

Societal risk perception by laypersons living in Venezuela. A Latin countries comparison*

La percepción de riesgo social por laicos que viven en Venezuela. Una comparación entre países Latinos

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ABSTRACT

The present study presents the mean risk magnitude judgments on 91 activities, substances, and technologies expressed by Venezuelan adults living in the two main cities of this country: Caracas and Maracaibo. These judgments were compared methodically with findings on other samples of previous studies, namely four other Latin countries: France, Spain, Brazil, and Portugal. The aim of this study was to structure the cross-country differences in risk perception between the aforementioned countries and Venezuela using cluster analysis. A 91-hazard x 5 country matrix was created. Two main clusters were found. The Economically and Socially Challenging group (Venezuela and Portugal) and the Western Europe group (France and Spain). Brazil was situated closer to the Venezuelan and Portugal cluster than was the Western Europe group. The common denominator in the Economically and Socially Challenging group can be the economic and social problems that both of these countries struggle against. It was reasonable that Brazil was closer to this cluster, given its similarities to both countries (in geographical and cultural terms). More explanations for these clusters were presented in the discussion. Finally, some recommendations and limitations are also presented and more research in this field is suggested as well.

Keywords

risk perception, social psychology, latin countries, Venezuela.

RESUMEN

El presente estudio presenta la media de los juicios de magnitud del riesgo expresadas por los adultos venezolanos que viven en las dos principales ciudades de este país: Caracas y Maracaibo, en 91 actividades, sustancias y tecnologías. Estos juicios se compararon metódicamente con los resultados de otras muestras de estudios anteriores, específicamente con otros cuatro países de raíz Latina: Francia, España, Brasil y Portugal. El objetivo del presente estudio fue estructurar las diferencias en la percepción de riesgo entre los países antes mencionados y Venezuela utilizando análisis de conglomerados. Se creó una matriz de 5 países x 91 afirmaciones. Se encontraron dos clusters principales: El grupo económica y socialmente desafiante (Venezuela y Portugal) y el grupo de Europa Occidental (Francia y España). Brasil se encuentra más cerca de la agrupación venezolana, Portugal se asignó al grupo de Europa Occidental. El común denominador en el grupo económica y socialmente desafiante pueden ser los problemas económicos y sociales de estos dos países en la coyuntura. Es razonable que Brasil esté más cerca a este grupo

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debido a sus similitudes de ambos países (geográfica y culturalmente). Más explicaciones para estos clusters se presentan en la discusión. Por último, se presentan algunas recomendaciones y limitaciones, y se sugieren campos de investigación.

Palabras clave

percepción del riesgo, psicología social, países latinos, Venezuela.

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Introduction

Earlier studies in societal risk perception

The aim of this study was to present some recent data on risk perception in Venezuela and compare it to an international database that already exists: four Latin countries namely Spain, France, Brazil, and Portugal (see Chauvin, Macri & Mullet, 2007).

Discrepancies and even conflicts can happen between people when assessing the societal risk of facts or things, in other words, they can differ when assessing which things are more dangerous and which ones are less, given to their different beliefs (Slovic, 1987).

Societal risk perception studies have been realized in multiples countries in Africa (Ahmed, Macri & Mullet, 2006; Koné & Mullet, 1994), Asia (Neto & Mullet, 2001), in Europe (Bouyer, Bagdassarian, Chaabane & Mullet, 2001; Chauvin, Hermand & Mullet, 2007; Muñoz Sastres, Gatelier, Portell, Neto & Mullet, 2006; Neto and Mullet, 2000), Latin America (e.g., Nyland, 1993), and in Oceania (Finucane & Maybery, 1996; Rohrman, 1994). In these studies, participants rated the overall severity of hazards (for example: weapons, drugs, ways of transportation, pesticides) on scales ranging from 0 (not at all risky) to 100 (extremely risky). Multiple cross-country comparisons have been possible given that most of these studies used

questionnaires that were very alike the one used by Slovic, Fischhoff and Lichtenstein (1985) (see Chauvin, Hermand & Mullet, 2007a).

