low acceptability).

Social risk perception, benefit and acceptability have significantly changed over the past decade: today's population perceives hazards with higher risks and less acceptability and benefits than a decade ago.

Social and cultural changes have clearly made differences for male and female's perceptions. Hazards are less acceptable today than in 2001 for both genders, and perceptions of social risk and benefit have intensified (more risk and less benefit). Regarding social acceptability, both genders have almost equal perceptions, which was not the case in 2001. However, they still have significant differences in how they perceive risk, and show to have different risk perceptions for a larger type of hazards than in the past.

Natural disasters, social ills and environmental hazards are perceived with higher unacceptability and higher social risk than in 2001, due to the fact that a large number of natural hazards have affected the country and the population is more aware and demanding improvements regarding social ills and environmental conditions.

5.1 A challenge for regulators

With better economic and social conditions, the dominant perception for Chileans is that they face more risks today than in the past. Tolerance towards risk is much lower than before, and general levels of acceptability have decreased significantly since 2001.

Studies by (Slovic, 1999) and (Wildavsky, 1979) have the same findings for the United States population, where they discuss the apparent pursuit of the American population towards a zero-risk society. In Slovic's investigation, he comments the following:

"Ironically, as our society and other industrialized nations have expended great effort to make life safer and healthier, many in the public have become more, rather than less, concerned about risk. These individuals see themselves as exposed to more serious risks than were faced by people in the past, and they believe the situation is getting worse rather than better."

Even though these perceptions may seem puzzling or strange to some people (how can the population perceive to be in worse conditions than before, if they have higher life expectancies and better conditions?), these attitudes towards risk are perfectly reasonable and natural. Chile is no longer a "third world country", and the quality of life of its population has considerably improved during the last decade. When the basic needs of the population are met, they begin to question and concern themselves with more complex topics such as equality, the environment, safety conditions, etc., which makes them more concerned of the different risks that they are exposed to, changing how they perceive them.

In the last years, there have been numerous uprisings in Chile, where the population has raised its voice to demand for social improvements such as a better quality of education and public health services. Even though current conditions may remain equal or be even better than in the past, the population has recently begun to focus on these issues and manifest their desires of improvement to regulators and government institutions. The occurrence of several natural hazards in the past decade has also influenced the population to believe that they face more risks than before, especially after the earthquake and tsunami of 2010. Public interest, concern and demand for protection have increased in the past decade, and citizens possess more resources to express their needs. As a consequence of this, regulators and public entities face larger challenges today than they did before. However, improvement of competences and efficiencies in

scientific, technical and engineering fields, should lead to progress in the ability of reduction and control of risks (Covello, 1983).

By determining and analyzing public's attitudes and perceptions, studies of risk perception have become an important source of information for public policies regarding risk communication and risk management (Renn, 1998). Regulatory bodies around the world, such as the Environmental Protection Agency, prioritize their legislative agendas according to public perceptions of risk (Slovic, 1999). For the Chilean situation, it is encouraged that risk perception is incorporated in the development of risk communication and education strategies, and in the determination of acceptability levels and reductions of risk in future regulations.

5.2 Perspectives for future investigations

For future investigations, it would be interesting to study the levels of social trust that the population perceives towards different institutions and regulators in charge of managing risk in the country. Studies have shown that, when an individual lacks knowledge about a hazard, social trust of those in charge of regulating and managing the hazard plays an important role in how people assess risk, benefits and acceptability (Bronfman, López-Vázquez, et al., 2008). On the other hand, when an individual possesses knowledge about a hazard, there is no need to rely on managing authorities and social trust loses relevance in explaining risk, benefit and acceptability judgments (Earle & Cvetkovich, 1995; Siegrist & Cvetkovich, 2000).

Combining the present study with the role of social trust in Chilean society would allow regulators to know the levels of trust that the population perceives towards different regulating and managing authorities. Complementing risk perceptions and social trust also allows exploring the influence that trust has in different segments of the population (comparing by gender, socioeconomic status, level of education, city of the country, etc.), which would be very valuable information at the moment of developing robust risk communication and management strategies.

Another future investigation that would be interesting to study would be what other factors explain risk perceptions of the population, besides “Dread Risk” and “Unknown Risk”. Tampering with nature is a relatively new factor that has recently caught the attention of the scientific community over the last years. This factor refers to risks that interfere with nature and display human arrogance and immorality. (Sjöberg, 2000b) studied the factors that determined risk perception of “a nuclear plant accident of the Chernobyl type”. He found that there were three main factors that explained his results: (1) disaster and fear; (2) tampering with nature; and (3) new and unknown. Of these three factors, he discovered that tampering with nature was the only dimension with sufficient power to explain the risk perception data.

(Wachinger et al., 2012)‘s thorough review of literature regarding natural hazards found that the distinction between natural and human-induced hazards is slowly vanishing. More and more people are starting to perceive natural risks as human-induced, due to phenomenon such as Climate Change and Global Warming. According to (Deeming, 2009), people are tending to believe that the frequency of natural disasters and the extent of damage that they can provoke are either caused or amplified by human activities, such as climate interventions or redirecting rivers (for the specific case of floods).

Droughts, extreme temperatures, floods, storms and landslides have often been associated with Climate Change (Aalst, 2006; Helmer & Hilhorst, 2006). As a result of this, the risk perception of natural hazards could share the same patterns that characterize risk perception of technological hazards. This is why the factor ‘Tampering with Nature’ may be no longer exclusive for explaining perceptions of risk of technological hazards, and it is interesting to explore its relevance and explanatory power for the risk perception of natural hazards.

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7 ANNEXES

Annex A: Normal Q-Q plots

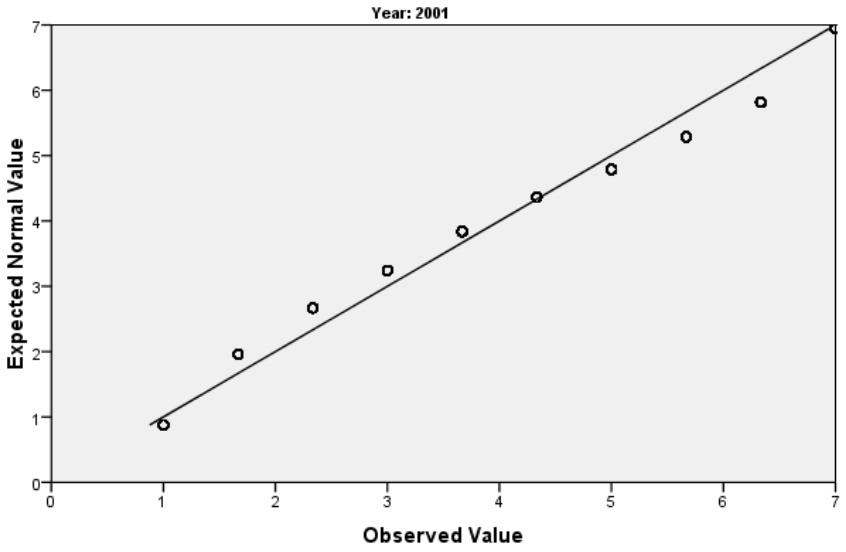

Figure 7-1. Normal Q-Q plots for social risk in 2001

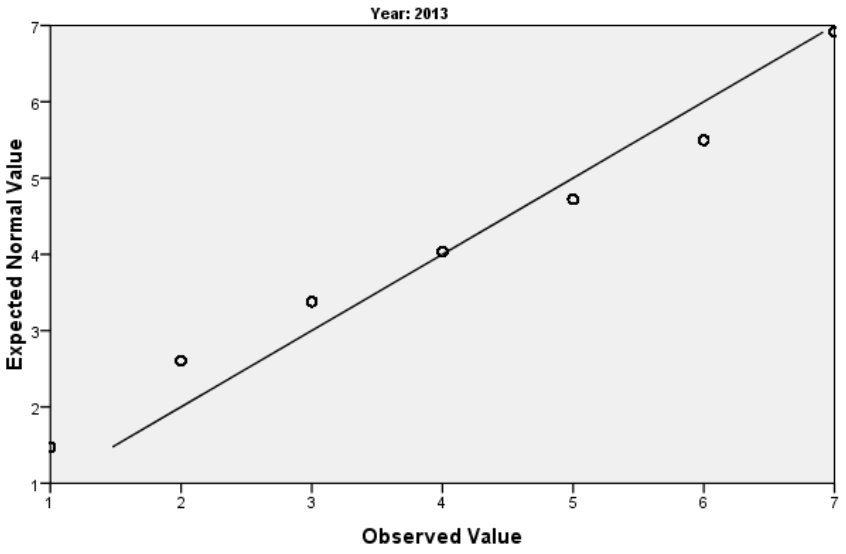

Figure 7-2. Normal Q-Q plots for social risk in 2013

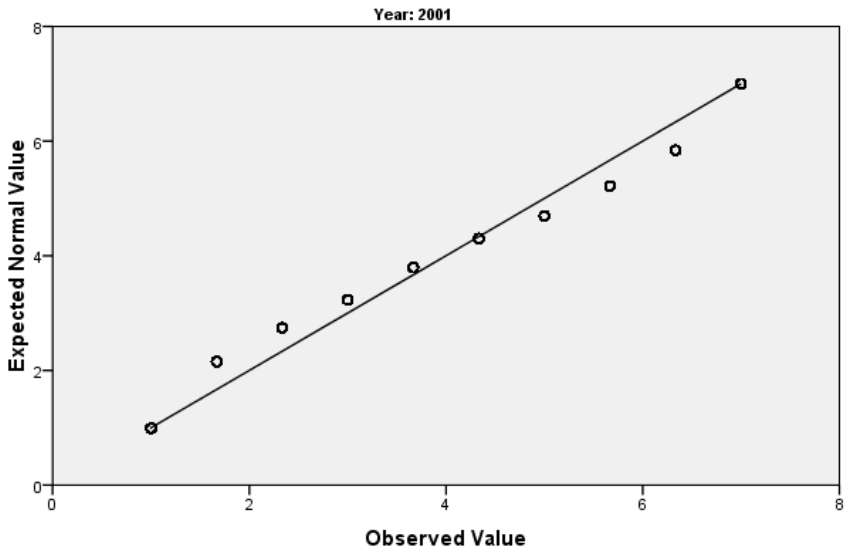

Figure 7-3. Normal Q-Q plots for social benefit in 2001

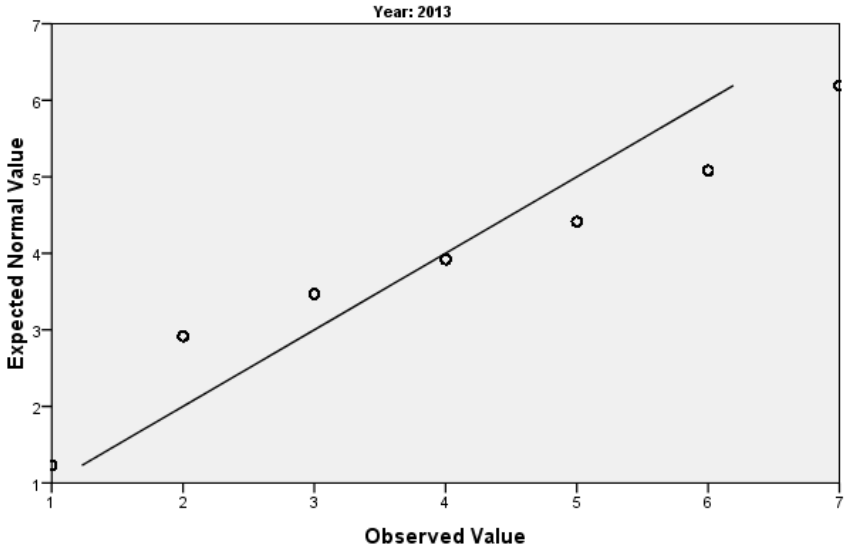

Figure 7-4. Normal Q-Q plots for social benefit in 2013

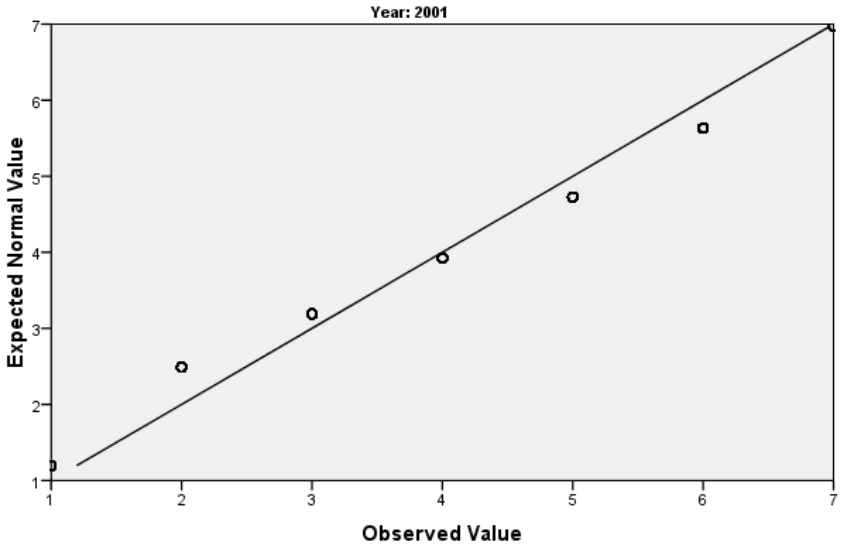

Figure 7-5. Normal Q-Q plots for social acceptability in 2001

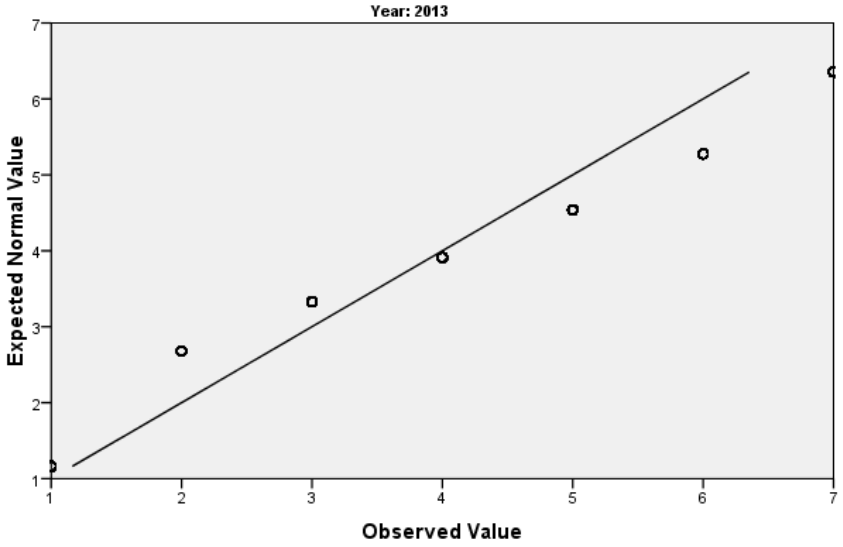

Figure 7-6. Normal Q-Q plots for social acceptability in 2013

Annex B: Independent samples T-test

Table 7-1. Independent samples T-test for analysis variables (2001-2013) and Levene's test for equality of variances

