



**Enhancing the efficiency of alerting systems through personalized,
culturally sensitive multi-channel communication**

Project No. 261699

Deliverable D 2.4

“Report on socio-cultural clusters in the participating countries”

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1. INTRODUCTION: ADDRESSING SOCIO-CULTURAL DIVERSITY IN CRISIS COMMUNICATION

In many European countries we observe a growing ethnic and cultural diversity owing to immigration but also to changes in value and belief systems of societies as a whole reflecting trends like individualization, the rise of reflexive modernization (Beck 1986, 1991) or globalisation. While this fragmentation has increasingly been addressed by political actors, the media and various academic disciplines, it still plays a rather marginal role in public crisis communication. When it comes to planning or evolving respective structures and processes, authorities tend to focus on problems regarding their own organizations (lack of training and resources, slow information chains, etc.), limitations of early-warning systems or technical obstacles in getting the information to the public in general (“last-mile problem”)¹.

However, the insight that not only conditions of the sender and the transmission process but also characteristics of the receiver are relevant for the success of risk and crisis communication in general, and of alerting in particular, is gaining ground. One indication of this trend could be the language used in the message of the alert. The Hungarian government, for example, has decided to publish crisis communication in the language of any ethnic minority in any region in which it accounts for 10% or more of the total population. In Germany, difficulties in rescue operations that are connected to the immigrant background of the persons in question have raised awareness among crisis management officials as well. Though not present on current agendas, target-group specific alerting has been recognized as an increasingly important matter and will be addressed in the near future.

Still, these selective references cannot conceal that there is still a long way to go. In most countries reviewed in this report the audience’s diversity is still not receiving the attention that it deserves or would be necessary or advisable. For example, Dutch crisis management authorities do not present alerting messages in different languages and advise tourists and immigrants with insufficient language skills to ask Dutchmen for a translation. This underestimation of the importance of adjusting crisis communication with regard to growing socio-cultural diversity may be partially attributed to the ambivalent picture this topic presents in the scientific crisis communication research. While the first studies looking for the influence of certain socio-demographic characteristics on issues like the perception of disasters, evacuation behaviour and other related aspects date back to the late 1970s², this topic has overall been of little interest in the (social) scientific literature³. What is more, the theoretical and methodological fundamentals of these studies have often been immature (LINDELL & PERRY 2004).

While some of these conceptual problems have been overcome and several more studies dealing with the diversity of the crisis communication audience have been published in recent years⁴

¹ See the Report on Semi-Structured Interviews with Risk-Communication Experts (deliverable 2.2 of this project).

² Perry 1979.

³ See Olofsson 2007, p. 147f.

⁴ I.e. Finucane et al. 2000; Lindell/Perry 2004; Poumadère et al. 2005; Falkheimer/Heide 2006; Olofsson et al. 2007; Martin et al. 2009; Egbelakin/Wilkinson 2010; Chester/Duncan 2010; Taylor-Clark et al. 2010; Park/Reisinger 2010; Gierlach et al. 2010; Gordon et al. 2010.

there are still two important limitations. First of all, the majority of the research consists of isolated case studies primarily focusing on a very small research area (often one community only). It is therefore hard to extract general lessons from these studies at all, let alone any which are suitable for disaster management authorities beyond the respective research areas. Equally responsible for the lack of applicability is the second problem, the absence of both a common theoretical framework and a methodologically sound framework. The first aspect leads us to the difficulties related to defining and conceptualizing issues like risk, disaster, modernity, nature and probably even more, which already gives an idea of the immense complexity in this research area.

The second aspect, which leads us to the main topic of this report, is the question of how to capture socio-cultural diversity in order to provide a methodologically sound tool for analysing different perceptions of and types of (non-)compliance in regard to crisis communication. Usually this diversity has been operationalized by using socio-demographic factors known to have an influence on the perception of risks/crises and/or the behaviour during crisis situations (age, gender, income, educational level etc.). However, this approach does not lead us to the whole truth as it is widely acknowledged in risk and crisis studies that cultural aspects (norms, values, beliefs) influence perception and behaviour as well. Accordingly, more recent studies include factors like trust in authorities, religion, individualistic vs. collectivistic values⁵ and many more.

These introductory notes show that the requirements for in-depth research on target-group specific crisis communication are very demanding: In addition to a coherent theory of how crisis communication works, a methodological approach is also required guaranteeing that the most relevant items of our examined countries in regard to crisis communication are included (here: Austria, France, Germany, Hungary, Italy, the Netherlands and Sweden). The question of how to move the current alerting systems toward more personalised and socially and culturally attuned systems is taken up by the Opti-Alert project. This report is devoted to the socio-cultural clusters relevant for alerting in the participating countries.

⁵ I.e. Viklund 2003; Chester 2010; Gierlach 2010.