Previous studies have shown that risk ratings can vary a lot from one country to another. For example, the risk evaluation for the item "Nuclear Power" was rated with 31 out of 100 which means not a very high risk in a Hungarian sample, 62 in an Italian sample and with an 89 in a Greek sample (see Chauvin, Macri & Mullet, 2007a). These studies also have shown that correlations between risk ratings could also be different between countries (Chauvin et al., 2007).

Finally, no study exploring the societal risk perception by laypersons in Venezuela has been done before. This study was aimed to find the proximity regarding the societal risk perception between Venezuela and four other Latin countries, namely: France, Spain, Brazil, and Portugal.

The Bolivarian Republic of Venezuela

The Bolivarian Republic of Venezuela is in the northern coast of South America. It is a federal presidential republic. Caracas is its capital. Its official language is Spanish. Venezuelans daily lives are affected given the financial crisis that suffers the country, the bad management, the repeated devaluations, and the corruption. Venezuela has one of the highest criminality levels in the world and its economy is very unstable (Transparency International, 2012).

Regarding the risk perception in Venezuela, today freedom of speech is not completely guaranteed in the country. For example, a broadcasting station was closed in 2007, given that the government did not agree with the content of transmissions considered as opposing their political ideals.

In Venezuela, criminal and violent events are not always covered by the media. The police have the right to stop the manifestations (even if it is a pacific one), and frequently they used tear gas. As a result, items like national defense,

police work, riot gas, crime and handguns should receive a very high rating.

Method

Participants

The sample consisted of 100 adults living in Venezuela (42 males and 58 females), aged 17-64 years ($M = 38.19$; $SD = 13.36$). 5 participants were 17 to 20 years old, 35 were 21 to 30 years old, 15 were 31 to 40 years old, 22 were 41 to 50 years old, 17 were 51 to 60 years old, and 6 were older than 60 years old. Three participants had a primary educational level, 24 received a high school degree, 65 had a college degree, and 8 had a graduate degree. As we were aware of the risks associated with snowball sampling, two snowballs were constituted, namely: 46% were recruited in Caracas and 54% in Maracaibo. All participants were autochthonous.

Material

The material consisted of a list of 91 substances, activities, and technologies adapted from the study of Slovic et al. (1985), which had been previously used by Neto and Mullet (2000) on a Portuguese sample. A scale rating from 0 to 100 graduated in tens appeared opposite to each item. The decision to use the list used by Slovic et al. (1985) was primarily due to the need to compare our findings with previously established data. As the first author's mother tongue was Spanish and her father's first language was Portuguese, she was perfectly fluent in both languages, which made her capable of translating the items (from Portuguese to Spanish). In addition, three people having a superior education degree (graduate) and deep grammatical knowledge reviewed the scale before its administration, so any possible translation ambiguity could be detected on time.

Procedure

As in Slovic et al. (1985), participants were asked to rate the degree of risk for each item by placing an X in the appropriated space on a 0 to 100 points rating scale. As in the Slovic et al. (1985) study, subjects were told to rate only the risk in Venezuela. The language used was Spanish. The administering took place from February to April 2012.

Results

Structuring the differences / Constituting a Similarity Matrix

The present study aimed to structure the differences in risk perception between a Venezuelan sample and a Latin countries data: Portugal (Neto and Mullet, 2000); Brasil (Nyland, 1993); Spain (Muñoz Sastre et al., 2006) and France (Chauvin, Hermand & Mullet, 2007) using cluster analysis. The total number of hazards are listed in Table 1. As a result, a 91 x 5 data matrix was created (91 risk items x 5 Latin-American countries that were in the database). Ninety-one hazards were maintained, since they were answered in all of the Latin countries present in the current study. Columns 2 and 3 show the mean ratings and the standard deviation computed over the Venezuelan sample for each hazard.

