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► **To cite this version:**

Elisabet Roca Bosch, Samuel Rufat, Elsa Giffard, Victor Santoni. Conclusions of the Fifth European Conference on Risk Perception, Behaviour, Management and Response - ECRP 2024. 2024. hal-04740564

HAL Id: hal-04740564

<https://hal.science/hal-04740564v1>

Submitted on 16 Oct 2024

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Conclusions of the Fifth European Conference on Risk Perception, Behaviour, Management and Response ECRP 2024

17th–19th June 2024
Barcelona

01 OBJECTIVES

“
A key challenge lies in understanding why individuals fail to adopt adaptive behaviours despite the increasing availability of hazard information.
”

This conference addresses a **critical gap** in the field of **risk perception and adaptive behaviour**. The current landscape suffers from **fragmentation**, with numerous independent case studies **lacking a unified theoretical framework**. This hinders **comparability** and **generalizability** of findings across various contexts and scales, thereby **limiting the effectiveness of policy** and risk management recommendations.

The prevalent reliance on socio-psychological theories and methodological individualism within past research designs restricts the focus on **broader socioecological processes** and the crucial **role of socio-cultural context** in shaping risk perception. A more diverse theoretical foundation is necessary to facilitate cross-validation of case studies and a deeper understanding of risk across different contexts.



ECRP 5TH EDITION: BARCELONA

Barcelona provided participants with a fresh perspective on **coastal urban risks**, setting the scene for an in-depth analysis of **flooding risk perception** in an urban area characterised by **intense urbanisation and population density exposed to hazards, high-level vulnerability to climate change effects** (i.e. compound events derived from coastal risks: erosion, storm surges, sea level rise, sea and river floodings...), and an **economy dependent on beach tourism**.

Some of the emerging themes included challenges deriving from multi-hazards events, emergency behaviour, disaster risk reduction, individual vs. collective perception, research dissemination and impact, among others.

The keynotes and panels were complemented by two **workshops**:

1. **Adapting a flood perception questionnaire to other climatic risks (e.g. coastal risks).**
2. **World Café**

Theme a. Approaches to assess social barriers to relocating residents

Theme b. Self-captivity in a high-risk environment

and three **field trips**:

1. **Barcelona Green Axis visit**
2. **Besos River transformation project**
3. **Rainwater reservoir of Plaça d'Espanya**

It is to note that the conference's integration of **region-specific excursions** is a particularly valuable aspect. These tours, such as the exploration of earthquake preparedness measures in Bucharest last year, and this year's focus on flooding management in a densely populated coastal city, provide attendees with a **deeper understanding of the local context** surrounding the conference themes.



Barcelona Green Axis visit (field trip)



Besos River transformation project (field trip)



World Café: "Approaches to assess social barriers to relocating residents" (workshop)



Rainwater reservoir of Plaça d'Espanya (field trip)



5th ECRP attendants

BARCELONA ACTION POINTS

The conference reaffirmed the value of **multi-method research approaches for understanding causal relationships**. Participants advocated for further exploration of these methods, such as **agent-based modelling (ABM)**. ABM simulations and proposed social simulations were seen as valuable tools for analysing the impact of policies on emergency management infrastructure design. Integrated models, especially ABM, were praised for their ability to comprehensively capture risk and risk management across space and time.

In addition, integration of **text-based analysis and machine learning/AI-based approaches** have a strong potential to complement the time-intensive work of interviews and observations - without replacing them.

The conference discussion highlighted a **potential overemphasis on individual behaviour** in disaster research. Attendees raised concerns about **neglecting collective action** and the interplay between individual and collective perceptions. In addition, discovery of trajectories for different contexts based on individual, social, vulnerabilities, culture and institutional variables seem to be a very important area to have a picture of the whole situation.

Calls were made for more research on:

- **Mechanisms driving collective coping behaviours and the underlying psychological constructs.** The role of social pressure.
- **Systemic approaches, such as cultural theories,** to complement the dominance of modelling and survey methods.
- **Differences between individual and institutional coping mechanisms,** including exploring barriers to adopting preparedness measures.

A gap in research on emergency behaviour has been highlighted. While a presentation on the topic sparked interest, the overall focus was not approaching this topic. An increased exploration of emergency behaviour is suggested, **acknowledging the limitations of survey-based research in capturing true responses during emergencies.** The inclusion of **psychology and social sciences** was seen as a positive step, bringing **individual and psychological** factors into consideration alongside **structural** and **organizational** aspects of risk management.

The discussion emphasized the inherent **unpredictability of human behaviour**. An interesting idea could be to analyse this **"missing part"** - the unexplained variance in human behaviour models. It has been suggested exploring societal, institutional, and contextual factors, alongside individual characteristics, to understand this aspect.

Uncertainty, particularly in individual and collective decision-making, was highlighted as another key area requiring further research, with a focus on identifying potential weaknesses in current methodological approaches.