1.1. Introduction to Data on Risk Perception

The perception of risks from disasters varies substantially between the countries examined in this project. This is made evident by Eurobarometer, an instrument that provides mostly quantitative data on public opinion in the European Union, on the one hand by a bi-annual “Standard” survey published in spring and autumn and, on the other hand, by additional “Special” issues⁶. By drawing on these and other sources, this section presents country differences in risk perception of those examined along with statistical facts on other issues that are relevant for successful crisis communication. The findings will be complemented, where appropriate, with results from our interviews conducted in this project with experts and survivors of disasters (see deliverable D 2.2 & D 2.3).

1.2. Risk Perception

A first valuable insight regarding the perception of disaster-related risks is provided by a Special Eurobarometer on attitudes towards the environment, which documents the ranking of environmental problems by the interviewees, including two common categories, man-made disasters and natural disasters. The results show that risks from the first category are perceived to be higher than those from the latter, a pattern that prevails in all our examined countries, though in some more pronounced than in others.

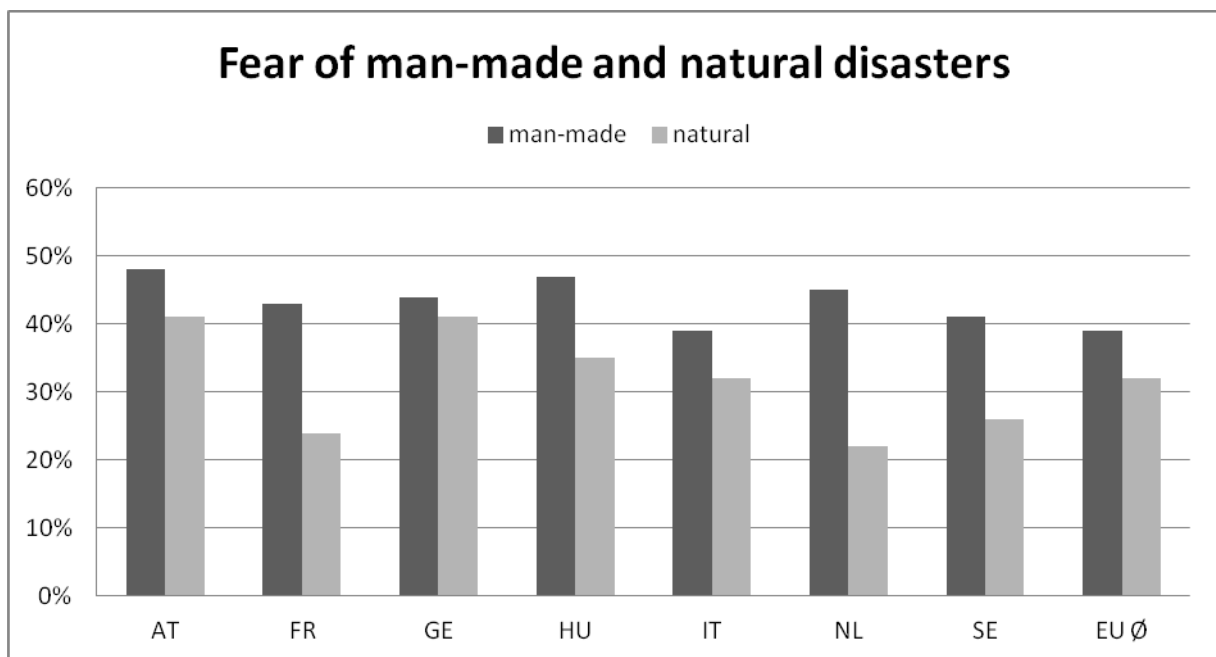
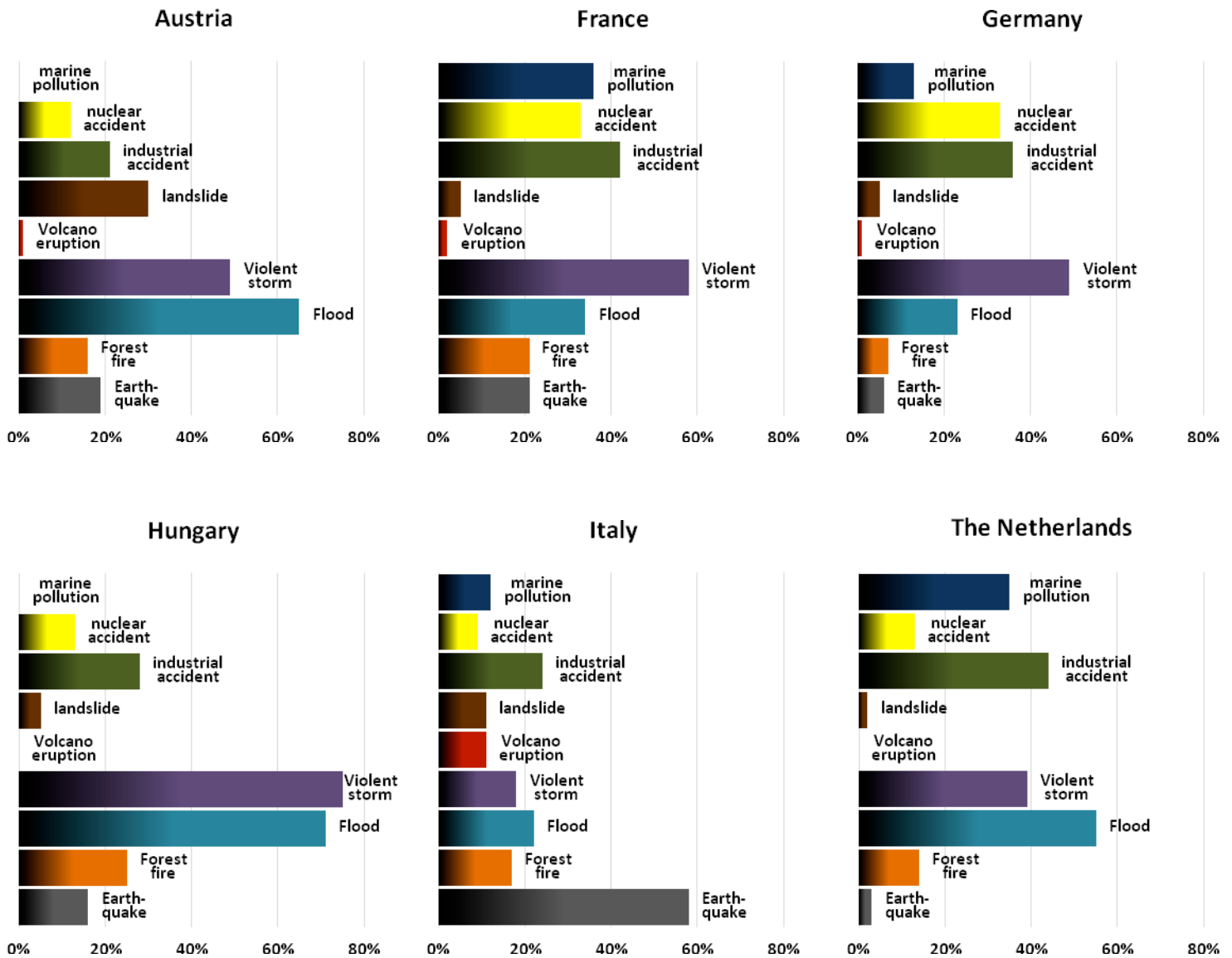