Table 1
Means ratings and standard deviations from the Venezuela sample on the 91 items

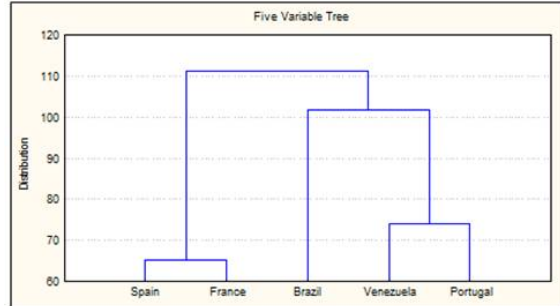
Item	M	SD
1 One factor	31	28.8
2 Large home appliances	37	28.0
3 Small home appliances	37	25.1
4 Micro-wave	38	24.0
5 Electric laminator	39	28.4
6 Hair dryer	34	23.8
7 Television	37	25.7
8 Cassette	37	20.6
9 One-half office the nervous system	45	32.2
10 Nuclear weapons	44	39.6
11 National identity	43	32.4
12 Welfare	46	33.4
13 Religion	30	23.2
14 Miscegenation	41	24.7
15 Motor vehicle	36	25.6
16 Fringe	38	29.5
17 Genetic mutation	41	35.1
18 Supermarket airplanes	42	34.8
19 Job	43	34.3
20 Commercial aviation	44	30.3
21 Accidents	39	28.2
22 Violence	39	25.5
23 Pregnancy (both labor)	44	26.4
24 Open-heart surgery	44	24.4
25 Overall surgery	45	24.0
26 Radioactivity	45	25.1
27 X-ray	38	23.3
28 Alcoholic drinks	33	25.4
29 Caffeine	36	23.3
30 Water fluoridation	32	25.3
31 Food coloring	36	26.1
32 Insulin	39	26.0
33 Sodium Nitrate	39	24.1
34 Food preservatives	33	23.8
35 Food irradiation	35	26
36 Synthetic around the Earth	39	30.6
37 Space exploration	37	32.0
38 Laser eye	37	28.6
39 Silos	47	33.0
40 Pestic intervention	45	28.6
41 Fighting drugs	35	31.2
42 Chlorine eye lights	36	28.4
43 Cosmetics	23	24.7
44 Fluorescent lights	27	26.0
45 Hair dye products	27	26.2
46 Chlorine disinfectants	41	25.8
47 Genetic engineering	39	29.8
48 Nuclear liquid gas	36	28.1
49 Smoking	21	26.2
50 Herdicide	39	26.0
51 Herbicide	36	24.7
52 DDT (Dichlorodiphenyl dimethyl ether)	40	24.2
53 Pesticide	38	33.7
54 Aspartame	47	35.5
55 Marijuana	36	28.2
56 Heroin	36	21.2
57 Lactose	20	32.7
58 Amphetamine	37	32.1
59 Barbiturate	47	33.0
60 Dexamethasone	34	32.1
61 Morphine	43	29.3
62 Chloroform	47	28.9
63 Valium	31	28.5
64 Amphetamine	39	24.4
65 Drug prescriptions	38	28.8
66 Benzoin	40	30.6
67 Benzoin	30	29.6
68 Benzoin	40	31.6
69 Football	37	23.1
70 Baseball	35	24.2
71 Juggling	21	26.1
72 Juggling	29	32.2
73 Consumption of wild mushrooms	38	33.4
74 International boat racing	39	30.3
75 Re-laccosure	34	32.2
76 Soda dieting	39	26.4
77 Hairdressing	37	29.3
78 Sun bath	32	24.4
79 Sun bath	32	24.4
80 Food irradiation	38	25.3
81 Thermal plants	38	28.9
82 Hydroelectric plants	37	30.3
83 Non-nuclear plants	31	30.1
84 Non-nuclear plants	31	28.7
85 Nuclear plants	46	32.7
86 Dynamite	46	18.4
87 Dynamite	37	31.8
88 Dynamite	34	28.4
89 Dynamite	33	27.9
90 Dynamite	35	32.8
91 Encapsulation	36	32.0

Source: own work

Two clusters solution

A cluster analysis was computed on the matrix. The results are shown in Figure 1 a main cluster composed of Venezuela and Portugal was found. Brazil was situated closer to the Venezuelan and Portugal cluster. Another cluster formed by France and Spain was also established and was situated further away from the Venezuelan and Portugal cluster. It can be appreciated in Figure 1.