Hazards	Analysis Variable	Variance	Levene's Test for Equality of Variances		t-test for Equality of Means		
			F	Sig.	t	Sig. (2-tailed)	Mean Difference
Motorcycles	Social risk	Homogenous	0.241	0.623	-5.779	0.000	-0.884
		Heterogeneous			-5.900	0.000	-0.884
	Social benefit	Homogenous	0.000	0.990	1.082	0.280	0.162
		Heterogeneous			1.083	0.279	0.162
	Social acceptability	Homogenous	15.867	0.000	1.300	0.194	0.196
		Heterogeneous			1.218	0.224	0.196
Commercial aviation	Social risk	Homogenous	6.818	0.009	-2.940	0.003	-0.432
		Heterogeneous			-3.125	0.002	-0.432
	Social benefit	Homogenous	13.247	0.000	5.058	0.000	0.626
		Heterogeneous			5.551	0.000	0.626
	Social acceptability	Homogenous	11.982	0.001	6.017	0.000	0.831
		Heterogeneous			6.481	0.000	0.831
Bicycles	Social risk	Homogenous	59.437	0.000	-6.979	0.000	-1.236
		Heterogeneous			-7.949	0.000	-1.236
	Social benefit	Homogenous	7.865	0.005	-5.499	0.000	-0.676
		Heterogeneous			-5.383	0.000	-0.676
	Social acceptability	Homogenous	0.168	0.682	3.174	0.002	0.449
		Heterogeneous			3.133	0.002	0.449
Public transportation	Social risk	Homogenous	0.232	0.630	0.580	0.562	0.088
		Heterogeneous			0.575	0.566	0.088
	Social benefit	Homogenous	24.363	0.000	7.028	0.000	0.783
		Heterogeneous			7.826	0.000	0.783
	Social acceptability	Homogenous	21.392	0.000	-7.084	0.000	-1.068

Hazards	Analysis Variable	Variance	Levene's Test for Equality of Variances		t-test for Equality of Means		
			F	Sig.	t	Sig. (2-	Mean
		Heterogeneous			-6.407	0.000	-1.068
Motor vehicles	Social risk	Homogenous	2.083	0.150	0.056	0.955	0.008
		Heterogeneous			0.055	0.956	0.008
	Social benefit	Homogenous	1.440	0.231	3.617	0.000	0.427
		Heterogeneous			3.721	0.000	0.427
	Social acceptability	Homogenous	12.161	0.001	-6.157	0.000	-0.909
		Heterogeneous			-5.716	0.000	-0.909
Smoking	Social risk	Homogenous	9.867	0.002	-1.299	0.194	-0.187
		Heterogeneous			-1.372	0.171	-0.187
	Social benefit	Homogenous	6.034	0.014	2.951	0.003	0.456
		Heterogeneous			2.495	0.015	0.456
	Social acceptability	Homogenous	5.845	0.016	5.208	0.000	0.805
		Heterogeneous			5.013	0.000	0.805
Alcoholic beverages	Social risk	Homogenous	2.522	0.113	-2.327	0.020	-0.312
		Heterogeneous			-2.289	0.023	-0.312
	Social benefit	Homogenous	15.779	0.000	4.887	0.000	0.611
		Heterogeneous			4.468	0.000	0.611
	Social acceptability	Homogenous	7.614	0.006	5.589	0.000	0.851
		Heterogeneous			5.315	0.000	0.851
Marijuana	Social risk	Homogenous	47.643	0.000	6.346	0.000	0.973
		Heterogeneous			7.153	0.000	0.973
	Social benefit	Homogenous	1.500	0.221	-1.382	0.168	-0.320
		Heterogeneous			-1.510	0.136	-0.320
	Social acceptability	Homogenous	0.162	0.687	-1.771	0.077	-0.264
		Heterogeneous			-1.770	0.078	-0.264
Cocaine	Social risk	Homogenous	5.256	0.022	-2.658	0.008	-0.282
		Heterogeneous			-2.522	0.012	-0.282
	Social benefit	Homogenous	7.789	0.005	1.933	0.054	0.193
		Heterogeneous			1.430	0.161	0.193
	Social acceptability	Homogenous	33.890	0.000	4.558	0.000	0.489
		Heterogeneous			4.011	0.000	0.489

Hazards	Analysis Variable	Variance	Levene's Test for Equality of Variances		t-test for Equality of Means		
			F	Sig.	t	Sig. (2-	Mean
Assaults	Social risk	Homogenous	0.837	0.361	-2.249	0.025	-0.219
		Heterogeneous			-2.258	0.024	-0.219
	Social benefit	Homogenous	0.367	0.545	0.428	0.669	0.044
		Heterogeneous			0.432	0.670	0.044
	Social acceptability	Homogenous	63.986	0.000	7.419	0.000	0.721
		Heterogeneous			6.103	0.000	0.721
Terrorism	Social risk	Homogenous	0.227	0.634	-1.856	0.064	-0.314
		Heterogeneous			-1.875	0.062	-0.314
	Social benefit	Homogenous	6.424	0.012	1.947	0.052	0.250
		Heterogeneous			1.653	0.109	0.250
	Social acceptability	Homogenous	345.559	0.000	14.615	0.000	1.711
		Heterogeneous			11.005	0.000	1.711
Nuclear weapons	Social risk	Homogenous	2.384	0.123	0.448	0.655	0.081
		Heterogeneous			0.464	0.643	0.081
	Social benefit	Homogenous	136.263	0.000	9.077	0.000	1.203
		Heterogeneous			4.914	0.000	1.203
	Social acceptability	Homogenous	553.882	0.000	13.457	0.000	1.674
		Heterogeneous			9.822	0.000	1.674
Ozone layer depletion	Social risk	Homogenous	2.859	0.091	-0.486	0.627	-0.054
		Heterogeneous			-0.483	0.629	-0.054
	Social benefit	Homogenous	2.256	0.134	-0.619	0.536	-0.089
		Heterogeneous			-1.075	0.290	-0.089
	Social acceptability	Homogenous	63.395	0.000	6.868	0.000	0.680
		Heterogeneous			5.696	0.000	0.680
Climate Change	Social risk	Homogenous	7.356	0.007	-5.528	0.000	-0.773
		Heterogeneous			-5.283	0.000	-0.773
	Social benefit	Homogenous	2.367	0.125	0.519	0.604	0.072
		Heterogeneous			0.594	0.553	0.072
	Social acceptability	Homogenous	33.692	0.000	15.501	0.000	2.212
		Heterogeneous			13.784	0.000	2.212
Air Pollution	Social risk	Homogenous	5.996	0.015	-2.896	0.004	-0.324

Hazards	Analysis Variable	Variance	Levene's Test for Equality of Variances		t-test for Equality of Means		
			F	Sig.	t	Sig. (2-	Mean
		Heterogeneous			-2.785	0.006	-0.324
	Social benefit	Homogenous	0.163	0.686	1.048	0.295	0.125
		Heterogeneous			1.089	0.283	0.125
	Social acceptability	Homogenous	59.758	0.000	7.548	0.000	0.850
		Heterogeneous			6.465	0.000	0.850
Suspended particulate matter	Social risk	Homogenous	0.043	0.835	-1.628	0.104	-0.224
		Heterogeneous			-1.641	0.102	-0.224
	Social benefit	Homogenous	0.000	0.990	0.300	0.764	0.041
		Heterogeneous			0.285	0.777	0.041
	Social acceptability	Homogenous	47.978	0.000	8.865	0.000	1.081
		Heterogeneous			7.803	0.000	1.081
Food coloring substances	Social risk	Homogenous	1.705	0.192	-10.619	0.000	-1.414
		Heterogeneous			-10.197	0.000	-1.414
	Social benefit	Homogenous	0.041	0.840	3.104	0.002	0.385
		Heterogeneous			3.024	0.003	0.385
	Social acceptability	Homogenous	10.637	0.001	12.193	0.000	1.662
		Heterogeneous			11.200	0.000	1.662
Food preservatives	Social risk	Homogenous	15.428	0.000	-8.278	0.000	-1.122
		Heterogeneous			-7.744	0.000	-1.122
	Social benefit	Homogenous	4.791	0.029	7.466	0.000	0.998
		Heterogeneous			6.973	0.000	0.998
	Social acceptability	Homogenous	4.860	0.028	8.296	0.000	1.192
		Heterogeneous			7.855	0.000	1.192
Chemical fertilizers	Social risk	Homogenous	0.177	0.674	-6.464	0.000	-0.915
		Heterogeneous			-6.364	0.000	-0.915
	Social benefit	Homogenous	0.586	0.444	8.186	0.000	1.233
		Heterogeneous			7.883	0.000	1.233
	Social acceptability	Homogenous	0.227	0.634	6.644	0.000	0.965
		Heterogeneous			6.503	0.000	0.965
Pesticides	Social risk	Homogenous	7.420	0.007	-2.485	0.013	-0.356
		Heterogeneous			-2.543	0.011	-0.356

Hazards	Analysis Variable	Variance	Levene's Test for Equality of Variances		t-test for Equality of Means		
			F	Sig.	t	Sig. (2-	Mean
	Social benefit	Homogenous	0.030	0.863	6.460	0.000	1.010
		Heterogeneous			6.355	0.000	1.010
	Social acceptability	Homogenous	4.466	0.035	2.718	0.007	0.412
		Heterogeneous			2.785	0.006	0.412
Fossil fuels	Social risk	Homogenous	0.916	0.339	-4.888	0.000	-0.696
		Heterogeneous			-4.953	0.000	-0.696
	Social benefit	Homogenous	1.427	0.233	7.616	0.000	1.180
		Heterogeneous			7.830	0.000	1.180
	Social acceptability	Homogenous	3.224	0.073	3.645	0.000	0.584
		Heterogeneous			3.721	0.000	0.584
Cell-phone transmission antennas	Social risk	Homogenous	0.654	0.419	-2.158	0.031	-0.327
		Heterogeneous			-2.139	0.033	-0.327
	Social benefit	Homogenous	5.474	0.020	2.343	0.020	0.392
		Heterogeneous			2.447	0.015	0.392
	Social acceptability	Homogenous	0.054	0.817	-0.473	0.636	-0.074
		Heterogeneous			-0.471	0.638	-0.074
Genetic engineering	Social risk	Homogenous	6.742	0.010	-2.505	0.013	-0.398
		Heterogeneous			-2.584	0.010	-0.398
	Social benefit	Homogenous	4.072	0.044	3.593	0.000	0.593
		Heterogeneous			3.705	0.000	0.593
	Social acceptability	Homogenous	0.029	0.865	5.280	0.000	0.885
		Heterogeneous			5.245	0.000	0.885
Nuclear power	Social risk	Homogenous	6.104	0.014	-1.252	0.211	-0.211
		Heterogeneous			-1.223	0.222	-0.211
	Social benefit	Homogenous	0.680	0.410	8.236	0.000	1.388
		Heterogeneous			8.440	0.000	1.388
	Social acceptability	Homogenous	36.228	0.000	3.761	0.000	0.631
		Heterogeneous			3.462	0.001	0.631
Earthquakes	Social risk	Homogenous	8.450	0.004	-2.297	0.022	-0.275
		Heterogeneous			-2.173	0.031	-0.275
	Social benefit	Homogenous	7.283	0.007	1.743	0.082	0.259

Hazards	Analysis Variable	Variance	Levene's Test for Equality of Variances		t-test for Equality of Means		
			F	Sig.	t	Sig. (2-	Mean
		Heterogeneous			1.180	0.247	0.259
	Social acceptability	Homogenous	142.760	0.000	17.447	0.000	2.204
		Heterogeneous			14.128	0.000	2.204
Floods	Social risk	Homogenous	12.301	0.000	-2.789	0.005	-0.355
		Heterogeneous			-2.640	0.009	-0.355
	Social benefit	Homogenous	0.003	0.958	0.430	0.667	0.046
		Heterogeneous			0.478	0.635	0.046
	Social acceptability	Homogenous	184.115	0.000	15.611	0.000	1.776
		Heterogeneous			12.334	0.000	1.776
Landslides	Social risk	Homogenous	19.618	0.000	-2.635	0.009	-0.368
		Heterogeneous			-2.488	0.013	-0.368
	Social benefit	Homogenous	50.093	0.000	4.578	0.000	0.420
		Heterogeneous			2.521	0.017	0.420
	Social acceptability	Homogenous	273.283	0.000	18.482	0.000	2.110
		Heterogeneous			14.003	0.000	2.110
Wildfires	Social risk	Homogenous	9.804	0.002	-6.077	0.000	-0.713
		Heterogeneous			-5.843	0.000	-0.713
	Social benefit	Homogenous	8.393	0.004	2.308	0.021	0.141
		Heterogeneous			2.236	0.031	0.141
	Social acceptability	Homogenous	218.246	0.000	20.867	0.000	2.203
		Heterogeneous			16.020	0.000	2.203
Swimming	Social risk	Homogenous	9.548	0.002	-0.973	0.331	-0.144
		Heterogeneous			-1.025	0.306	-0.144
	Social benefit	Homogenous	20.863	0.000	-5.557	0.000	-0.704
		Heterogeneous			-5.121	0.000	-0.704
	Social acceptability	Homogenous	10.989	0.001	3.750	0.000	0.537
		Heterogeneous			4.092	0.000	0.537

Hazards	Analysis Variable	Variance	Levene's Test for Equality of Variances		t-test for Equality of Means		
			F	Sig.	t	Sig. (2-	Mean
Ski	Social risk	Homogenous	9.895	0.002	-3.759	0.000	-0.521
		Heterogeneous			-3.982	0.000	-0.521
	Social benefit	Homogenous	1.367	0.243	-10.121	0.000	-1.474
		Heterogeneous			-9.931	0.000	-1.474
	Social acceptability	Homogenous	8.755	0.003	5.299	0.000	0.750
		Heterogeneous			5.764	0.000	0.750
Sunbathing	Social risk	Homogenous	11.971	0.001	1.173	0.241	0.184
		Heterogeneous			1.241	0.215	0.184
	Social benefit	Homogenous	26.707	0.000	-2.560	0.011	-0.426
		Heterogeneous			-3.029	0.003	-0.426
	Social acceptability	Homogenous	0.159	0.690	2.949	0.003	0.463
		Heterogeneous			2.971	0.003	0.463