More sophisticated statistical models should be paired with **equally robust quality data.**

Other risk perception researchers showed interest and agreed there is promise in further use of **Public Participation Geographic Information System (PP GIS)** in the field.

The conference emphasized the importance of **cross-country research with strong theoretical grounding** to understand the link between risk perception and adaptation behavior. Collaborative efforts using various research designs, including **longitudinal, cross-sectional, experimental, and cross-national approaches**, were called for to explore cultural influences. A shift towards a more **"transdisciplinary"** approach that transcends individual disciplines and fosters creation of entirely new knowledge was advocated. **The conference's diversity across fields like geography, economics, and psychology was seen as a springboard for such collaborations,** potentially broadening the research focus to encompass a wider range of environmental issues.

The conference identified a **need for improved communication of scientific findings for use by the public, institutions, and policymakers.** While research quality was high, attendees emphasized the importance of **practical impact.** Discussions focused on how research results can be translated into **real-world action for disaster risk reduction and climate change adaptation.** A suggestion was made to explore this topic further in a future webinar or conference session.

SCIENTIFIC DEBATES

Comparability of hazards

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*In our case study (i.e. adapting flood perception questionnaire to coastal risks), this comparison has been difficult because of the **intricate definition** of “coastal hazards” – is it a single phenomenon, is it multiple separate hazards, etc. – compared to earthquakes.*

The response to this was to have a small argument and focus on coastal flooding because it was a cognitively simple hazard that people experience and so can be seen to be a tangible risk (unlike coastal erosion or sea-level rise). There was a very different time span of the “hazard” and the process that people need to react to and prepare is very different. Therefore, there was some discussion about what to focus upon in terms of warning, and behaviour, and if certain things are even truly comparable across the different studies. For example, the TPB questions on “stop, drop, and wait” didn’t seem relevant and many of the emergency behaviours would have to be different. Though, the same question/concepts could be used if we found a suitably comparable behaviour that is at least conceptually similar.

Standardized theory

*While numerous, overlapping theories offer valuable insights, perhaps **a single, more comprehensive theory** could capture the essence of these drivers.*

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Despite some divergence in risk perception approaches presented recently, wouldn't it be beneficial to collaborate on a standardized framework? This framework could acknowledge context-specific variations while providing a unified perspective on individual and above-individual risk perception.

05

PROPOSALS

#1 THE RESEARCHER'S GUIDE TO RISK PERCEPTION: A TOOLKIT OF VALIDATED QUESTIONS

Moving beyond single-question refinement, we propose a **researcher toolkit for risk perception, adaptive behaviour, and social vulnerability**. This toolkit will **curate pre-validated questions categorized by the relevant theoretical constructs from established research**. Beyond the questions themselves, the toolkit will include **detailed information on the methodology used to assess their reliability and validity**, enabling researchers to evaluate the robustness of their chosen measures. Designed as a database/method paper for publication in a specialized journal, this resource will offer a central repository of validated questions across various risk perception concepts.

#2 ECRP KNOWLEDGE HUB

To facilitate collaboration and knowledge sharing, a **central resource** could be created for ECRP's members. This could be a **group webpage, a shared document, a newsletter, an academic repository or another platform** that allows to easily access and exchange information about **ongoing projects, publications, and events**. This platform could be used to periodically disseminate updates (e.g., every 2-3 months) on researchers' work.

#3 TRAINING & SUMMER SCHOOLS

To spark interdisciplinary research, we propose **training sessions** (all levels, **emphasis on early careers**) on diverse methodologies used by our researchers, followed by **summer schools for PhD/postdocs for deeper dives**. This equips researchers and fosters collaboration across disciplines.

Workshops

#4 FROM INTENTIONS TO ACTION: MEASURING REAL-WORLD BEHAVIOURAL SHIFTS

While surveys on self-reported intentions and behaviours offer valuable insights, they can't provide a complete picture of risk perception. To gain a deeper understanding, we need to **move beyond stated preferences and capture actual changes in behaviour and attitudes**. A dedicated workshop at a future ECRP could address this gap by exploring alternative methodologies and indicators. These methods should go beyond stated preferences and **track real-world choices people make (revealed preferences)**. **Longitudinal studies** would be particularly useful, allowing researchers to track changes over time and strengthen the validity of their findings.

#5 BEYOND THE QUESTION: EXPLORING THE LINK BETWEEN QUESTIONNAIRE DESIGN AND DATA ANALYSIS

Building on the strong interest in data analysis methods, a future workshop could explore **the connections between questionnaire design and the analytical approaches used**. This workshop could complement the existing questionnaire workshop by delving deeper into **how question formulation directly impacts the choice of analysis methods**. For example, participants could explore how slightly rephrasing a question might influence whether quantitative or qualitative analysis would be most appropriate. This combined workshop format could be a valuable exercise in bridging the gap between questionnaire design and data analysis.