Figure 1
Results of the clusters analyses performed on the raw data of the five countries.



Source: own work

Venezuela and Portugal formed a cluster that was called the Economically and Socially Challenging group (ESC). The mean rating value observed on the set of common 91 hazards was about 46 (see Table 2). This value was slightly under the middle score of the scale.

Table 2
Descriptive analyses for the different sampled countries

Country	M	SD	Minimum	Maximum	Clusters	M	SD
Portugal	43	16.7	14	82	Economical and Social Challenging Group (ESC)	47	21.08
Venezuela	44	16.9	16	87			
Spain	45	20.56	10	97	Western Europe (WE)	46.3	17.08
France	44	20.31	12	96			
Brazil	46.2	20.24	10	91			

Source: own work

Portugal and Venezuela are geographically far away, but they are culturally closer given their migration connexions; in fact, in the 20th century, Portugal begun to be part of the migratory movements from Europe to the American Continent. The District of Funchal (Portugal's Autonomous Region of Madeira) presented an important amount of citizen departures, especially in the 1950s. The principal destination was Venezuela; in other words, 70% of the people that emigrated from Funchal between 1965 and 1978 went to Venezuela (Alves, 2003; Marques, 2008). However, between 2004 and 2005 there was an important increase of Venezuelan citizens in the Madeira Island. This was a group of former emigrants that returned to their birth land and

also a group of Portuguese descendents that were immigrating to the island given the family connexions (Fonseca, 2007).

Venezuela actually lives a very unstable economical and social situation. Several broadcasting stations have been closed and the local media is highly controlled. Also, Venezuela is a very violent country, where violent assaults and kidnappings happen every day. Consequently, Venezuelan participants showed that staying in the country was considered more dangerous than leaving. That is why the item *Emigration* had the lowest rate (16) of the whole scale. Crime had the highest rating on the scale with 87.

The transmission of information policy in Portugal includes broadcasting the accidents that happens inside and outside the country. Nevertheless, the main focus of television are the accidents that happens inside the country (Kpanake, Chauvin, Macri & Mullet, 2008). It is true that Portugal had been living an economical crisis that is affecting the employment situation inside the country. It will be interesting to research in future studies how unemployment can affect the risk perception or, in other words, if it can motivate people to emigrate seeing the risks of foreign countries as less dangerous than the risks that are happening inside the current country. *Swimming* was the item with the lowest rating (14) for this country, and the highest rating on the scale was of 82 for *heroine*.

Finally, Brazil is geographically closer to Venezuela. Both countries are in South America and they are geographically neighbours. Even though they do not share the same language, they share a social reality which includes a high rate of crime and violence.

The Brazilian media centers mostly their attention on the accidents that happen inside the country (Nayland, 1993). The fact that Brazil was situated closer to this cluster was not a surprise, given the fact that Brazil and Portugal share the same language and both countries had a cultural bond given their history during the colonization period, and Brazil is physically close to Venezuela. *Fluorescent lights* had the lowest (10) rating and *nuclear weapons* had the

highest (91). Despite these common points, the linear correlation between Brazil and the ESC group was about 0.70 ($p < 0.05$) (see Table 3) which means that the ESC group and Brazil seem to share similar main concerns, even though not to the same extent.

Spain and France formed the second cluster that was called the Western Europe group (WE). These two countries are geographically and culturally close. Their mean rating value for the common set of 91 hazards was about 47 (see Table 2), which is only one point higher than the ESC group. In these countries accidents occurring inside and outside the country have always been reported (Kpanake et al., 2008). The linear correlation between this cluster and the ESC group was about 0.87 ($p < 0.05$) (see Table 3) which means that this cluster and the ESC one essentially differ in the overall level of perceived risk, and practically not in the ranking of hazards. This similitude between the countries seems reasonable given that these four countries share a common western cultural way of life, and Portugal (a Western European country) is present in the ESC group, which can contribute to the high linear correlation ($r = 0.87$, $p < 0.05$) between these two clusters.