Annex C: Mean scores for risk attributes by hazard and year

Table 7-2. Mean scores for risk attributes by hazard and year

Hazard	Year	Common - Dread	Not Catastrophic - Catastrophic	Voluntary - Involuntary	Control - No Control	Non-Fatal - Fatal	Knowledge-No Knowledge	Old-New	Immediate - Delay
Motorcycles	2001	2.68	3.79	2.27	2.54	5.02	2.83	2.48	1.63
	2013	2.17	2.71	2.27	3.48	5.65	2.93	2.30	1.68
Commercial aviation	2001	2.73	3.65	3.19	5.63	5.09	3.09	3.01	1.65
	2013	3.14	4.33	3.48	5.24	6.11	3.59	2.82	1.38
Bicycles	2001	1.53	2.06	2.20	2.16	2.77	2.92	2.52	1.88
	2013	1.68	2.00	2.38	2.99	4.62	2.74	2.41	1.87
Public transportation	2001	2.73	3.89	4.23	3.97	4.32	2.76	2.64	1.87
	2013	2.54	3.95	4.35	4.08	4.65	2.74	2.28	1.95
Motor vehicles	2001	2.61	4.08	3.32	3.11	4.39	2.58	2.53	1.78
	2013	2.56	3.86	3.40	3.29	5.06	2.63	2.20	1.93
Smoking	2001	2.40	4.78	1.55	1.91	4.70	2.79	2.24	5.68
	2013	2.78	3.45	1.82	2.39	5.70	2.29	1.80	5.09
Alcoholic beverages	2001	2.72	4.57	1.77	2.21	4.14	3.08	1.94	4.82
	2013	2.70	3.53	1.64	2.33	5.31	2.44	1.81	5.10
Marijuana	2001	4.46	5.32	1.58	2.94	4.76	3.28	3.37	5.26
	2013	2.92	3.01	1.61	2.40	4.42	3.04	2.88	5.08
Cocaine	2001	5.03	5.99	1.64	2.90	5.66	2.86	3.48	5.04
	2013	3.80	3.87	1.59	2.79	5.68	2.90	2.82	4.47
Assaults	2001	5.19	5.00	5.94	4.92	5.41	2.45	2.61	1.58
	2013	4.64	4.22	5.70	4.69	5.41	2.36	2.21	2.27
Terrorism	2001	5.53	5.49	5.99	5.27	5.75	3.67	3.42	2.28
	2013	5.79	5.67	6.13	5.59	5.93	3.53	3.46	2.05
Nuclear weapons	2001	6.07	6.68	5.99	5.71	6.49	3.88	3.70	3.62
	2013	6.02	5.99	6.17	5.70	6.25	3.85	3.33	2.10
Ozone layer depletion	2001	4.42	5.91	5.07	4.24	5.34	4.59	4.73	5.63
	2013	5.08	5.63	4.91	4.29	5.29	3.86	3.57	4.73
Climate Change	2001	3.60	4.70	6.45	6.23	3.32	4.59	3.35	4.03
	2013	4.47	5.00	5.42	4.82	4.65	3.91	3.98	4.84
Air Pollution	2001	3.84	5.51	5.23	4.23	4.57	4.10	4.08	5.13
	2013	4.43	5.07	4.75	4.01	4.75	3.54	3.52	4.71
Suspended	2001	3.67	4.91	5.30	4.37	4.33	5.05	4.35	4.81

Hazard	Year	Common - Dread	Not Catastrophic - Catastrophic	Voluntary - Involuntary	Control - No Control	Non-Fatal - Fatal	Knowledge-No Knowledge	Old-New	Immediate - Delay
particulate matter	2013	4.07	4.68	4.88	4.07	4.57	4.26	3.66	4.75
Food coloring substances	2001	2.15	3.12	3.79	3.62	3.05	5.40	4.36	5.45
	2013	3.10	3.49	4.33	3.92	4.04	4.52	4.34	5.30
Food preservatives	2001	2.54	3.38	4.28	4.12	3.55	5.57	4.56	5.45
	2013	3.04	3.47	4.32	3.89	3.95	4.65	4.48	5.45
Chemical fertilizers	2001	3.12	4.05	4.65	4.32	4.43	5.43	4.18	5.34
	2013	3.53	4.12	4.69	4.09	4.36	4.62	3.98	5.29
Pesticides	2001	3.51	4.67	5.08	4.40	4.90	5.31	3.96	5.40
	2013	3.78	4.27	4.83	4.02	4.47	4.66	3.83	5.22
Fossil fuels	2001	2.97	4.18	4.13	3.36	4.02	4.30	2.62	3.00
	2013	3.07	3.98	3.78	3.47	3.90	3.64	2.53	4.84
Cell-phone transmission antennas	2001	3.39	3.84	4.97	4.43	3.86	4.96	6.03	5.55
	2013	3.44	3.83	5.14	4.63	3.89	4.00	4.71	5.58
Genetic engineering	2001	4.31	4.40	5.21	5.02	4.05	5.61	5.80	5.24
	2013	3.46	3.61	4.92	5.18	3.75	5.18	5.13	5.05
Nuclear power	2001	5.51	5.99	5.82	5.45	5.60	4.88	4.29	4.17
	2013	5.10	5.28	5.42	5.28	5.18	4.38	4.04	3.59
Earthquakes	2001	5.71	5.99	6.63	6.52	5.63	2.19	1.69	1.47
	2013	5.90	6.28	6.55	6.21	5.86	2.16	1.59	1.74
Floods	2001	4.91	5.35	6.25	5.64	5.25	2.84	2.10	1.73
	2013	5.73	6.13	6.60	6.08	5.71	2.18	1.75	1.67
Landslides	2001	5.39	5.63	6.47	6.05	5.86	2.94	2.24	1.75
	2013	5.78	6.08	6.57	6.11	5.90	2.32	1.87	1.57
Wildfires	2001	4.75	5.30	5.22	3.53	5.56	2.51	1.78	1.63
	2013	5.82	6.02	5.79	5.46	5.98	2.15	1.73	1.48
Swimming	2001	1.71	2.43	2.00	2.06	3.27	2.96	2.43	2.06
	2013	1.75	2.05	2.06	2.15	4.61	3.23	2.10	1.94
Ski	2001	1.82	2.40	2.00	2.32	3.13	3.52	3.23	1.98
	2013	1.88	2.03	1.94	2.11	4.47	3.87	2.81	2.13
Sunbathing	2001	2.80	4.07	2.08	2.00	3.71	4.12	4.11	5.11
	2013	2.20	2.54	1.91	2.00	4.60	3.19	2.83	4.32

Annex D: Mean values per hazard for risk, benefit and acceptability (2001-2013)

Table 7-3. Social risk scores by hazard and year

Hazard	Year	Mean	Standard Deviation
Motorcycles**	2001	4.07	1.66
	2013	4.95	1.75
Commercial aviation**	2001	2.93	1.46
	2013	3.37	1.72
Bicycles**	2001	2.53	1.49
	2013	3.77	2.07
Public transportation	2001	4.38	1.74
	2013	4.30	1.70
Motor vehicles	2001	4.28	1.69
	2013	4.27	1.59
Smoking	2001	5.38	1.47
	2013	5.57	1.73
Alcoholic beverages*	2001	5.28	1.58
	2013	5.59	1.51
Marijuana**	2001	6.11	1.34
	2013	5.14	1.92
Cocaine*	2001	6.16	1.34
	2013	6.45	1.15
Assaults*	2001	6.21	1.10
	2013	6.43	1.12
Terrorism	2001	5.30	1.88
	2013	5.61	1.94
Nuclear weapons	2001	5.71	1.85
	2013	5.63	2.06
Ozone layer depletion	2001	6.07	1.27
	2013	6.12	1.25
Climate Change**	2001	4.56	1.73
	2013	5.34	1.52
Air Pollution**	2001	5.69	1.38
	2013	6.02	1.23
Suspended particulate matter	2001	5.38	1.50
	2013	5.60	1.54
Food coloring substances**	2001	3.74	1.64
	2013	5.15	1.46

Hazard	Year	Mean	Standard Deviation
Food preservatives**	2001	4.07	1.74
	2013	5.19	1.41
Chemical fertilizers**	2001	4.49	1.66
	2013	5.40	1.58
Pesticides*	2001	5.02	1.55
	2013	5.38	1.66
Fossil fuels**	2001	4.09	1.58
	2013	4.79	1.65
Cell-phone transmission antennas*	2001	4.40	1.74
	2013	4.73	1.70
Genetic engineering*	2001	3.92	1.56
	2013	4.32	1.77
Nuclear power	2001	4.80	1.95
	2013	5.01	1.81
Earthquakes*	2001	5.80	1.51
	2013	6.07	1.29
Floods**	2001	5.46	1.61
	2013	5.82	1.37
Landslides*	2001	5.45	1.78
	2013	5.82	1.50
Wildfires**	2001	5.41	1.45
	2013	6.12	1.29
Swimming	2001	2.99	1.49
	2013	3.13	1.71
Ski**	2001	2.83	1.38
	2013	3.35	1.62
Sunbathing	2001	4.82	1.59
	2013	4.64	1.87

* Scores significantly different between years at $p<0.05$

** Scores significantly different between years at $p<0.01$

Table 7-4. Social benefit scores by hazard and year

Hazard	Year	Mean	Standard Deviation
Motorcycles*	2001	4.49	1.68
	2013	4.33	1.69
Commercial aviation**	2001	6.08	1.15
	2013	5.46	1.53
Bicycles**	2001	5.29	1.47
	2013	5.97	1.38
Public transportation**	2001	6.24	1.01
	2013	5.46	1.39
Motor vehicles**	2001	5.81	1.27
	2013	5.38	1.38
Smoking*	2001	2.16	1.45
	2013	1.71	1.14
Alcoholic beverages**	2001	2.52	1.44
	2013	1.91	1.20
Marijuana	2001	1.80	1.39
	2013	2.12	1.56
Cocaine	2001	1.38	.78
	2013	1.19	.54
Assaults	2001	1.18	.47
	2013	1.14	.47
Terrorism	2001	1.40	.77
	2013	1.15	.64
Nuclear weapons**	2001	2.44	1.86
	2013	1.23	.71
Ozone layer depletion	2001	1.19	.37
	2013	1.28	.70
Climate Change	2001	2.04	1.05
	2013	1.97	1.34
Air Pollution	2001	1.46	.63
	2013	1.34	.66
Suspended particulate matter	2001	1.52	.89
	2013	1.48	.83
Food coloring substances**	2001	2.32	1.21
	2013	1.94	1.15
Food preservatives**	2001	3.23	1.60
	2013	2.23	1.34
Chemical fertilizers**	2001	3.46	1.71
	2013	2.23	1.56

Hazard	Year	Mean	Standard Deviation
Pesticides**	2001	3.34	1.69
	2013	2.33	1.62
Fossil fuels**	2001	4.84	1.65
	2013	3.66	1.77
Cell-phone transmission antennas*	2001	3.92	1.63
	2013	3.53	1.81
Genetic engineering**	2001	4.30	1.61
	2013	3.71	1.83
Nuclear power**	2001	4.52	1.69
	2013	3.13	1.81
Earthquakes	2001	1.57	1.16
	2013	1.32	.74
Floods	2001	1.32	.53
	2013	1.28	.60
Landslides*	2001	1.60	.93
	2013	1.18	.45
Wildfires*	2001	1.23	.36
	2013	1.09	.35
Swimming**	2001	5.24	1.66
	2013	5.94	1.31
Ski*	2001	3.82	1.67
	2013	5.29	1.59
Sunbathing**	2001	2.58	1.27
	2013	3.00	1.80

* Scores significantly different between years at $p<0.05$

** Scores significantly different between years at $p<0.01$

Table 7-5. Social acceptability scores by hazard and year

Hazards	Year	Mean	Std. Deviation
Motorcycles	2001	4.24	1.87
	2013	4.05	1.57
Commercial aviation**	2001	5.84	1.32
	2013	5.01	1.62
Bicycles**	2001	5.70	1.61
	2013	5.25	1.55
Public transportation**	2001	3.91	1.98
	2013	4.98	1.52
Motor vehicles**	2001	4.19	1.86
	2013	5.09	1.52
Smoking**	2001	3.36	1.83
	2013	2.55	1.66
Alcoholic beverages**	2001	3.49	1.83
	2013	2.64	1.61
Marijuana	2001	2.22	1.66
	2013	2.49	1.66
Cocaine**	2001	1.98	1.47
	2013	1.49	1.04
Assaults**	2001	2.01	1.46
	2013	1.29	0.85
Terrorism**	2001	2.96	2.01
	2013	1.25	0.78
Nuclear weapons**	2001	2.94	2.19
	2013	1.26	0.67
Ozone layer depletion**	2001	2.15	1.49
	2013	1.47	0.87
Climate Change**	2001	4.35	1.92
	2013	2.14	1.40
Air Pollution**	2001	2.50	1.61
	2013	1.65	1.05
Suspended particulate matter**	2001	2.87	1.66
	2013	1.79	1.12
Food coloring substances**	2001	4.12	1.75
	2013	2.46	1.39
Food preservatives**	2001	3.81	1.75
	2013	2.62	1.50
Chemical fertilizers**	2001	3.49	1.65
	2013	2.52	1.56

Hazards	Year	Mean	Std. Deviation
Pesticides**	2001	3.01	1.60
	2013	2.60	1.70
Fossil fuels**	2001	4.24	1.70
	2013	3.66	1.80
Cell-phone transmission antennas	2001	3.42	1.74
	2013	3.49	1.72
Genetic engineering**	2001	4.29	1.78
	2013	3.41	1.74
Nuclear power**	2001	3.46	2.12
	2013	2.83	1.64
Earthquakes**	2001	3.83	1.96
	2013	1.62	1.06
Floods**	2001	3.27	1.83
	2013	1.49	0.90
Landslides**	2001	3.53	1.93
	2013	1.42	0.81
Wildfires**	2001	3.54	1.76
	2013	1.34	0.78
Swimming**	2001	5.74	1.34
	2013	5.20	1.69
Ski**	2001	5.63	1.33
	2013	4.88	1.66
Sunbathing**	2001	3.72	1.72
	2013	3.26	1.75

* Scores significantly different between years at $p<0.05$

** Scores significantly different between years at $p<0.01$

Annex E: Questionnaires administered to the sample population (2013)

C1-SCL-

Estudio de Percepción de Riesgo de la Ciudadanía y Grado de Confianza en Instituciones Comunicadoras

Nombre del encuestador: _____ Nº de encuestador:_____

Hora de comienzo: __ : __ Hora de finalización: __ : __ N° de manzana:_____

Presentación del encuestador

Buenos días/tardes,

Mi nombre es _____

Estamos haciendo una encuesta para conocer las percepciones de riesgo de la población chilena frente a distintas actividades o peligros. Los resultados obtenidos se utilizarán para apoyar el diseño, evaluación e implementación de políticas y programas de control de riesgos.

Este estudio es desarrollado por el **Centro Nacional de Investigación para la Gestión Integrada de Desastres Naturales** (CIGIDEN), el cual está conformado por investigadores de la **Pontificia Universidad Católica de Chile**, **Universidad Técnica Federico Santa María**, **Universidad Andrés Bello** y la **Universidad Católica del Norte**.