Figure 1: Question: “From the following list, please pick the five main environmental issues that you are worried about”. Source: data from the Special Eurobarometer on “Attitudes of European Citizens towards the environment” 2007, own illustration.

According to these numbers, citizens from all of these countries tend to worry more about risks from man-made rather than natural disasters. This phenomenon is particularly noticeable in France and the Netherlands, while Germans show the smallest difference in this regard.

⁶ http://ec.europa.eu/public_opinion/index_en.htm.

A Special Eurobarometer on civil protection offers further insights into the perception of various disasters. Interviewees were asked to choose specific disasters that they feel most at risk of. The results are illustrated below:



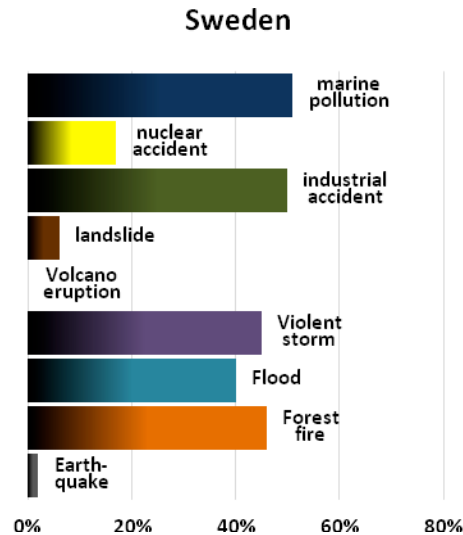


Figure 2: Answers to the question: “Which of the following natural or man-made disasters, if any, do you feel most at risk of in [COUNTRY NAME]” (10 choices⁷, max. 3 answers). Source: data from Special Eurobarometer on “Civil Protection” 2009, own illustration.

These figures not only tell us that risk perception varies considerably *within* one country according to different types of disasters, they also illustrate that people from different countries often have fundamentally different views of the level of risk posed by a specific disaster. One may even speak of a “disaster risk perception profile” for each country.

Especially Italy stands out in this regard, with its citizens being mostly afraid of earthquakes, while in many other countries violent storms and floods are major sources of concern. On the other hand, despite its vast coastline, a great majority is not especially worried about marine pollution, which stands in sharp contrast to most of the other countries with coastal areas. In addition to Italy, Sweden reveals a rather distinct picture with forest fires being one of the most feared disasters. Sweden also has the highest values in the categories marine pollution and industrial accidents. Countries like Germany and France show quite similar patterns, with worries centering around violent storms and industrial and nuclear accidents. All this information is potentially very valuable if a crisis communication strategy has to be tailored for a certain disaster situation. It could be advisable, for example, to emphasize in warning messages the serious threats posed by a disaster belonging to a category that does not have a prominent place in a certain country’s public risk perception.