#6 JOINT EFFORTS, BIG IDEAS: A WORKSHOP ON COLLABORATIVE WRITING & BRAINSTORMING

Collaborative writing efforts could be explored in a workshop, such as crafting a position paper or a joint project proposal (e.g., Cost Action). There could also be **brainstorming of innovative concepts for integrated models or applications** relevant to future case studies and project proposals.

PRESENTATIONS

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Carl C. Anderson, *Using public participation GIS (PPGIS) to advance risk perception and environmental justice research*, Leibniz University Hannover, Germany.

Paola Fontanella Pisa, Stefan Schneiderbauer, *Local knowledge-based considerations on risk perception in a Japanese mountain community: Tadami UNESCO Biosphere Reserve*, United Nations University, Eurac Research, Italy.

Andra-Cosmina Albulescu, *Natural risk perception in Romania: beginnings, progress, and perspectives*, Alexandru Ioan Cuza University of Iasi, Romania.

Yolanda Pérez Albert, Mahdi Gheitasi, *Evaluating the impact of petrochemical clusters on technological risk perceptions in Iran and Spain*, University Rovira i Virgili, Spain.

Roca, E. Villares, M. Badia, M. *NBS to manage the water cycle. The Natwip project*. Universitat Politècnica de Catalunya, Spain.

Pavel Raška, *Public perceptions and unintended effects of the extensive 'nature-based' framing for planning of hydrometeorological risk reduction measures*, J. E. Purkyně University, Czechia.

Ante Ivčević, Maria Snoussi, *Climate risk perception assessment and coastal planning in the Tangier-Tetouan-Al Hoceima region in Morocco*, Aix-Marseille University, France, Mohammed V University in Rabat, Morocco.

Badia, M. Giffard, E. Roca, E. Villares, M. *Public perceptions of coastal adaptation strategies in the Catalan Coast*. Universitat Politècnica de Catalunya, Spain.

Annabelle Moatty, *Risk perception and obstacles facing postcyclone recovery in Saint-Martin (Caribbean)*, CNRS Paris Panthéon Sorbonne University, France.

Mar Moure, *High bar for change: uncertainty source preferences in climate adaptation choices*, University of Copenhagen, Denmark.

Sungju Han, *Unpacking the sense of place: risk perception, and adaptive behaviour link through a Place-based Risk Appraisal Model*, UFZ – Helmholtz Centre for Environmental Research, Germany.

Mohamed Mastere, *Understanding Urban Risk Perceptions and Preparedness of Natural Hazards in Morocco*, Mohammed V University of Rabat, Morocco.

Nuray Karanci, Dogulu C., Erol Y. *From Risk Perception to Preparedness: Empowering Through Education with a Focus on Individual, Social, and Agency factors*, TOBB University of Economics and Technology, Türkiye.

Christine Große, *Mis- and Disinformation: Challenging Topics for Risk Communication*, Luleå University of Technology, Sweden.

Ricardo Garcia Mira, *Risk Perception, Community Resilience and Sustainable Lifestyles*, University of A Coruña, Spain

Tatiana Filatova, *Cross-national patterns in household climate change adaptation*, Delft University of Technology, The Netherlands.

Louna Le Bouquin, *Impacts of flooding and climate change on vulnerability and health in Paris (France)*, Paris Nanterre University, France.

Silvia Torresan, *Toward the implementation of a multi-risk framework to assess climate change scenarios and support disaster risk management pathways in the Veneto region (Italy)*, Euro-Mediterranean Centre on Climate Change, Italy.

Samuel Rufat, *Bridging risk perception, social vulnerability and emergency behaviour in Paris (France)*, CY Cergy Paris University, France

Paul Hudson, *Testing the theories of planned behaviour against risk perception and emergency behaviour*, University of York, UK.

Stéphane Cartier, *Perceptions of resilience during disasters*, the LebQuakeChat tweets in Lebanon, CNRS, Grenoble Alpes University, France.

Lisa Köhler, *The relationship between multi-hazard experience and single-hazard preparedness*, University of Potsdam, Germany.

Eric Enderlin, *Social determinants of risk perception, emergency behaviour and evacuation in Paris (France)*, CY Cergy Paris University, France.

Victor Santoni, *Simulating evacuation decision during a flood from survey data in Paris (France)*, CY Cergy Paris University, France.

Iuliana Armas, *Risk perception and preparedness behaviour: Examining the nexus in Bucharest's seismic context*, University of Bucharest, Romania.

David Sauri, *From hazard to resource? Urban drainage in Barcelona during the last century*, Autonomous University of Barcelona, Spain. (Keynote session)



[To cite this document:](#) **Roca, E., Rufat, S., Giffard, E., Santoni, V.** (2024) *Conclusions of the Fifth European Conference on Risk Perception, Behaviour, Management and Response - ECRP 2024*. ANR-20-CE03-0009. Universitat Politècnica de Catalunya, BarcelonaTech.