Toda la información que nos proporcione será anónima y confidencial, y su uso será exclusivamente para fines académicos. Si en algún momento de la encuesta usted desea dejar de participar, esta será descartada de inmediato y no será utilizada para dicho estudio.

Estamos interesados en conocer su opinión, por favor, ¿sería tan amable de contestar el siguiente cuestionario? Dura aproximadamente 15 minutos.

Percepción de Riesgo de la Población Chilena

A lo largo de nuestras vidas nos vemos expuestos a distintos niveles de riesgos asociados a diversas actividades, sustancias o tecnologías, como las que se indican en la siguiente lista:

1. Motocicletas
2. Aviación comercial
3. Bicicletas
4. Transporte público
5. Vehículos motorizados (automóviles)
6. Fumar cigarrillos
7. Bebidas alcohólicas
8. Marihuana
9. Cocaína
10. Asaltos
11. Influenza AH1N1
12. Terrorismo
13. Armas nucleares
14. Destrucción de la capa de ozono
15. Cambio climático
16. Contaminación Atmosférica
17. Partículas en suspensión
18. Colorantes de comida
19. Preservantes de comida
20. Fertilizantes químicos
21. Pesticidas usados en la agricultura
22. Alimentos transgénicos
23. Combustibles fósiles (carbón, petróleo, leña)
24. Antenas de retransmisión de celulares
25. Ingeniería Genética
26. Energía nuclear
27. Nanotecnología
28. Terremotos
29. Inundaciones
30. Aluviones
31. Incendios (Grandes incendios forestales)
32. Tsunamis
33. Erupciones volcánicas
34. Temperaturas extremas (Olas de calor - frío)
35. Sequías
36. Tormentas (viento, nieve)
37. Nadar
38. Esquiar
39. Asolearse
40. Alimentos con alto contenido graso

Queramos o no, cada una de las actividades, sustancias y tecnologías mostradas en la lista anterior tiene asociado un cierto riesgo de muerte, siendo algunas de ellas más riesgosas que otras.

Por ejemplo, piense que se encuentra en el último piso del edificio más alto del centro de Santiago, en un día lluvioso, con vientos de hasta 60 Km/hora y a una hora de alta congestión, y lo que usted quiere es bajar hasta el primer piso. Para ello puede considerar varias alternativas, como por ejemplo utilizar el ascensor, usar las escaleras, bajar por fuera mediante una cuerda, lanzarse en alas delta o arrojarse en paracaídas.

Claramente, cada una de estas alternativas tiene un cierto riesgo de muerte asociado, en algunos casos bajo y en otros es alto.
Lo que se persigue en esta encuesta es caracterizar la percepción de riesgo de la población chilena frente a cada actividad, sustancia y tecnología. Para ello le pedimos que conteste las preguntas que aparecen en las próximas páginas de acuerdo al siguiente procedimiento:

i) Lea cuidadosamente cada pregunta.
ii) Para cada actividad, sustancia y tecnología conteste cada pregunta marcando con una “X” en el cuadrado de la escala que según usted mejor corresponda.

Como modelo, y pensando en el ejemplo enunciado anteriormente (recuadro página anterior), considere la siguiente pregunta:

¿Cuánto riesgo piensa usted está asociado a cada una de las siguientes actividades?

	Actividades	**Ningún riesgo**					**Totalmente riesgoso**	
		1	2	3	4	5	6	7
1	Bajar el edificio utilizando el ascensor	☐	☐	☐	☐	☐	☐	☐
2	Bajar el edificio utilizando las escaleras	☐	☐	☐	☐	☐	☐	☐
3	Bajar el edificio utilizando una cuerda	☐	☐	☐	☐	☐	☐	☐
4	Bajar el edificio lanzándose en alas delta	☐	☐	☐	☐	☐	☐	☐
5	Bajar el edificio arrojándose en paracaídas	☐	☐	☐	☐	☐	☐	☐
⇣	⇣	⇣						

Si usted considera que la actividad 1 (bajar el edificio utilizando el ascensor) tiene asociado un riesgo muy bajo, entonces debería marcar con una "X" en el número 1 de la escala, tal como se muestra en la tabla de abajo. Del mismo modo, si considera que la actividad 3 (bajar el edificio utilizando una cuerda) tiene un riesgo asociado bastante grande, pero que no es el máximo, entonces debería marcar con una "X" en el número 5 o 6 (según lo que usted piense) de la escala. Finalmente, si usted estima que la actividad 5 (bajar el edificio arrojándose en paracaídas) tiene un riesgo asociado muy alto, debería marcar con una "X" en el número 7 de la escala. La siguiente tabla muestra cómo se marcarían estas respuestas (nota: estas son respuestas ilustrativas solamente, no tienen ninguna relevancia).

¿Cuánto riesgo piensa usted está asociado a cada una de las siguientes actividades?

	Actividades	**Ningún riesgo**					**Totalmente riesgoso**	
		1	2	3	4	5	6	7
1	Bajar el edificio utilizando el ascensor	X	☐	☐	☐	☐	☐	☐
2	Bajar el edificio utilizando las escaleras	☐	X	☐	☐	☐	☐	☐
3	Bajar el edificio utilizando una cuerda	☐	☐	☐	☐	X	☐	☐
4	Bajar el edificio lanzándose en alas delta	☐	☐	☐	☐	☐	☐	X
5	Bajar el edificio arrojándose en paracaídas	☐	☐	☐	☐	☐	☐	X
⇣	⇣	⇣						

Por favor, conteste las siguientes preguntas marcando con una "X" el cuadrado de la escala que según usted corresponda, para cada una de las actividades, sustancias y tecnologías que se presentan a continuación.

Consentimiento Informado

Doy consentimiento a mi participación en el proyecto de investigación "Percepciones de riesgo de la población chilena"

Firma _____

1.- ¿A cuánto RIESGO cree Usted está (estará) expuesta la POBLACIÓN NACIONAL producto de (……)?									
Actividades, Sustancias y Tecnologías		**Ningún riesgo**						**Totalmente riesgoso**	**NS/NR**
		1	2	3	4	5	6	7	99
1	Motocicletas	☐	☐	☐	☐	☐	☐	☐	☐
2	Aviación comercial	☐	☐	☐	☐	☐	☐	☐	☐
3	Bicicletas	☐	☐	☐	☐	☐	☐	☐	☐
4	Transporte público	☐	☐	☐	☐	☐	☐	☐	☐
5	Vehículos motorizados (automóviles)	☐	☐	☐	☐	☐	☐	☐	☐
6	Fumar cigarrillos	☐	☐	☐	☐	☐	☐	☐	☐
7	Bebidas alcohólicas	☐	☐	☐	☐	☐	☐	☐	☐
8	Marihuana	☐	☐	☐	☐	☐	☐	☐	☐
9	Cocaína	☐	☐	☐	☐	☐	☐	☐	☐
10	Asaltos	☐	☐	☐	☐	☐	☐	☐	☐
11	Influenza AH1N1	☐	☐	☐	☐	☐	☐	☐	☐
12	Terrorismo	☐	☐	☐	☐	☐	☐	☐	☐
13	Armas nucleares	☐	☐	☐	☐	☐	☐	☐	☐
14	Destrucción de la capa de ozono	☐	☐	☐	☐	☐	☐	☐	☐
15	Cambio climático	☐	☐	☐	☐	☐	☐	☐	☐
16	Contaminación Atmosférica	☐	☐	☐	☐	☐	☐	☐	☐
17	Partículas en suspensión	☐	☐	☐	☐	☐	☐	☐	☐
18	Colorantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
19	Preservantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
20	Fertilizantes químicos	☐	☐	☐	☐	☐	☐	☐	☐
21	Pesticidas usados en la agricultura	☐	☐	☐	☐	☐	☐	☐	☐
22	Alimentos transgénicos	☐	☐	☐	☐	☐	☐	☐	☐
23	Combustibles fósiles (carbón, petróleo, leña)	☐	☐	☐	☐	☐	☐	☐	☐
24	Antenas de retransmisión de celulares	☐	☐	☐	☐	☐	☐	☐	☐
25	Ingeniería Genética	☐	☐	☐	☐	☐	☐	☐	☐
26	Energía nuclear	☐	☐	☐	☐	☐	☐	☐	☐
27	Nanotecnología	☐	☐	☐	☐	☐	☐	☐	☐
28	Terremotos	☐	☐	☐	☐	☐	☐	☐	☐
29	Inundaciones	☐	☐	☐	☐	☐	☐	☐	☐
30	Aluviones	☐	☐	☐	☐	☐	☐	☐	☐
31	Incendios (Grandes incendios forestales)	☐	☐	☐	☐	☐	☐	☐	☐
32	Tsunamis	☐	☐	☐	☐	☐	☐	☐	☐
33	Erupciones volcánicas	☐	☐	☐	☐	☐	☐	☐	☐
34	Temperaturas extremas (Olas de calor - frío)	☐	☐	☐	☐	☐	☐	☐	☐
35	Sequías	☐	☐	☐	☐	☐	☐	☐	☐
36	Tormentas (viento, nieve)	☐	☐	☐	☐	☐	☐	☐	☐
37	Nadar	☐	☐	☐	☐	☐	☐	☐	☐
38	Esquiar	☐	☐	☐	☐	☐	☐	☐	☐
39	Asolearse	☐	☐	☐	☐	☐	☐	☐	☐
40	Alimentos con alto contenido graso	☐	☐	☐	☐	☐	☐	☐	☐

2. ¿Cuánto BENEFICIO cree Usted obtiene (obtendrá) la POBLACIÓN NACIONAL a partir de (……)?									
Actividades, Sustancias y Tecnologías		**Ningún beneficio**						**Totalmente beneficioso**	**NS/NR**
		1	2	3	4	5	6	7	99
1	Motocicletas	☐	☐	☐	☐	☐	☐	☐	☐
2	Aviación comercial	☐	☐	☐	☐	☐	☐	☐	☐
3	Bicicletas	☐	☐	☐	☐	☐	☐	☐	☐
4	Transporte público	☐	☐	☐	☐	☐	☐	☐	☐
5	Vehículos motorizados (automóviles)	☐	☐	☐	☐	☐	☐	☐	☐
6	Fumar cigarrillos	☐	☐	☐	☐	☐	☐	☐	☐
7	Bebidas alcohólicas	☐	☐	☐	☐	☐	☐	☐	☐
8	Marihuana	☐	☐	☐	☐	☐	☐	☐	☐
9	Cocaína	☐	☐	☐	☐	☐	☐	☐	☐
10	Asaltos	☐	☐	☐	☐	☐	☐	☐	☐
11	Influenza AH1N1	☐	☐	☐	☐	☐	☐	☐	☐
12	Terrorismo	☐	☐	☐	☐	☐	☐	☐	☐
13	Armas nucleares	☐	☐	☐	☐	☐	☐	☐	☐
14	Destrucción de la capa de ozono	☐	☐	☐	☐	☐	☐	☐	☐
15	Cambio climático	☐	☐	☐	☐	☐	☐	☐	☐
16	Contaminación Atmosférica	☐	☐	☐	☐	☐	☐	☐	☐
17	Partículas en suspensión	☐	☐	☐	☐	☐	☐	☐	☐
18	Colorantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
19	Preservantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
20	Fertilizantes químicos	☐	☐	☐	☐	☐	☐	☐	☐
21	Pesticidas usados en la agricultura	☐	☐	☐	☐	☐	☐	☐	☐
22	Alimentos transgénicos	☐	☐	☐	☐	☐	☐	☐	☐
23	Combustibles fósiles (carbón, petróleo, leña)	☐	☐	☐	☐	☐	☐	☐	☐
24	Antenas de retransmisión de celulares	☐	☐	☐	☐	☐	☐	☐	☐
25	Ingeniería Genética	☐	☐	☐	☐	☐	☐	☐	☐
26	Energía nuclear	☐	☐	☐	☐	☐	☐	☐	☐
27	Nanotecnología	☐	☐	☐	☐	☐	☐	☐	☐
28	Terremotos	☐	☐	☐	☐	☐	☐	☐	☐
29	Inundaciones	☐	☐	☐	☐	☐	☐	☐	☐
30	Aluviones	☐	☐	☐	☐	☐	☐	☐	☐
31	Incendios (Grandes incendios forestales)	☐	☐	☐	☐	☐	☐	☐	☐
32	Tsunamis	☐	☐	☐	☐	☐	☐	☐	☐
33	Erupciones volcánicas	☐	☐	☐	☐	☐	☐	☐	☐
34	Temperaturas extremas (Olas de calor - frío)	☐	☐	☐	☐	☐	☐	☐	☐
35	Sequías	☐	☐	☐	☐	☐	☐	☐	☐
36	Tormentas (viento, nieve)	☐	☐	☐	☐	☐	☐	☐	☐
37	Nadar	☐	☐	☐	☐	☐	☐	☐	☐
38	Esquiar	☐	☐	☐	☐	☐	☐	☐	☐
39	Asolearse	☐	☐	☐	☐	☐	☐	☐	☐
40	Alimentos con alto contenido graso	☐	☐	☐	☐	☐	☐	☐	☐

3. ¿Cuán ACEPTABLE es el RIESGO que afecta a la POBLACIÓN NACIONAL producto de (……)?