Next to these figures illustrating the *relative* significance of different types of disasters, an interesting point is how many citizens are concerned about crises in *absolute* numbers. One indicator for this aspect can be found again in the Special Eurobarometer on Civil Protection that asked interviewees whether they have prepared themselves for a disaster. The following figure shows how many have taken actions such as preparing a first aid kit or buying a torch, and how many have never considered such preparations.

⁷ The additional category „Tsunami“ has been left out here as in no country more than 3 % chose this option.

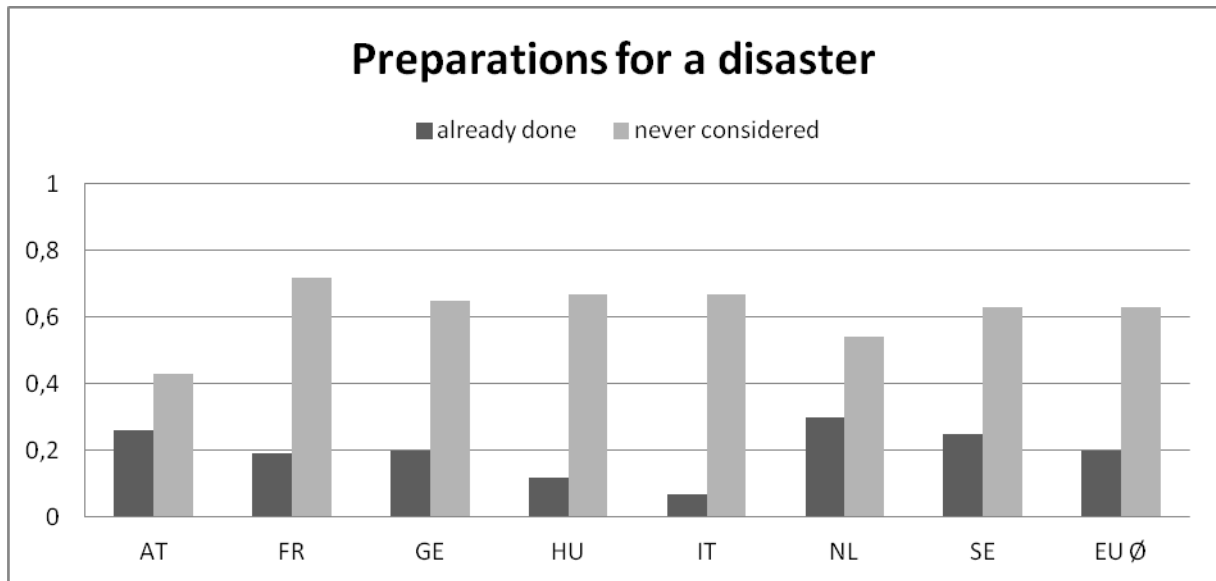


Figure 3: Answers to the question “Personally, have you already taken actions such as preparing a first aid kit or buying a torch, etc. to prepare yourself for a disaster such as flooding, forest fires or earthquake”? Data from Special Eurobarometer on Civil Protection 2009, own illustration.

According to these numbers, preparations for a disaster are the exception rather than the rule. Again, Italy is a prominent case with the lowest number of citizens that have taken action. By contrast, Dutch citizens seem to be most sensitive in regard to disasters as 1 out of 4 persons has done so. This is especially interesting insofar as the Dutch have been affected far less by disasters during the last decade than Italians or Hungarians⁸. This paradox is consistent with studies on disasters finding no link between disaster experiences on the one hand and risk perception on the other⁹. It is furthermore striking that in Austria the majority has at least considered respective measures while in most of the other countries examined here this is not a topic at all for roughly twothirds of the population. Still these numbers have to be treated with care as it is possible to be very worried about disasters but, at the same time, never consider preparations, e.g. due to fatalistic attitudes and the belief that nothing can be done to prevent damage anyway. Irrespective of this reservation, these results can be interesting for authorities that – like in the French case – plan to ascribe a more active role to the citizens in disaster situations, e.g. in terms of forwarding official crisis communication via private networks, a strategy that, of course, requires that the person doing so is safe her/himself.

1.3. Trust in authorities

For successful crisis communication **trust in authorities** is another important aspect. It is well known that if disaster management officials do not enjoy public confidence the probability of compliance with their risk management, e.g. evacuation orders or cues, is low¹⁰. The Standard Eurobarometer includes a question on the general trust in national governments, which varies substantially in the countries reviewed here:

⁸ See the United Nations Human Development Report 2010, p. 168.

⁹ I.e. Martin 2009.