Table 3
Linear correlations between the common items computed at the cluster level

Clusters	ESC	WE	Brazil
Economical and Socially Challenging group (ESC)	1	0.87*	0.70*
Western Europe group (WE)	0.87*	1	0.67*
Brazil	0.70*	0.67*	1

Note. Significant correlations were at $p < 0.05$.
Source: own work

For both countries the lowest rating was given to the item *jogging* (Spain 10; France 12), and

the highest rating was given to the item *nuclear weapons* (Spain 97; France 96).

Discussion

The principal aim of this study was to explore the societal risk perception by laypersons in Venezuela and to find their proximity, regarding this issue, from other four Latin countries, namely: France, Spain, Brazil, and Portugal.

Venezuela formed a cluster with Portugal, which was surprising given their geographical distance, but since they are countries that have been struggling economically for the past decades, both are potent developing countries, and currently are fighting with a high level of unemployment. Consequently, a lot of young people are emigrating from these countries hoping to find a better way of life.

In the early 1990s the Venezuelan emigration started and was characterized mostly by job searching, studying, or living outside the country. The main reasons to emigrate for the population are: personal development (academically and in the job field); searching for safety and social stability; getting away from violence and social conflicts that currently predominate in the country; increasing their income. Thus, the main reasons are from a socioeconomic order (Mateo & Ledezma, 2006). This easily explains why the Venezuelan sample rated crime with the highest score and emigration with the lowest.

Given that the media inside the country is not completely free, it seems congruent with the idea of Heath (1984) which says that the more the media reports crimes in other countries (thus reports less of what is happening in inside the country) the safer readers will feel in their own environment. Furthermore, Brazil was closer to the ESC group, and Spain and France formed another cluster which was situated further away from the ESC group. This seems reasonable given that Brazil shares a common history (colonization, traditions, language) with Portugal, but it also

shares a common social reality and geographical proximity with Venezuela.

Also, Spain and France formed a cluster named Western Europe group. In these two countries accidents have been always been systematically reported (Kpanake et al., 2008). Thus, they share a geographical proximity and a common way of broadcasting accidents. It seems reasonable that the correlations between these two groups (Economically and Socially Challenging group and Western Europe group) had been the highest ($r = 0.87$, $p < 0.05$), followed by the linear correlation between the ESC and Brazil ($r = 0.70$, $p < 0.05$) which also seems reasonable, given the already mentioned common points between this country and Venezuela and Portugal. Finally, the linear correlation between Brazil and the Western Europe group was the lowest in the present study ($r = 0.67$, $p < 0.05$), in other words, Brazil and Spain and France did not completely share the same main concerns, even though their mean ratings were very close (Brazil $M = 46.2$; Western Europe group $M = 46.3$).

Limitations

Our size sample is surely one limitation, so generalizations must be done with caution. Also, the fact that the data of the different countries was collected in different years can be questionable. Is there a temporal stability in the societal risk perception? Studies must be done in this direction.

Future directions

Venezuelan people suggest the inclusion of the following items: cableway, subway, highways, elevators, escalators, and plastic surgery. The cableway is understandable, given that they are two big cableways in the country (one in Caracas and the other in Merida), thus Venezuelan people are use to this concept and its risks. The subway in Caracas has open electric rails, in other words, without any physical barrier that prevent people from falling to the rails and killing

themselves. There have been cases of suicides and mortal accidents (by electrocution) given the accessibility to the electric rails. Highways, elevators, and escalators can be viewed as risky elements by the Venezuelan people given that Venezuela is a poor country and does not always perform maintenance on this kind of installation, thereby increasing its risk. Finally, plastic surgeries are very common in Venezuela and there have been cases of medical crimes, with people practicing this type of surgeries without being actual medical doctors. The results have been nefarious.

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Notes

- * Research article.