	Actividades, Sustancias y Tecnologías	Nada aceptable						Totalmente aceptable	NS/NR
		1	2	3	4	5	6	7	99
1	Motocicletas	☐	☐	☐	☐	☐	☐	☐	☐
2	Aviación comercial	☐	☐	☐	☐	☐	☐	☐	☐
3	Bicicletas	☐	☐	☐	☐	☐	☐	☐	☐
4	Transporte público	☐	☐	☐	☐	☐	☐	☐	☐
5	Vehículos motorizados (automóviles)	☐	☐	☐	☐	☐	☐	☐	☐
6	Fumar cigarrillos	☐	☐	☐	☐	☐	☐	☐	☐
7	Bebidas alcohólicas	☐	☐	☐	☐	☐	☐	☐	☐
8	Marihuana	☐	☐	☐	☐	☐	☐	☐	☐
9	Cocaína	☐	☐	☐	☐	☐	☐	☐	☐
10	Asaltos	☐	☐	☐	☐	☐	☐	☐	☐
11	Influenza AH1N1	☐	☐	☐	☐	☐	☐	☐	☐
12	Terrorismo	☐	☐	☐	☐	☐	☐	☐	☐
13	Armas nucleares	☐	☐	☐	☐	☐	☐	☐	☐
14	Destrucción de la capa de ozono	☐	☐	☐	☐	☐	☐	☐	☐
15	Cambio climático	☐	☐	☐	☐	☐	☐	☐	☐
16	Contaminación Atmosférica	☐	☐	☐	☐	☐	☐	☐	☐
17	Partículas en suspensión	☐	☐	☐	☐	☐	☐	☐	☐
18	Colorantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
19	Preservantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
20	Fertilizantes químicos	☐	☐	☐	☐	☐	☐	☐	☐
21	Pesticidas usados en la agricultura	☐	☐	☐	☐	☐	☐	☐	☐
22	Alimentos transgénicos	☐	☐	☐	☐	☐	☐	☐	☐
23	Combustibles fósiles (carbón, petróleo, leña)	☐	☐	☐	☐	☐	☐	☐	☐
24	Antenas de retransmisión de celulares	☐	☐	☐	☐	☐	☐	☐	☐
25	Ingeniería Genética	☐	☐	☐	☐	☐	☐	☐	☐
26	Energía nuclear	☐	☐	☐	☐	☐	☐	☐	☐
27	Nanotecnología	☐	☐	☐	☐	☐	☐	☐	☐
28	Terremotos	☐	☐	☐	☐	☐	☐	☐	☐
29	Inundaciones	☐	☐	☐	☐	☐	☐	☐	☐
30	Aluviones	☐	☐	☐	☐	☐	☐	☐	☐
31	Incendios (Grandes incendios forestales)	☐	☐	☐	☐	☐	☐	☐	☐
32	Tsunamis	☐	☐	☐	☐	☐	☐	☐	☐
33	Erupciones volcánicas	☐	☐	☐	☐	☐	☐	☐	☐
34	Temperaturas extremas (Olas de calor - frío)	☐	☐	☐	☐	☐	☐	☐	☐
35	Sequías	☐	☐	☐	☐	☐	☐	☐	☐
36	Tormentas (viento, nieve)	☐	☐	☐	☐	☐	☐	☐	☐
37	Nadar	☐	☐	☐	☐	☐	☐	☐	☐
38	Esquiar	☐	☐	☐	☐	☐	☐	☐	☐
39	Asolearse	☐	☐	☐	☐	☐	☐	☐	☐
40	Alimentos con alto contenido graso	☐	☐	☐	☐	☐	☐	☐	☐

Confianza en Instituciones Comunicadoras

Chile es un país que se ve afectado por numerosos desastres naturales, tales como: terremotos, tsunamis, aluviones, inundaciones, tormentas (de lluvia, nieve), grandes incendios forestales, temperaturas extremas (olas de calor - frío) y sequías.
Existen diversas instituciones públicas y privadas, que cumplen el rol de informar a la ciudadanía respecto de los desastres naturales, tanto durante la ocurrencia de un desastre, como en sus etapas previas y posteriores. En base a lo anterior, conteste cuidadosamente las siguientes preguntas:

4.- Frente a la ocurrencia de un Desastre Natural, siento confianza en que (……) proporcionará TODA la INFORMACIÓN RELEVANTE para la salud y seguridad de la ciudadanía.

	Fuentes de Información	Muy en desacuerdo	En desacuerdo	Ni de acuerdo ni en desacuerdo	De acuerdo	Muy de acuerdo	NS/ NR
1	Gobierno	☐	☐	☐	☐	☐	☐
2	Autoridades Locales	☐	☐	☐	☐	☐	☐
3	Comunidad Científica	☐	☐	☐	☐	☐	☐
4	Cruz Roja	☐	☐	☐	☐	☐	☐
5	Oficina Nacional de Emergencias del Ministerio del Interior (ONEMI)	☐	☐	☐	☐	☐	☐
6	Fuerzas Armadas	☐	☐	☐	☐	☐	☐
7	Carabineros de Chile	☐	☐	☐	☐	☐	☐
8	Cuerpo de Bomberos	☐	☐	☐	☐	☐	☐
9	Asociación Chilena de Seguridad (AChS)	☐	☐	☐	☐	☐	☐
10	Servicio Hidrográfico y Oceanográfico de la Armada (SHOA)	☐	☐	☐	☐	☐	☐

5.- Frente a la ocurrencia de un Desastre Natural, siento confianza en que (……) mantendrá una COMUNICACIÓN ABIERTA Y TRANSPARENTE con la ciudadanía.

	Fuentes de Información	Muy en desacuerdo	En desacuerdo	Ni de acuerdo ni en desacuerdo	De acuerdo	Muy de acuerdo	NS/ NR
1	Gobierno	☐	☐	☐	☐	☐	☐
2	Autoridades Locales	☐	☐	☐	☐	☐	☐
3	Comunidad Científica	☐	☐	☐	☐	☐	☐
4	Cruz Roja	☐	☐	☐	☐	☐	☐
5	Oficina Nacional de Emergencias del Ministerio del Interior (ONEMI)	☐	☐	☐	☐	☐	☐
6	Fuerzas Armadas	☐	☐	☐	☐	☐	☐
7	Carabineros de Chile	☐	☐	☐	☐	☐	☐
8	Cuerpo de Bomberos	☐	☐	☐	☐	☐	☐
9	Asociación Chilena de Seguridad (AChS)	☐	☐	☐	☐	☐	☐
10	Servicio Hidrográfico y Oceanográfico de la Armada (SHOA)	☐	☐	☐	☐	☐	☐

6.- Frente a la ocurrencia de un Desastre Natural, siento confianza en que (……) actuará SIN COMPROMISOS NI PRESIONES POLITICAS O PRIVADAS							
Fuentes de Información		**Muy en desacuerdo**	**En desacuerdo**	**Ni de acuerdo ni en desacuerdo**	**De acuerdo**	**Muy de acuerdo**	**NS/ NR**
1	Gobierno	☐	☐	☐	☐	☐	☐
2	Autoridades Locales	☐	☐	☐	☐	☐	☐
3	Comunidad Científica	☐	☐	☐	☐	☐	☐
4	Cruz Roja	☐	☐	☐	☐	☐	☐
5	Oficina Nacional de Emergencias del Ministerio del Interior (ONEMI)	☐	☐	☐	☐	☐	☐
6	Fuerzas Armadas	☐	☐	☐	☐	☐	☐
7	Carabineros de Chile	☐	☐	☐	☐	☐	☐
8	Cuerpo de Bomberos	☐	☐	☐	☐	☐	☐
9	Asociación Chilena de Seguridad (AChS)	☐	☐	☐	☐	☐	☐
10	Servicio Hidrográfico y Oceanográfico de la Armada (SHOA)	☐	☐	☐	☐	☐	☐

7.- Frente a la ocurrencia de un Desastre Natural, siento confianza en que (……) tiene las COMPETENCIAS necesarias para TOMAR BUENAS DECISIONES							
Fuentes de Información		**Muy en desacuerdo**	**En desacuerdo**	**Ni de acuerdo ni en desacuerdo**	**De acuerdo**	**Muy de acuerdo**	**NS/ NR**
1	Gobierno	☐	☐	☐	☐	☐	☐
2	Autoridades Locales	☐	☐	☐	☐	☐	☐
3	Comunidad Científica	☐	☐	☐	☐	☐	☐
4	Cruz Roja	☐	☐	☐	☐	☐	☐
5	Oficina Nacional de Emergencias del Ministerio del Interior (ONEMI)	☐	☐	☐	☐	☐	☐
6	Fuerzas Armadas	☐	☐	☐	☐	☐	☐
7	Carabineros de Chile	☐	☐	☐	☐	☐	☐
8	Cuerpo de Bomberos	☐	☐	☐	☐	☐	☐
9	Asociación Chilena de Seguridad (AChS)	☐	☐	☐	☐	☐	☐
10	Servicio Hidrográfico y Oceanográfico de la Armada (SHOA)	☐	☐	☐	☐	☐	☐

8.- Frente a la ocurrencia de un Desastre Natural, siento confianza en que (……) tiene las COMPETENCIAS necesarias para RESOLVER POSIBLES PROBLEMAS							
Fuentes de Información		**Muy en desacuerdo**	**En desacuerdo**	**Ni de acuerdo ni en desacuerdo**	**De acuerdo**	**Muy de acuerdo**	**NS/ NR**
1	Gobierno	☐	☐	☐	☐	☐	☐
2	Autoridades Locales	☐	☐	☐	☐	☐	☐
3	Comunidad Científica	☐	☐	☐	☐	☐	☐
4	Cruz Roja	☐	☐	☐	☐	☐	☐
5	Oficina Nacional de Emergencias del Ministerio del Interior (ONEMI)	☐	☐	☐	☐	☐	☐
6	Fuerzas Armadas	☐	☐	☐	☐	☐	☐
7	Carabineros de Chile	☐	☐	☐	☐	☐	☐
8	Cuerpo de Bomberos	☐	☐	☐	☐	☐	☐
9	Asociación Chilena de Seguridad (AChS)	☐	☐	☐	☐	☐	☐
10	Servicio Hidrográfico y Oceanográfico de la Armada (SHOA)	☐	☐	☐	☐	☐	☐

9.- Frente a la ocurrencia de un Desastre Natural, siento confianza en que (……) tiene las COMPETENCIAS necesarias para COMUNICAR ADECUADAMENTE SUS RIESGOS asociados.							
Fuentes de Información		**Muy en desacuerdo**	**En desacuerdo**	**Ni de acuerdo ni en desacuerdo**	**De acuerdo**	**Muy de acuerdo**	**NS/ NR**
1	Gobierno	☐	☐	☐	☐	☐	☐
2	Autoridades Locales	☐	☐	☐	☐	☐	☐
3	Comunidad Científica	☐	☐	☐	☐	☐	☐
4	Cruz Roja	☐	☐	☐	☐	☐	☐
5	Oficina Nacional de Emergencias del Ministerio del Interior (ONEMI)	☐	☐	☐	☐	☐	☐
6	Fuerzas Armadas	☐	☐	☐	☐	☐	☐
7	Carabineros de Chile	☐	☐	☐	☐	☐	☐
8	Cuerpo de Bomberos	☐	☐	☐	☐	☐	☐
9	Asociación Chilena de Seguridad (AChS)	☐	☐	☐	☐	☐	☐
10	Servicio Hidrográfico y Oceanográfico de la Armada (SHOA)	☐	☐	☐	☐	☐	☐

10.- Cuando tiene problemas, ¿Tiene Ud. Alguna persona en quien confiar, pedir ayuda o consejo?		
1	Sí, siempre	☐
2	Sí, casi siempre	☐
3	Sí, algunas veces	☐
4	Rara vez o nunca	☐
5	No necesita, no le gusta hablar ni pedir ayuda a nadie	☐
99	No sabe/ No responde	☐

11.- ¿Puede recurrir confiadamente a alguien cuando tiene un gasto imprevisto, emergencia económica u otra situación catastrófica?		
1	Sí, siempre	☐
2	Sí, casi siempre	☐
3	Sí, algunas veces	☐
4	Rara vez o nunca	☐
5	No necesita, no le gusta hablar ni pedir ayuda a nadie	☐
99	No sabe/ No responde	☐

12.- Califique su percepción de confianza de 1 a 7, considerando que 1 es nada de confianza y 7 es mucha confianza.
En general, ¿Cuánto usted confía en la gente de su villa, barrio o población?

Nada de confianza						**Mucha confianza**	**NS/NR**
1	2	3	4	5	6	7	99
☐	☐	☐	☐	☐	☐	☐	☐

Caracterización Sociodemográfica

1. NO LEER: Sexo del encuestado. (RESPUESTA SIMPLE)	
	1) Hombre
	2) Mujer

2. NO LEER: Nivel socioeconómico del encuestado. (RESPUESTA SIMPLE)	
	1) ABC1
	2) C2
	3) C3
	4) D

3. EDAD (AL DÍA DE LA ENCUESTA): _____ (ANOTE AÑOS)

4. ¿Cuántas personas viven en su hogar? PARA CADA UNA DE LAS PREGUNTAS, INDIQUE NÚMERO.	
	1) Menores de 18 años
	2) Adultos entre 18 y 64 años (INCLUYÉNDOSE)
	3) Mayores de 65 años
	99) NS / NR

5. ¿Cuál es su estado civil o conyugal actual? (RESPUESTA SIMPLE)	
	1) Soltero/a
	2) Conviviente
	3) Casado/a
	4) Separado/a - Anulado/a
	5) Divorciado/a
	6) Viudo/a
	99) NS / NR

6. ¿Cuál es el nivel educacional más alto cursado? (RESPUESTA SIMPLE)	
	1) Nunca asistió
	2) Jardín Infantil / Sala Cuna
	3) Kinder / Prekinder
	4) Diferencial
	5) Básica, Primaria o Preparatoria
	6) Media Científico Humanista o Humanidades
	7) Media Técnico Profesional, Comercial, Industrial o Normalista
	8) Técnico de Nivel Superior
	9) Profesional
	10) Postítulo
	11) Magíster
	12) Doctorado
	99) NS / NR

7. ¿Completó el nivel educacional anteriormente declarado? (RESPUESTA SIMPLE)	
	1) Sí
	2) No
	99) NS / NR

8. ¿Cuál de estas alternativas describe mejor su situación laboral actual? (RESPUESTA SIMPLE)	
	1) Trabajando por ingreso
	2) Tiene empleo, pero no está trabajando (es decir, tiene contrato pero aún no comienza a trabajar)
	3) Trabajando para un familiar sin pago (por ejemplo, un hijo que trabaja en el negocio familiar y no recibe sueldo)
	4) Estudiando
	5) Sin trabajo y está buscando
	6) En quehaceres de su hogar (dueña de casa)
	7) Jubilado, pensionado o rentista
	8) Otra situación (discapacitado, inhabilitado para trabajar)
	99) NS / NR

9. Indique el rango en que se encuentra su ingreso mensual líquido familiar ($ por mes) (RESPUESTA SIMPLE)	
	1) Entre $0 y $200.000
	2) Entre $200.000 y $400.000
	3) Entre $400.000 y $600.000
	4) Entre $600.000 y $1.200.000
	5) Entre $1.200.000 y $1.600.000
	6)Entre $1.600.000 y $2.000.000
	7) Más de $2.000.000
	99) NS / NR

10. NO LEER: Indique por favor su dirección domiciliaria
[Instrucción al encuestador: Leer en caso de que la encuesta se realice fuera del hogar. NO Leer en caso de que la encuesta se haga a domicilio]

Calle y Número: _____

Comuna: _____

Ciudad (No Leer): _____

Estudio de Percepción de Riesgo de la Ciudadanía

Nombre del encuestador: _____ Nº de encuestador:_____

Hora de comienzo: __ : __ Hora de finalización: __ : __ N° de manzana:_____

Presentación del encuestador

Buenos días/tardes,

Mi nombre es _____

Estamos haciendo una encuesta para conocer las percepciones de riesgo de la población chilena frente a distintas actividades o peligros. Los resultados obtenidos se utilizarán para apoyar el diseño, evaluación e implementación de programas de control de riesgos.

Este estudio es desarrollado por el **Centro Nacional de Investigación para la Gestión Integrada de Desastres Naturales** (CIGIDEN), el cual está conformado por investigadores de la **Pontificia Universidad Católica de Chile**, **Universidad Técnica Federico Santa María**, **Universidad Andrés Bello** y la **Universidad Católica del Norte**.