¹⁰ I.e. Burton/Silver 2006.

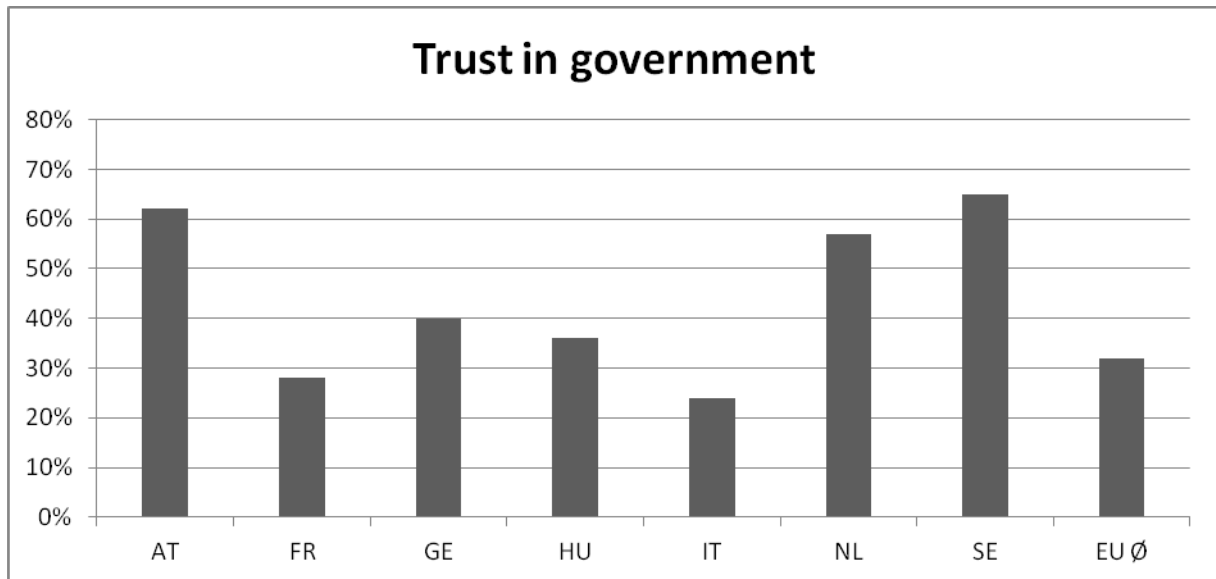


Figure 4: Trust in national government. Source: Eurobarometer 2011 (spring wave).

While the Swedish government enjoys general trust from 2 out of 3 citizens, governments in Italy and France especially are less fortunate regarding trust from the broad majority of their electorate.

These figures match the findings both from the biographic and expert-interviews conducted for this project. Especially interviewees from France and Italy who had been affected by a disaster did not put much trust in their authorities responsible for disaster management¹¹. French disaster management officials reported that public crisis communication is usually left to experts as politicians are not well-reputed. By contrast, when the Swedish government asked their citizens to get vaccinated during the swine-flu outbreak in 2009/10 over 60 % followed this appeal, revealing an exceptionally high trust in their government¹².

Another Special Eurobarometer provides even deeper insights in regard to trust in authorities as it asked interviewees to give separate opinions on local and regional authorities compared to the national government. This differentiation is important in the field of public crisis communication as this task is first of all the responsibility of local authorities, at least in the early stages of a disaster, and then dependant on the scope of a disaster and the distribution of competencies among public bodies. The figures indeed show significant differences among the examined countries:

¹¹ See the Report on individuals previously affected by crises, p. 24.

¹² See the Swedish report on semi-structured expert-interviews with risk communication experts, D 2.2, p. 18.