Toda la información que nos proporcione será anónima y confidencial, y su uso será exclusivamente para fines académicos.

Estamos interesados en conocer su opinión, por favor, ¿sería tan amable de contestar el siguiente cuestionario? Dura aproximadamente 10-15 minutos.

Percepción de Riesgo de la Población Chilena

A lo largo de nuestras vidas nos vemos expuestos a distintos niveles de riesgos asociados a diversas actividades, sustancias o tecnologías, como las que se indican en la siguiente lista:

1. Motocicletas
2. Aviación comercial
3. Bicicletas
4. Transporte público
5. Vehículos motorizados (automóviles)
6. Fumar cigarrillos
7. Bebidas alcohólicas
8. Marihuana
9. Cocaína
10. Asaltos
11. Influenza AH1N1
12. Terrorismo
13. Armas nucleares
14. Destrucción de la capa de ozono
15. Cambio climático
16. Contaminación Atmosférica
17. Partículas en suspensión
18. Colorantes de comida
19. Preservantes de comida
20. Fertilizantes químicos
21. Pesticidas usados en la agricultura
22. Alimentos transgénicos
23. Combustibles fósiles (carbón, petróleo, leña)
24. Antenas de retransmisión de celulares
25. Ingeniería Genética
26. Energía nuclear
27. Nanotecnología
28. Terremotos
29. Inundaciones
30. Aluviones
31. Incendios (Grandes incendios forestales)
32. Tsunamis
33. Erupciones volcánicas
34. Temperaturas extremas (Olas de calor - frío)
35. Sequías
36. Tormentas (viento, nieve)
37. Nadar
38. Esquiar
39. Asolearse
40. Alimentos con alto contenido graso

Queramos o no, cada una de las actividades, sustancias y tecnologías mostradas en la lista anterior tiene asociado un cierto riesgo de muerte, siendo algunas de ellas más riesgosas que otras.

Por ejemplo, piense que se encuentra en el último piso del edificio más alto del centro de Santiago, en un día lluvioso, con vientos de hasta 60 Km/hora y a una hora de alta congestión, y lo que usted quiere es bajar hasta el primer piso. Para ello puede considerar varias alternativas, como por ejemplo utilizar el ascensor, usar las escaleras, bajar por fuera mediante una cuerda, lanzarse en alas delta o arrojarse en paracaídas.

Claramente, cada una de estas alternativas tiene un cierto riesgo de muerte asociado, en algunos casos bajo y en otros es alto.
Lo que se persigue en esta encuesta es caracterizar la percepción de riesgo de la población chilena frente a cada actividad, sustancia y tecnología. Para ello le pedimos que conteste las preguntas que aparecen en las próximas páginas de acuerdo al siguiente procedimiento:

i) Lea cuidadosamente cada pregunta.
ii) Para cada actividad, sustancia y tecnología conteste cada pregunta marcando con una “X” en el cuadrado de la escala que según usted mejor corresponda.

Como modelo, y pensando en el ejemplo enunciado anteriormente (recuadro página anterior), considere la siguiente pregunta:

¿Cuánto riesgo piensa usted está asociado a cada una de las siguientes actividades?

	Actividades	**Ningún riesgo**						**Totalmente riesgoso**
		1	2	3	4	5	6	7
1	Bajar el edificio utilizando el ascensor	☐	☐	☐	☐	☐	☐	☐
2	Bajar el edificio utilizando las escaleras	☐	☐	☐	☐	☐	☐	☐
3	Bajar el edificio utilizando una cuerda	☐	☐	☐	☐	☐	☐	☐
4	Bajar el edificio lanzándose en alas delta	☐	☐	☐	☐	☐	☐	☐
5	Bajar el edificio arrojándose en paracaídas	☐	☐	☐	☐	☐	☐	☐
⇣	⇣	⇣						

Si usted considera que la actividad 1 (bajar el edificio utilizando el ascensor) tiene asociado un riesgo muy bajo, entonces debería marcar con una "X" en el número 1 de la escala, tal como se muestra en la tabla de abajo. Del mismo modo, si considera que la actividad 3 (bajar el edificio utilizando una cuerda) tiene un riesgo asociado bastante grande, pero que no es el máximo, entonces debería marcar con una "X" en el número 5 o 6 (según lo que usted piense) de la escala. Finalmente, si usted estima que la actividad 5 (bajar el edificio arrojándose en paracaídas) tiene un riesgo asociado muy alto, debería marcar con una "X" en el número 7 de la escala. La siguiente tabla muestra cómo se marcarían estas respuestas (nota: estas son respuestas ilustrativas solamente, no tienen ninguna relevancia).

¿Cuánto riesgo piensa usted está asociado a cada una de las siguientes actividades?

	Actividades	**Ningún riesgo**						**Totalmente riesgoso**
		1	2	3	4	5	6	7
1	Bajar el edificio utilizando el ascensor	X	☐	☐	☐	☐	☐	☐
2	Bajar el edificio utilizando las escaleras	☐	X	☐	☐	☐	☐	☐
3	Bajar el edificio utilizando una cuerda	☐	☐	☐	☐	X	☐	☐
4	Bajar el edificio lanzándose en alas delta	☐	☐	☐	☐	☐	☐	X
5	Bajar el edificio arrojándose en paracaídas	☐	☐	☐	☐	☐	☐	X
⇣	⇣	⇣						

Por favor, conteste las siguientes preguntas marcando con una "X" el cuadrado de la escala que según usted corresponda, para cada una de las actividades, sustancias y tecnologías que se presentan a continuación.

Consentimiento Informado

Doy consentimiento a mi participación en el proyecto de investigación "Percepciones de riesgo de la población chilena"

Firma _____

1. El riesgo asociado a (……) **¿es un riesgo NUEVO para la POBLACIÓN EXPUESTA, o es un riesgo VIEJO y familiar?**

	Actividades, Sustancias y Tecnologías	Riesgo Nuevo						Riesgo Viejo	NS/NR
		1	2	3	4	5	6	7	99
1	Motocicletas	☐	☐	☐	☐	☐	☐	☐	☐
2	Aviación comercial	☐	☐	☐	☐	☐	☐	☐	☐
3	Bicicletas	☐	☐	☐	☐	☐	☐	☐	☐
4	Transporte público	☐	☐	☐	☐	☐	☐	☐	☐
5	Vehículos motorizados (automóviles)	☐	☐	☐	☐	☐	☐	☐	☐
6	Fumar cigarrillos	☐	☐	☐	☐	☐	☐	☐	☐
7	Bebidas alcohólicas	☐	☐	☐	☐	☐	☐	☐	☐
8	Marihuana	☐	☐	☐	☐	☐	☐	☐	☐
9	Cocaína	☐	☐	☐	☐	☐	☐	☐	☐
10	Asaltos	☐	☐	☐	☐	☐	☐	☐	☐
11	Influenza AH1N1	☐	☐	☐	☐	☐	☐	☐	☐
12	Terrorismo	☐	☐	☐	☐	☐	☐	☐	☐
13	Armas nucleares	☐	☐	☐	☐	☐	☐	☐	☐
14	Destrucción de la capa de ozono	☐	☐	☐	☐	☐	☐	☐	☐
15	Cambio climático	☐	☐	☐	☐	☐	☐	☐	☐
16	Contaminación Atmosférica	☐	☐	☐	☐	☐	☐	☐	☐
17	Partículas en suspensión	☐	☐	☐	☐	☐	☐	☐	☐
18	Colorantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
19	Preservantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
20	Fertilizantes químicos	☐	☐	☐	☐	☐	☐	☐	☐
21	Pesticidas usados en la agricultura	☐	☐	☐	☐	☐	☐	☐	☐
22	Alimentos transgénicos	☐	☐	☐	☐	☐	☐	☐	☐
23	Combustibles fósiles (carbón, petróleo, leña)	☐	☐	☐	☐	☐	☐	☐	☐
24	Antenas de retransmisión de celulares	☐	☐	☐	☐	☐	☐	☐	☐
25	Ingeniería Genética	☐	☐	☐	☐	☐	☐	☐	☐
26	Energía nuclear	☐	☐	☐	☐	☐	☐	☐	☐
27	Nanotecnología	☐	☐	☐	☐	☐	☐	☐	☐
28	Terremotos	☐	☐	☐	☐	☐	☐	☐	☐
29	Inundaciones	☐	☐	☐	☐	☐	☐	☐	☐
30	Aluviones	☐	☐	☐	☐	☐	☐	☐	☐
31	Incendios (Grandes incendios forestales)	☐	☐	☐	☐	☐	☐	☐	☐
32	Tsunamis	☐	☐	☐	☐	☐	☐	☐	☐
33	Erupciones volcánicas	☐	☐	☐	☐	☐	☐	☐	☐
34	Temperaturas extremas (Olas de calor - frío)	☐	☐	☐	☐	☐	☐	☐	☐
35	Sequías	☐	☐	☐	☐	☐	☐	☐	☐
36	Tormentas (viento, nieve)	☐	☐	☐	☐	☐	☐	☐	☐
37	Nadar	☐	☐	☐	☐	☐	☐	☐	☐
38	Esquiar	☐	☐	☐	☐	☐	☐	☐	☐
39	Asolearse	☐	☐	☐	☐	☐	☐	☐	☐
40	Alimentos con alto contenido graso	☐	☐	☐	☐	☐	☐	☐	☐

2. El riesgo asociado a (……) **¿en qué grado es enfrentado VOLUNTARIAMENTE por la POBLACIÓN EXPUESTA?**

	Actividades, Sustancias y Tecnologías	Riesgo Voluntario						Riesgo Involuntario	NS/NR
		1	2	3	4	5	6	7	99
1	Motocicletas	☐	☐	☐	☐	☐	☐	☐	☐
2	Aviación comercial	☐	☐	☐	☐	☐	☐	☐	☐
3	Bicicletas	☐	☐	☐	☐	☐	☐	☐	☐
4	Transporte público	☐	☐	☐	☐	☐	☐	☐	☐
5	Vehículos motorizados (automóviles)	☐	☐	☐	☐	☐	☐	☐	☐
6	Fumar cigarrillos	☐	☐	☐	☐	☐	☐	☐	☐
7	Bebidas alcohólicas	☐	☐	☐	☐	☐	☐	☐	☐
8	Marihuana	☐	☐	☐	☐	☐	☐	☐	☐
9	Cocaína	☐	☐	☐	☐	☐	☐	☐	☐
10	Asaltos	☐	☐	☐	☐	☐	☐	☐	☐
11	Influenza AH1N1	☐	☐	☐	☐	☐	☐	☐	☐
12	Terrorismo	☐	☐	☐	☐	☐	☐	☐	☐
13	Armas nucleares	☐	☐	☐	☐	☐	☐	☐	☐
14	Destrucción de la capa de ozono	☐	☐	☐	☐	☐	☐	☐	☐
15	Cambio climático	☐	☐	☐	☐	☐	☐	☐	☐
16	Contaminación Atmosférica	☐	☐	☐	☐	☐	☐	☐	☐
17	Partículas en suspensión	☐	☐	☐	☐	☐	☐	☐	☐
18	Colorantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
19	Preservantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
20	Fertilizantes químicos	☐	☐	☐	☐	☐	☐	☐	☐
21	Pesticidas usados en la agricultura	☐	☐	☐	☐	☐	☐	☐	☐
22	Alimentos transgénicos	☐	☐	☐	☐	☐	☐	☐	☐
23	Combustibles fósiles (carbón, petróleo, leña)	☐	☐	☐	☐	☐	☐	☐	☐
24	Antenas de retransmisión de celulares	☐	☐	☐	☐	☐	☐	☐	☐
25	Ingeniería Genética	☐	☐	☐	☐	☐	☐	☐	☐
26	Energía nuclear	☐	☐	☐	☐	☐	☐	☐	☐
27	Nanotecnología	☐	☐	☐	☐	☐	☐	☐	☐
28	Terremotos	☐	☐	☐	☐	☐	☐	☐	☐
29	Inundaciones	☐	☐	☐	☐	☐	☐	☐	☐
30	Aluviones	☐	☐	☐	☐	☐	☐	☐	☐
31	Incendios (Grandes incendios forestales)	☐	☐	☐	☐	☐	☐	☐	☐
32	Tsunamis	☐	☐	☐	☐	☐	☐	☐	☐
33	Erupciones volcánicas	☐	☐	☐	☐	☐	☐	☐	☐
34	Temperaturas extremas (Olas de calor - frío)	☐	☐	☐	☐	☐	☐	☐	☐
35	Sequías	☐	☐	☐	☐	☐	☐	☐	☐
36	Tormentas (viento, nieve)	☐	☐	☐	☐	☐	☐	☐	☐
37	Nadar	☐	☐	☐	☐	☐	☐	☐	☐
38	Esquiar	☐	☐	☐	☐	☐	☐	☐	☐
39	Asolearse	☐	☐	☐	☐	☐	☐	☐	☐
40	Alimentos con alto contenido graso	☐	☐	☐	☐	☐	☐	☐	☐

3. ¿En qué magnitud (……) **tiene el potencial de causar MUERTE y DESTRUCCIÓN CATASTRÓFICA en Chile?**									
Actividades, Sustancias y Tecnologías		**Potencial Catastrófico muy bajo**						**Potencial Catastrófico muy alto**	**NS/NR**
		1	2	3	4	5	6	7	99
1	Motocicletas	☐	☐	☐	☐	☐	☐	☐	☐
2	Aviación comercial	☐	☐	☐	☐	☐	☐	☐	☐
3	Bicicletas	☐	☐	☐	☐	☐	☐	☐	☐
4	Transporte público	☐	☐	☐	☐	☐	☐	☐	☐
5	Vehículos motorizados (automóviles)	☐	☐	☐	☐	☐	☐	☐	☐
6	Fumar cigarrillos	☐	☐	☐	☐	☐	☐	☐	☐
7	Bebidas alcohólicas	☐	☐	☐	☐	☐	☐	☐	☐
8	Marihuana	☐	☐	☐	☐	☐	☐	☐	☐
9	Cocaína	☐	☐	☐	☐	☐	☐	☐	☐
10	Asaltos	☐	☐	☐	☐	☐	☐	☐	☐
11	Influenza AH1N1	☐	☐	☐	☐	☐	☐	☐	☐
12	Terrorismo	☐	☐	☐	☐	☐	☐	☐	☐
13	Armas nucleares	☐	☐	☐	☐	☐	☐	☐	☐
14	Destrucción de la capa de ozono	☐	☐	☐	☐	☐	☐	☐	☐
15	Cambio climático	☐	☐	☐	☐	☐	☐	☐	☐
16	Contaminación Atmosférica	☐	☐	☐	☐	☐	☐	☐	☐
17	Partículas en suspensión	☐	☐	☐	☐	☐	☐	☐	☐
18	Colorantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
19	Preservantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
20	Fertilizantes químicos	☐	☐	☐	☐	☐	☐	☐	☐
21	Pesticidas usados en la agricultura	☐	☐	☐	☐	☐	☐	☐	☐
22	Alimentos transgénicos	☐	☐	☐	☐	☐	☐	☐	☐
23	Combustibles fósiles (carbón, petróleo, leña)	☐	☐	☐	☐	☐	☐	☐	☐
24	Antenas de retransmisión de celulares	☐	☐	☐	☐	☐	☐	☐	☐
25	Ingeniería Genética	☐	☐	☐	☐	☐	☐	☐	☐
26	Energía nuclear	☐	☐	☐	☐	☐	☐	☐	☐
27	Nanotecnología	☐	☐	☐	☐	☐	☐	☐	☐
28	Terremotos	☐	☐	☐	☐	☐	☐	☐	☐
29	Inundaciones	☐	☐	☐	☐	☐	☐	☐	☐
30	Aluviones	☐	☐	☐	☐	☐	☐	☐	☐
31	Incendios (Grandes incendios forestales)	☐	☐	☐	☐	☐	☐	☐	☐
32	Tsunamis	☐	☐	☐	☐	☐	☐	☐	☐
33	Erupciones volcánicas	☐	☐	☐	☐	☐	☐	☐	☐
34	Temperaturas extremas (Olas de calor - frío)	☐	☐	☐	☐	☐	☐	☐	☐
35	Sequías	☐	☐	☐	☐	☐	☐	☐	☐
36	Tormentas (viento, nieve)	☐	☐	☐	☐	☐	☐	☐	☐
37	Nadar	☐	☐	☐	☐	☐	☐	☐	☐
38	Esquiar	☐	☐	☐	☐	☐	☐	☐	☐
39	Asolearse	☐	☐	☐	☐	☐	☐	☐	☐
40	Alimentos con alto contenido graso	☐	☐	☐	☐	☐	☐	☐	☐

4. El riesgo asociado a (……) **¿es un riesgo COMÚN o un riesgo TERRIBLE?**
Riesgo común: la gente se ha acostumbrado a vivir con él y piensa en él con razonable calma.
Riesgo terrible: produce terror a la gente.

	Actividades, Sustancias y Tecnologías	**Riesgo Común**						**Riesgo Terrible**	**NS/NR**
		1	2	3	4	5	6	7	99
1	Motocicletas	☐	☐	☐	☐	☐	☐	☐	☐
2	Aviación comercial	☐	☐	☐	☐	☐	☐	☐	☐
3	Bicicletas	☐	☐	☐	☐	☐	☐	☐	☐
4	Transporte público	☐	☐	☐	☐	☐	☐	☐	☐
5	Vehículos motorizados (automóviles)	☐	☐	☐	☐	☐	☐	☐	☐
6	Fumar cigarrillos	☐	☐	☐	☐	☐	☐	☐	☐
7	Bebidas alcohólicas	☐	☐	☐	☐	☐	☐	☐	☐
8	Marihuana	☐	☐	☐	☐	☐	☐	☐	☐
9	Cocaína	☐	☐	☐	☐	☐	☐	☐	☐
10	Asaltos	☐	☐	☐	☐	☐	☐	☐	☐
11	Influenza AH1N1	☐	☐	☐	☐	☐	☐	☐	☐
12	Terrorismo	☐	☐	☐	☐	☐	☐	☐	☐
13	Armas nucleares	☐	☐	☐	☐	☐	☐	☐	☐
14	Destrucción de la capa de ozono	☐	☐	☐	☐	☐	☐	☐	☐
15	Cambio climático	☐	☐	☐	☐	☐	☐	☐	☐
16	Contaminación Atmosférica	☐	☐	☐	☐	☐	☐	☐	☐
17	Partículas en suspensión	☐	☐	☐	☐	☐	☐	☐	☐
18	Colorantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
19	Preservantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
20	Fertilizantes químicos	☐	☐	☐	☐	☐	☐	☐	☐
21	Pesticidas usados en la agricultura	☐	☐	☐	☐	☐	☐	☐	☐
22	Alimentos transgénicos	☐	☐	☐	☐	☐	☐	☐	☐
23	Combustibles fósiles (carbón, petróleo, leña)	☐	☐	☐	☐	☐	☐	☐	☐
24	Antenas de retransmisión de celulares	☐	☐	☐	☐	☐	☐	☐	☐
25	Ingeniería Genética	☐	☐	☐	☐	☐	☐	☐	☐
26	Energía nuclear	☐	☐	☐	☐	☐	☐	☐	☐
27	Nanotecnología	☐	☐	☐	☐	☐	☐	☐	☐
28	Terremotos	☐	☐	☐	☐	☐	☐	☐	☐
29	Inundaciones	☐	☐	☐	☐	☐	☐	☐	☐
30	Aluviones	☐	☐	☐	☐	☐	☐	☐	☐
31	Incendios (Grandes incendios forestales)	☐	☐	☐	☐	☐	☐	☐	☐
32	Tsunamis	☐	☐	☐	☐	☐	☐	☐	☐
33	Erupciones volcánicas	☐	☐	☐	☐	☐	☐	☐	☐
34	Temperaturas extremas (Olas de calor - frío)	☐	☐	☐	☐	☐	☐	☐	☐
35	Sequías	☐	☐	☐	☐	☐	☐	☐	☐
36	Tormentas (viento, nieve)	☐	☐	☐	☐	☐	☐	☐	☐
37	Nadar	☐	☐	☐	☐	☐	☐	☐	☐
38	Esquiar	☐	☐	☐	☐	☐	☐	☐	☐
39	Asolearse	☐	☐	☐	☐	☐	☐	☐	☐
40	Alimentos con alto contenido graso	☐	☐	☐	☐	☐	☐	☐	☐

Caracterización Sociodemográfica

1. NO LEER: Sexo del encuestado. (RESPUESTA SIMPLE)	
	1) Hombre
	2) Mujer

2. NO LEER: Nivel socioeconómico del encuestado. (RESPUESTA SIMPLE)	
	1) ABC1
	2) C2
	3) C3
	4) D

3. EDAD (AL DÍA DE LA ENCUESTA): _____ (ANOTE AÑOS)

4. ¿Cuántas personas viven en su hogar? PARA CADA UNA DE LAS PREGUNTAS, INDIQUE NÚMERO.	
	1) Menores de 18 años
	2) Adultos entre 18 y 64 años (INCLUYÉNDOSE)
	3) Mayores de 65 años
	99) NS / NR

5. ¿Cuál es su estado civil o conyugal actual? (RESPUESTA SIMPLE)	
	1) Soltero/a
	2) Conviviente
	3) Casado/a
	4) Separado/a - Anulado/a
	5) Divorciado/a
	6) Viudo/a
	99) NS / NR

6. ¿Cuál es el nivel educacional más alto cursado? (RESPUESTA SIMPLE)	
	1) Nunca asistió
	2) Jardín Infantil / Sala Cuna
	3) Kinder / Prekinder
	4) Diferencial
	5) Básica, Primaria o Preparatoria
	6) Media Científico Humanista o Humanidades
	7) Media Técnico Profesional, Comercial, Industrial o Normalista
	8) Técnico de Nivel Superior
	9) Profesional
	10) Postítulo
	11) Magíster
	12) Doctorado
	99) NS / NR

7. ¿Completó el nivel educacional anteriormente declarado? (RESPUESTA SIMPLE)	
	1) Sí
	2) No
	99) NS / NR

8. ¿Cuál de estas alternativas describe mejor su situación laboral actual? (RESPUESTA SIMPLE)	
	1) Trabajando por ingreso
	2) Tiene empleo, pero no está trabajando (es decir, tiene contrato pero aún no comienza a trabajar)
	3) Trabajando para un familiar sin pago (por ejemplo, un hijo que trabaja en el negocio familiar y no recibe sueldo)
	4) Estudiando
	5) Sin trabajo y está buscando
	6) En quehaceres de su hogar (dueña de casa)
	7) Jubilado, pensionado o rentista
	8) Otra situación (discapacitado, inhabilitado para trabajar)
	99) NS / NR

9. Indique el rango en que se encuentra su ingreso mensual líquido familiar ($ por mes) (RESPUESTA SIMPLE)	
	1) Entre $0 y $200.000
	2) Entre $200.000 y $400.000
	3) Entre $400.000 y $600.000
	4) Entre $600.000 y $1.200.000
	5) Entre $1.200.000 y $1.600.000
	6)Entre $1.600.000 y $2.000.000
	7) Más de $2.000.000
	99) NS / NR

10. NO LEER: Indique por favor su dirección domiciliaria
[Instrucción al encuestador: Leer en caso de que la encuesta se realice fuera del hogar. NO Leer en caso de que la encuesta se haga a domicilio]

Calle y Número: _____

Comuna: _____

Ciudad (No Leer): _____

Estudio de Percepción de Riesgo de la Ciudadanía

Nombre del encuestador: _____ Nº de encuestador:_____

Hora de comienzo: __ : __ Hora de finalización: __ : __ N° de manzana:_____

Presentación del encuestador

Buenos días/tardes,

Mi nombre es _____

Estamos haciendo una encuesta para conocer las percepciones de riesgo de la población chilena frente a distintas actividades o peligros. Los resultados obtenidos se utilizarán para apoyar el diseño, evaluación e implementación de programas de control de riesgos.

Este estudio es desarrollado por el **Centro Nacional de Investigación para la Gestión Integrada de Desastres Naturales** (CIGIDEN), el cual está conformado por investigadores de la **Pontificia Universidad Católica de Chile**, **Universidad Técnica Federico Santa María**, **Universidad Andrés Bello** y la **Universidad Católica del Norte**.

Toda la información que nos proporcione será anónima y confidencial, y su uso será exclusivamente para fines académicos.

Estamos interesados en conocer su opinión, por favor, ¿sería tan amable de contestar el siguiente cuestionario? Dura aproximadamente 10-15 minutos.

Percepción de Riesgo de la Población Chilena

A lo largo de nuestras vidas nos vemos expuestos a distintos niveles de riesgos asociados a diversas actividades, sustancias o tecnologías, como las que se indican en la siguiente lista:

1. Motocicletas
2. Aviación comercial
3. Bicicletas
4. Transporte público
5. Vehículos motorizados (automóviles)
6. Fumar cigarrillos
7. Bebidas alcohólicas
8. Marihuana
9. Cocaína
10. Asaltos
11. Influenza AH1N1
12. Terrorismo
13. Armas nucleares
14. Destrucción de la capa de ozono
15. Cambio climático
16. Contaminación Atmosférica
17. Partículas en suspensión
18. Colorantes de comida
19. Preservantes de comida
20. Fertilizantes químicos
21. Pesticidas usados en la agricultura
22. Alimentos transgénicos
23. Combustibles fósiles (carbón, petróleo, leña)
24. Antenas de retransmisión de celulares
25. Ingeniería Genética
26. Energía nuclear
27. Nanotecnología
28. Terremotos
29. Inundaciones
30. Aluviones
31. Incendios (Grandes incendios forestales)
32. Tsunamis
33. Erupciones volcánicas
34. Temperaturas extremas (Olas de calor - frío)
35. Sequías
36. Tormentas (viento, nieve)
37. Nadar
38. Esquiar
39. Asolearse
40. Alimentos con alto contenido graso

Queramos o no, cada una de las actividades, sustancias y tecnologías mostradas en la lista anterior tiene asociado un cierto riesgo, siendo algunas de ellas más riesgosas que otras.

Lo que se persigue en esta encuesta es caracterizar la percepción de riesgo de la población chilena frente a cada actividad, sustancia y tecnología. Para ello le pedimos que conteste las preguntas que aparecen en las próximas páginas de acuerdo al siguiente procedimiento:

i) Lea cuidadosamente cada pregunta.
ii) Para cada actividad, sustancia y tecnología conteste cada pregunta marcando con una "X" en el cuadrado de la escala que según usted mejor corresponda.

Consentimiento Informado

Doy consentimiento a mi participación en el proyecto de investigación "Percepciones de riesgo de la población chilena"

Firma _____

1. El riesgo asociado a (……) **¿en qué grado es CONOCIDO por la POBLACIÓN NACIONAL?**

	Actividades, Sustancias y Tecnologías	Alto grado de conocimiento						Ningún grado de conocimiento	NS/NR
		1	2	3	4	5	6	7	99
1	Motocicletas	☐	☐	☐	☐	☐	☐	☐	☐
2	Aviación comercial	☐	☐	☐	☐	☐	☐	☐	☐
3	Bicicletas	☐	☐	☐	☐	☐	☐	☐	☐
4	Transporte público	☐	☐	☐	☐	☐	☐	☐	☐
5	Vehículos motorizados (automóviles)	☐	☐	☐	☐	☐	☐	☐	☐
6	Fumar cigarrillos	☐	☐	☐	☐	☐	☐	☐	☐
7	Bebidas alcohólicas	☐	☐	☐	☐	☐	☐	☐	☐
8	Marihuana	☐	☐	☐	☐	☐	☐	☐	☐
9	Cocaína	☐	☐	☐	☐	☐	☐	☐	☐
10	Asaltos	☐	☐	☐	☐	☐	☐	☐	☐
11	Influenza AH1N1	☐	☐	☐	☐	☐	☐	☐	☐
12	Terrorismo	☐	☐	☐	☐	☐	☐	☐	☐
13	Armas nucleares	☐	☐	☐	☐	☐	☐	☐	☐
14	Destrucción de la capa de ozono	☐	☐	☐	☐	☐	☐	☐	☐
15	Cambio climático	☐	☐	☐	☐	☐	☐	☐	☐
16	Contaminación Atmosférica	☐	☐	☐	☐	☐	☐	☐	☐
17	Partículas en suspensión	☐	☐	☐	☐	☐	☐	☐	☐
18	Colorantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
19	Preservantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
20	Fertilizantes químicos	☐	☐	☐	☐	☐	☐	☐	☐
21	Pesticidas usados en la agricultura	☐	☐	☐	☐	☐	☐	☐	☐
22	Alimentos transgénicos	☐	☐	☐	☐	☐	☐	☐	☐
23	Combustibles fósiles (carbón, petróleo, leña)	☐	☐	☐	☐	☐	☐	☐	☐
24	Antenas de retransmisión de celulares	☐	☐	☐	☐	☐	☐	☐	☐
25	Ingeniería Genética	☐	☐	☐	☐	☐	☐	☐	☐
26	Energía nuclear	☐	☐	☐	☐	☐	☐	☐	☐
27	Nanotecnología	☐	☐	☐	☐	☐	☐	☐	☐
28	Terremotos	☐	☐	☐	☐	☐	☐	☐	☐
29	Inundaciones	☐	☐	☐	☐	☐	☐	☐	☐
30	Aluviones	☐	☐	☐	☐	☐	☐	☐	☐
31	Incendios (Grandes incendios forestales)	☐	☐	☐	☐	☐	☐	☐	☐
32	Tsunamis	☐	☐	☐	☐	☐	☐	☐	☐
33	Erupciones volcánicas	☐	☐	☐	☐	☐	☐	☐	☐
34	Temperaturas extremas (Olas de calor - frío)	☐	☐	☐	☐	☐	☐	☐	☐
35	Sequías	☐	☐	☐	☐	☐	☐	☐	☐
36	Tormentas (viento, nieve)	☐	☐	☐	☐	☐	☐	☐	☐
37	Nadar	☐	☐	☐	☐	☐	☐	☐	☐
38	Esquiar	☐	☐	☐	☐	☐	☐	☐	☐
39	Asolearse	☐	☐	☐	☐	☐	☐	☐	☐
40	Alimentos con alto contenido graso	☐	☐	☐	☐	☐	☐	☐	☐