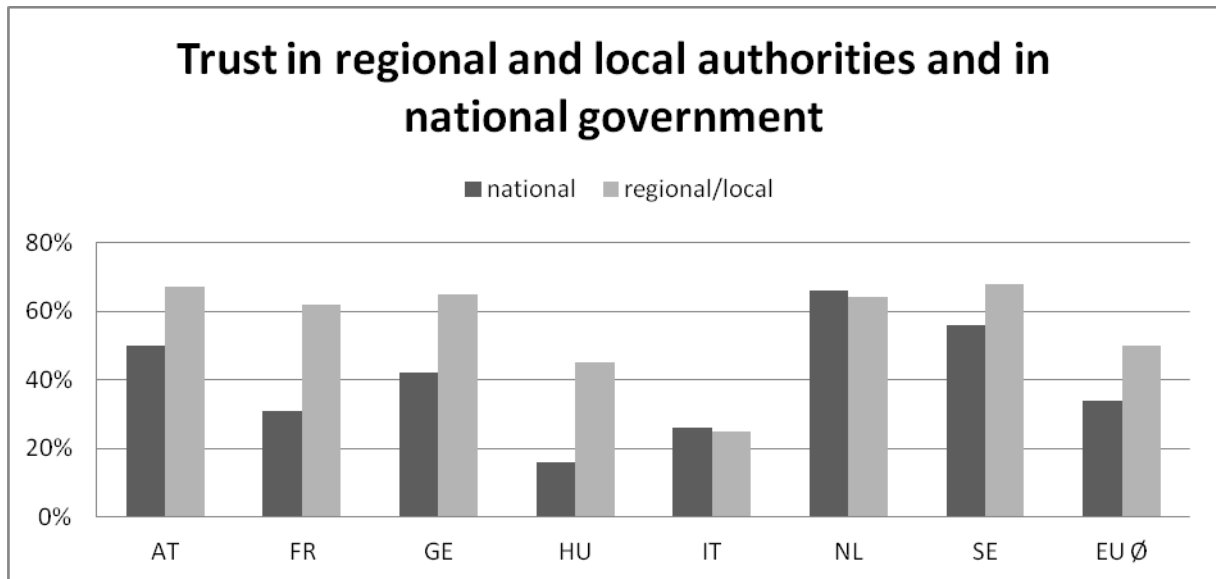


Figure 5: Trust in regional or local public authorities and in national government. Source: data from Special Eurobarometer on “The role and impact of local and regional authorities within the European Union” 2009, own illustration.

Again these results have important implications for successful crisis communication. As regional and local authorities enjoy a substantially higher trust in the majority of European countries, it may be advisable to choose actors at this administrative level for public communication in crisis situations. Only in Italy and the Netherlands is this distinction not of much importance as the trust in authorities from both levels is equally low in Italy or high in the Netherlands respectively.

A somewhat puzzling result is the low value of trust in national authorities in Germany compared to local authorities. German crisis management experts reported in our interviews that, in their experience, people in a crisis situation tend to look for information especially from institutions at national level, irrespective of the actual competencies that are often held by regional authorities¹³. This paradoxon will be addressed again in the following section.

1.4. Trust in alternative information sources

Next to crisis management authorities, other actors like media corporations and experts often play central roles in crisis communication – either as a transmitter of official messages or by providing additional information. The same goes for family members, friends and colleagues who are important not only in situations where mass media is not available or in use (e.g. during work, night-time or shopping) but also when it comes to interpreting information from other sources. As each of these actors may contribute or pose special challenges to official crisis communication – especially in countries with low trust in authorities - the question of which information source they prefer compared to others is relevant.

The Special Eurobarometer on Civil Protection asked interviewees to rate different sources in regard to the provision of background information on disasters. The following figure illustrates the trust these sources enjoy in this matter:

¹³ See the report on semi-structured interviews with risk communication experts, D 2.2, p. 29.

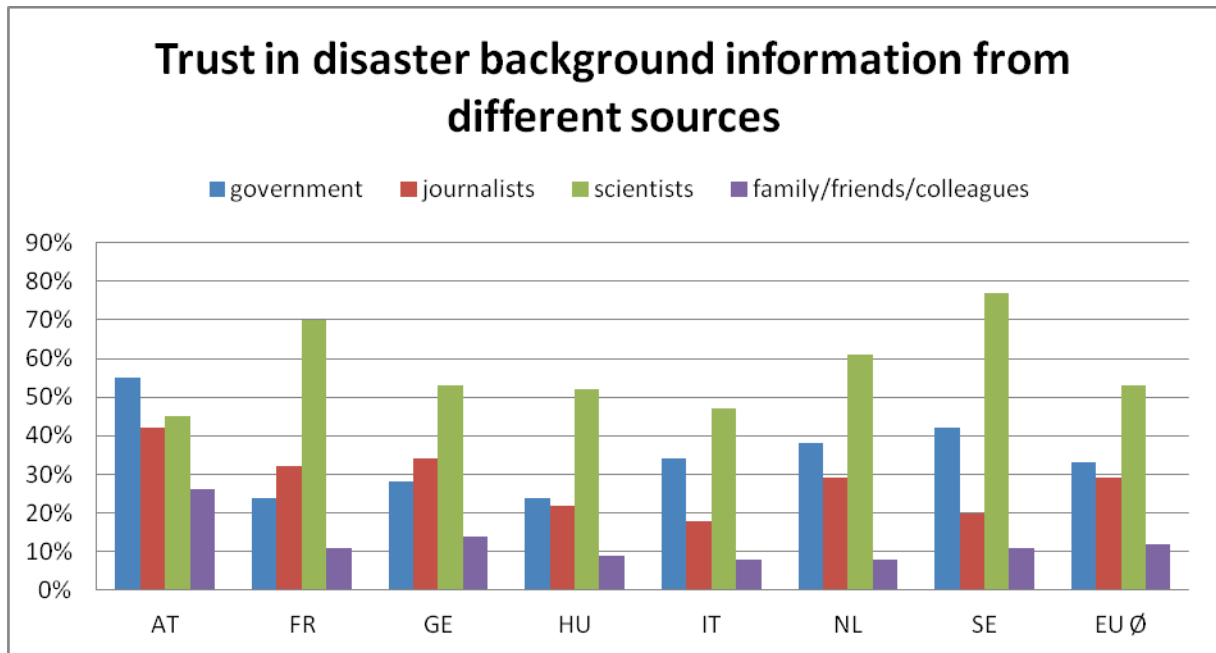


Figure 6: Question: “Who would you trust most to give you background information on possible disasters?” (multiple answers possible). Source: data from Special Eurobarometer on “Civil Protection”, own illustration.