2. El riesgo asociado a (……) **¿en qué grado puede ser CONTROLADO por la POBLACIÓN NACIONAL?**									
Actividades, Sustancias y Tecnologías		**El riesgo NO puede ser controlado por la población**						**El riesgo SI puede ser controlado por la población**	**NS/NR**
		1	2	3	4	5	6	7	99
1	Motocicletas	☐	☐	☐	☐	☐	☐	☐	☐
2	Aviación comercial	☐	☐	☐	☐	☐	☐	☐	☐
3	Bicicletas	☐	☐	☐	☐	☐	☐	☐	☐
4	Transporte público	☐	☐	☐	☐	☐	☐	☐	☐
5	Vehículos motorizados (automóviles)	☐	☐	☐	☐	☐	☐	☐	☐
6	Fumar cigarrillos	☐	☐	☐	☐	☐	☐	☐	☐
7	Bebidas alcohólicas	☐	☐	☐	☐	☐	☐	☐	☐
8	Marihuana	☐	☐	☐	☐	☐	☐	☐	☐
9	Cocaína	☐	☐	☐	☐	☐	☐	☐	☐
10	Asaltos	☐	☐	☐	☐	☐	☐	☐	☐
11	Influenza AH1N1	☐	☐	☐	☐	☐	☐	☐	☐
12	Terrorismo	☐	☐	☐	☐	☐	☐	☐	☐
13	Armas nucleares	☐	☐	☐	☐	☐	☐	☐	☐
14	Destrucción de la capa de ozono	☐	☐	☐	☐	☐	☐	☐	☐
15	Cambio climático	☐	☐	☐	☐	☐	☐	☐	☐
16	Contaminación Atmosférica	☐	☐	☐	☐	☐	☐	☐	☐
17	Partículas en suspensión	☐	☐	☐	☐	☐	☐	☐	☐
18	Colorantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
19	Preservantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
20	Fertilizantes químicos	☐	☐	☐	☐	☐	☐	☐	☐
21	Pesticidas usados en la agricultura	☐	☐	☐	☐	☐	☐	☐	☐
22	Alimentos transgénicos	☐	☐	☐	☐	☐	☐	☐	☐
23	Combustibles fósiles (carbón, petróleo, leña)	☐	☐	☐	☐	☐	☐	☐	☐
24	Antenas de retransmisión de celulares	☐	☐	☐	☐	☐	☐	☐	☐
25	Ingeniería Genética	☐	☐	☐	☐	☐	☐	☐	☐
26	Energía nuclear	☐	☐	☐	☐	☐	☐	☐	☐
27	Nanotecnología	☐	☐	☐	☐	☐	☐	☐	☐
28	Terremotos	☐	☐	☐	☐	☐	☐	☐	☐
29	Inundaciones	☐	☐	☐	☐	☐	☐	☐	☐
30	Aluviones	☐	☐	☐	☐	☐	☐	☐	☐
31	Incendios (Grandes incendios forestales)	☐	☐	☐	☐	☐	☐	☐	☐
32	Tsunamis	☐	☐	☐	☐	☐	☐	☐	☐
33	Erupciones volcánicas	☐	☐	☐	☐	☐	☐	☐	☐
34	Temperaturas extremas (Olas de calor - frío)	☐	☐	☐	☐	☐	☐	☐	☐
35	Sequías	☐	☐	☐	☐	☐	☐	☐	☐
36	Tormentas (viento, nieve)	☐	☐	☐	☐	☐	☐	☐	☐
37	Nadar	☐	☐	☐	☐	☐	☐	☐	☐
38	Esquiar	☐	☐	☐	☐	☐	☐	☐	☐
39	Asolearse	☐	☐	☐	☐	☐	☐	☐	☐
40	Alimentos con alto contenido graso	☐	☐	☐	☐	☐	☐	☐	☐

3. Cuando el riesgo asociado a (……) **se presenta ¿cuán probable es que las CONSECUENCIAS SEAN FATALES?**

	Actividades, Sustancias y Tecnologías	Consecuencias del riesgo NO fatales					Consecuencias del riesgo fatales		NS/NR
		1	2	3	4	5	6	7	99
1	Motocicletas	☐	☐	☐	☐	☐	☐	☐	☐
2	Aviación comercial	☐	☐	☐	☐	☐	☐	☐	☐
3	Bicicletas	☐	☐	☐	☐	☐	☐	☐	☐
4	Transporte público	☐	☐	☐	☐	☐	☐	☐	☐
5	Vehículos motorizados (automóviles)	☐	☐	☐	☐	☐	☐	☐	☐
6	Fumar cigarrillos	☐	☐	☐	☐	☐	☐	☐	☐
7	Bebidas alcohólicas	☐	☐	☐	☐	☐	☐	☐	☐
8	Marihuana	☐	☐	☐	☐	☐	☐	☐	☐
9	Cocaína	☐	☐	☐	☐	☐	☐	☐	☐
10	Asaltos	☐	☐	☐	☐	☐	☐	☐	☐
11	Influenza AH1N1	☐	☐	☐	☐	☐	☐	☐	☐
12	Terrorismo	☐	☐	☐	☐	☐	☐	☐	☐
13	Armas nucleares	☐	☐	☐	☐	☐	☐	☐	☐
14	Destrucción de la capa de ozono	☐	☐	☐	☐	☐	☐	☐	☐
15	Cambio climático	☐	☐	☐	☐	☐	☐	☐	☐
16	Contaminación Atmosférica	☐	☐	☐	☐	☐	☐	☐	☐
17	Partículas en suspensión	☐	☐	☐	☐	☐	☐	☐	☐
18	Colorantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
19	Preservantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
20	Fertilizantes químicos	☐	☐	☐	☐	☐	☐	☐	☐
21	Pesticidas usados en la agricultura	☐	☐	☐	☐	☐	☐	☐	☐
22	Alimentos transgénicos	☐	☐	☐	☐	☐	☐	☐	☐
23	Combustibles fósiles (carbón, petróleo, leña)	☐	☐	☐	☐	☐	☐	☐	☐
24	Antenas de retransmisión de celulares	☐	☐	☐	☐	☐	☐	☐	☐
25	Ingeniería Genética	☐	☐	☐	☐	☐	☐	☐	☐
26	Energía nuclear	☐	☐	☐	☐	☐	☐	☐	☐
27	Nanotecnología	☐	☐	☐	☐	☐	☐	☐	☐
28	Terremotos	☐	☐	☐	☐	☐	☐	☐	☐
29	Inundaciones	☐	☐	☐	☐	☐	☐	☐	☐
30	Aluviones	☐	☐	☐	☐	☐	☐	☐	☐
31	Incendios (Grandes incendios forestales)	☐	☐	☐	☐	☐	☐	☐	☐
32	Tsunamis	☐	☐	☐	☐	☐	☐	☐	☐
33	Erupciones volcánicas	☐	☐	☐	☐	☐	☐	☐	☐
34	Temperaturas extremas (Olas de calor - frío)	☐	☐	☐	☐	☐	☐	☐	☐
35	Sequías	☐	☐	☐	☐	☐	☐	☐	☐
36	Tormentas (viento, nieve)	☐	☐	☐	☐	☐	☐	☐	☐
37	Nadar	☐	☐	☐	☐	☐	☐	☐	☐
38	Esquiar	☐	☐	☐	☐	☐	☐	☐	☐
39	Asolearse	☐	☐	☐	☐	☐	☐	☐	☐
40	Alimentos con alto contenido graso	☐	☐	☐	☐	☐	☐	☐	☐

4. Los EFECTOS DEL RIESGO asociado a (……) **¿son INMEDIATOS, o se producen en un tiempo POSTERIOR (efectos retardados)?**									
Actividades, Sustancias y Tecnologías		**Efecto Inmediato**						**Efecto Retardado**	**NS/NR**
		1	2	3	4	5	6	7	99
1	Motocicletas	☐	☐	☐	☐	☐	☐	☐	☐
2	Aviación comercial	☐	☐	☐	☐	☐	☐	☐	☐
3	Bicicletas	☐	☐	☐	☐	☐	☐	☐	☐
4	Transporte público	☐	☐	☐	☐	☐	☐	☐	☐
5	Vehículos motorizados (automóviles)	☐	☐	☐	☐	☐	☐	☐	☐
6	Fumar cigarrillos	☐	☐	☐	☐	☐	☐	☐	☐
7	Bebidas alcohólicas	☐	☐	☐	☐	☐	☐	☐	☐
8	Marihuana	☐	☐	☐	☐	☐	☐	☐	☐
9	Cocaína	☐	☐	☐	☐	☐	☐	☐	☐
10	Asaltos	☐	☐	☐	☐	☐	☐	☐	☐
11	Influenza AH1N1	☐	☐	☐	☐	☐	☐	☐	☐
12	Terrorismo	☐	☐	☐	☐	☐	☐	☐	☐
13	Armas nucleares	☐	☐	☐	☐	☐	☐	☐	☐
14	Destrucción de la capa de ozono	☐	☐	☐	☐	☐	☐	☐	☐
15	Cambio climático	☐	☐	☐	☐	☐	☐	☐	☐
16	Contaminación Atmosférica	☐	☐	☐	☐	☐	☐	☐	☐
17	Partículas en suspensión	☐	☐	☐	☐	☐	☐	☐	☐
18	Colorantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
19	Preservantes de comida	☐	☐	☐	☐	☐	☐	☐	☐
20	Fertilizantes químicos	☐	☐	☐	☐	☐	☐	☐	☐
21	Pesticidas usados en la agricultura	☐	☐	☐	☐	☐	☐	☐	☐
22	Alimentos transgénicos	☐	☐	☐	☐	☐	☐	☐	☐
23	Combustibles fósiles (carbón, petróleo, leña)	☐	☐	☐	☐	☐	☐	☐	☐
24	Antenas de retransmisión de celulares	☐	☐	☐	☐	☐	☐	☐	☐
25	Ingeniería Genética	☐	☐	☐	☐	☐	☐	☐	☐
26	Energía nuclear	☐	☐	☐	☐	☐	☐	☐	☐
27	Nanotecnología	☐	☐	☐	☐	☐	☐	☐	☐
28	Terremotos	☐	☐	☐	☐	☐	☐	☐	☐
29	Inundaciones	☐	☐	☐	☐	☐	☐	☐	☐
30	Aluviones	☐	☐	☐	☐	☐	☐	☐	☐
31	Incendios (Grandes incendios forestales)	☐	☐	☐	☐	☐	☐	☐	☐
32	Tsunamis	☐	☐	☐	☐	☐	☐	☐	☐
33	Erupciones volcánicas	☐	☐	☐	☐	☐	☐	☐	☐
34	Temperaturas extremas (Olas de calor - frío)	☐	☐	☐	☐	☐	☐	☐	☐
35	Sequías	☐	☐	☐	☐	☐	☐	☐	☐
36	Tormentas (viento, nieve)	☐	☐	☐	☐	☐	☐	☐	☐
37	Nadar	☐	☐	☐	☐	☐	☐	☐	☐
38	Esquiar	☐	☐	☐	☐	☐	☐	☐	☐
39	Asolearse	☐	☐	☐	☐	☐	☐	☐	☐
40	Alimentos con alto contenido graso	☐	☐	☐	☐	☐	☐	☐	☐

Caracterización Sociodemográfica

1. NO LEER: Sexo del encuestado. (RESPUESTA SIMPLE)	
	1) Hombre
	2) Mujer

2. NO LEER: Nivel socioeconómico del encuestado. (RESPUESTA SIMPLE)	
	1) ABC1
	2) C2
	3) C3
	4) D

3. EDAD (AL DÍA DE LA ENCUESTA): _____ (ANOTE AÑOS)

4. ¿Cuántas personas viven en su hogar? PARA CADA UNA DE LAS PREGUNTAS, INDIQUE NÚMERO.	
	1) Menores de 18 años
	2) Adultos entre 18 y 64 años (INCLUYÉNDOSE)
	3) Mayores de 65 años
	99) NS / NR

5. ¿Cuál es su estado civil o conyugal actual? (RESPUESTA SIMPLE)	
	1) Soltero/a
	2) Conviviente
	3) Casado/a
	4) Separado/a - Anulado/a
	5) Divorciado/a
	6) Viudo/a
	99) NS / NR

6. ¿Cuál es el nivel educacional más alto cursado? (RESPUESTA SIMPLE)	
	1) Nunca asistió
	2) Jardín Infantil / Sala Cuna
	3) Kinder / Prekinder
	4) Diferencial
	5) Básica, Primaria o Preparatoria
	6) Media Científico Humanista o Humanidades
	7) Media Técnico Profesional, Comercial, Industrial o Normalista
	8) Técnico de Nivel Superior
	9) Profesional
	10) Postítulo
	11) Magíster
	12) Doctorado
	99) NS / NR

7. ¿Completó el nivel educacional anteriormente declarado? (RESPUESTA SIMPLE)	
	1) Sí
	2) No
	99) NS / NR

8. ¿Cuál de estas alternativas describe mejor su situación laboral actual? (RESPUESTA SIMPLE)	
	1) Trabajando por ingreso
	2) Tiene empleo, pero no está trabajando (es decir, tiene contrato pero aún no comienza a trabajar)
	3) Trabajando para un familiar sin pago (por ejemplo, un hijo que trabaja en el negocio familiar y no recibe sueldo)
	4) Estudiando
	5) Sin trabajo y está buscando
	6) En quehaceres de su hogar (dueña de casa)
	7) Jubilado, pensionado o rentista
	8) Otra situación (discapacitado, inhabilitado para trabajar)
	99) NS / NR

9. Indique el rango en que se encuentra su ingreso mensual líquido familiar ($ por mes) (RESPUESTA SIMPLE)	
	1) Entre $0 y $200.000
	2) Entre $200.000 y $400.000
	3) Entre $400.000 y $600.000
	4) Entre $600.000 y $1.200.000
	5) Entre $1.200.000 y $1.600.000
	6)Entre $1.600.000 y $2.000.000
	7) Más de $2.000.000
	99) NS / NR

10. NO LEER: Indique por favor su dirección domiciliaria

Calle y Número: _____

Comuna: _____

Ciudad: _____