These numbers reveal several interesting points: First of all, it is easy to see that, with the exception of Austria, people from all countries in question here trust disaster background information from scientists much more than from governments, journalists and especially individuals from their personal environment. The Eurobarometer-data also indicate that the French strategy of leaving public crisis communication to (selected) experts is a promising way to improve compliance even in countries like Sweden with exceptionally high trust in authorities.

What is more, family members, friends and colleagues clearly are the least preferred source of information on disasters. This is even true for countries like Hungary or Italy with very low trust in the government and/or journalists.

However, we have to consider that this rating refers to background information on *possible* disasters, not to crisis communication in terms of accurate emergency information, like evacuation orders or behavioural instructions, immediately before or during a crisis. In this regard, statements of Italian survivors in our interviews show that information from a person’s close environment become highly relevant, e.g. in order to substitute for the lack of reliable information from official sources¹⁴.

Another noteworthy fact is that the considerably higher values for trust in national governments in the Netherlands and Sweden in comparison to Hungary and Italy we see in figures 4 and 5 have partially ‘melted’ away in this context. Italian citizens suddenly trust their government even more than Germans do, while in terms of general trust it is the other way round. This indicates that the general perception of a government and public trust in its information concerning a specific area of expertise are not necessarily congruent.

¹⁴ See the Report on individuals previously affected by crises, D 2.3, p. 35.

Finally, while all countries show a more or less similar profile, Austria reveals a significantly different picture in every single aspect: Among the countries examined here information from the government, journalists and family-members, friends and colleagues enjoy by far the highest trust in Austria. On the other side, trust in information from scientists receives the lowest values in comparison.

1.5. Media use

Another relevant aspect for successful crisis communication is the question of reachability which is closely related to media use. As all countries in this project are situated in Western and Central Europe more or less all citizens have access to media like television and radio, which are able to provide urgent information without significant delay. Modern crisis communication, however, increasingly considers the use of new media options like mobile phones and the Internet in order to account for changing patterns of media consumption but also to extend reachability to places where classic media are often absent (e.g. workplace).

In contrast to television and radio, and despite continuously rising rates, not everyone in the examined countries automatically has access to a mobile phone or Internet service. While subscription rates for mobile phones often outnumber the number of inhabitants by far, surveys on mobile phone use reveal that there is still a significant group without these devices. This holds true especially for certain age groups as the following figure illustrates:

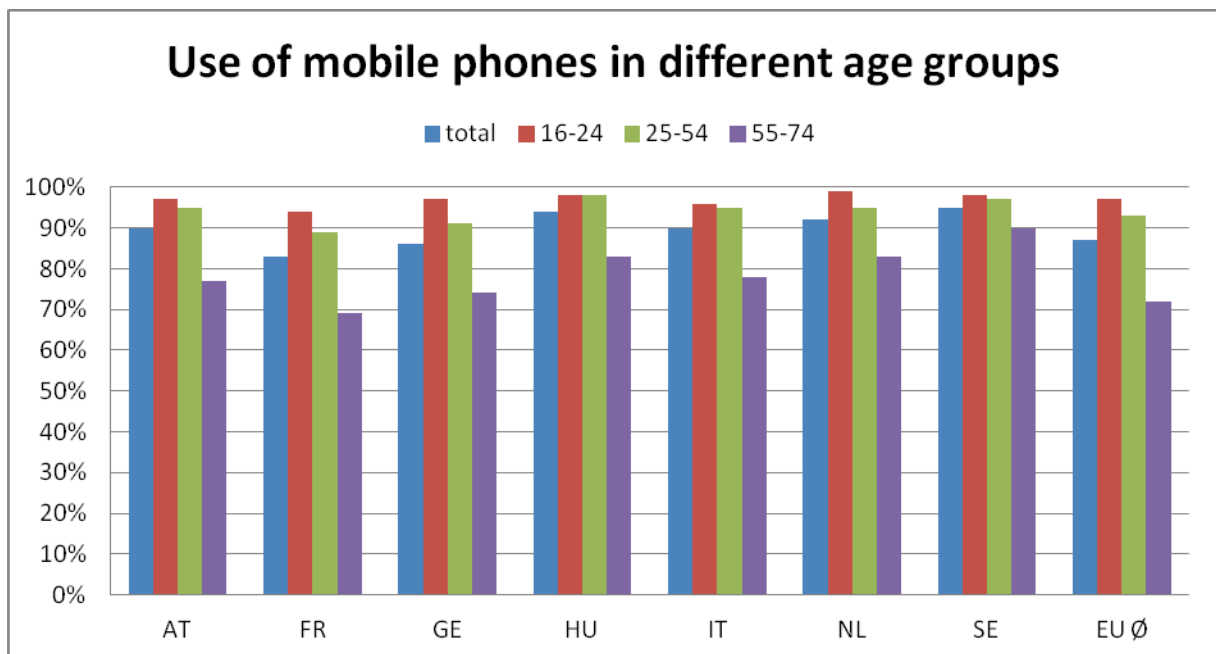


Figure 7: Use of mobile phones in different age groups (2008). Source: data from Eurostat, own illustration.

Though the numbers of mobile phone users can be expected to be higher today already than this data from 2008 suggests, we can nevertheless assume that there is still a significant group, particularly among persons over 55 years old, that cannot be reached via instruments like cell broadcast, a tool which is supposed to enhance alerting measures in many countries over the coming years by sending alerts to mobile phones. Even if a person is in possession of a mobile

phone, the reachability may be limited further according to the type of user behaviour, which ranges from mere possession of a mostly switched off device usually remaining at home to continuous use during each day for multiple private and business matters. Therefore, cell broadcast should not be used to substitute but rather to complement other alerting options.

Regular Internet use is - despite its supposed omnipresence - even lower compared to the use of mobile phones:

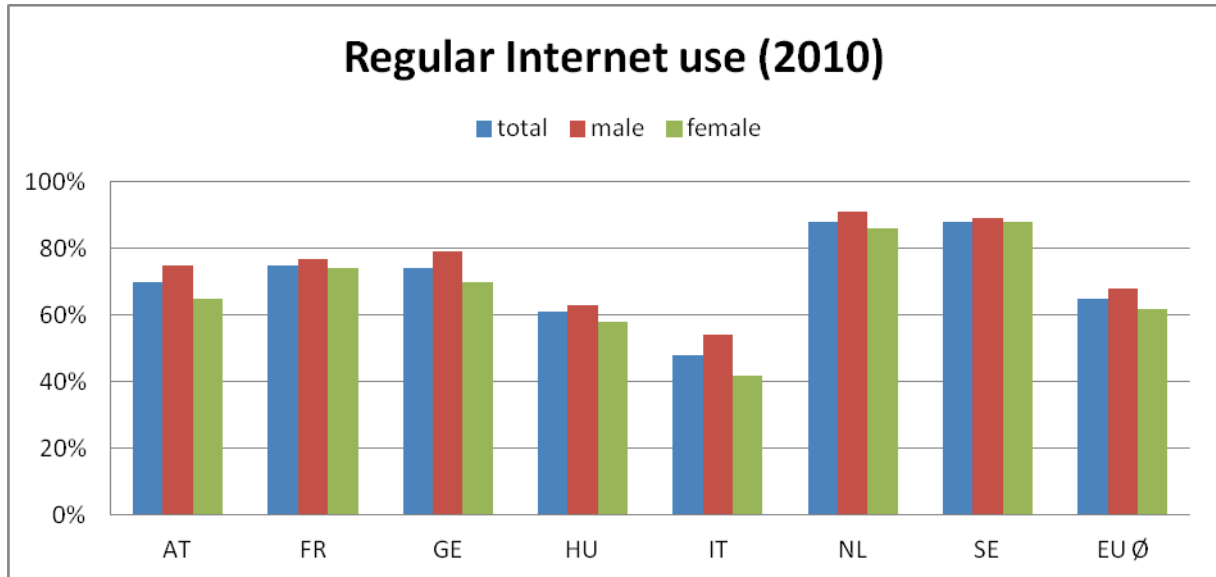


Figure 8: Individuals using the Internet at least once a week (2010). Source: Eurostat.

The numbers show a large gap, with 88 % of all people in the Netherlands and Sweden regularly accessing the Internet in contrast to only 48 % in Italy and 61% in Hungary. These differences suggest that the potential of crisis communication via Internet is much more limited in the latter countries. In addition to this, the figure illustrates that, next to age differences, sex is another relevant variable that should be considered in crisis communication strategies, though its influence in this case is not as relevant as the age differences we see above. Still, in Austria, Germany and Italy there are roughly 10 % more male than female Internet users.

Similar to mobile phones, rates of Internet use are hard to interpret, in this case due to the complexity of the media channel: While some persons use Internet mainly for e-mail communication, others intensively engage in so-called social media activities like chatting, blogging and using social networks. Knowledge about these usage patterns can be of great importance to crisis communicators as both categories pose various opportunities and challenges for the distribution of urgent information. Social networks, for example, are known for their extraordinary capability to rapidly distribute information to a large number of people, which is why knowing which segment of the population can be reached this way is potentially so valuable. This time we also use differentiation via age groups to reveal respective differences:

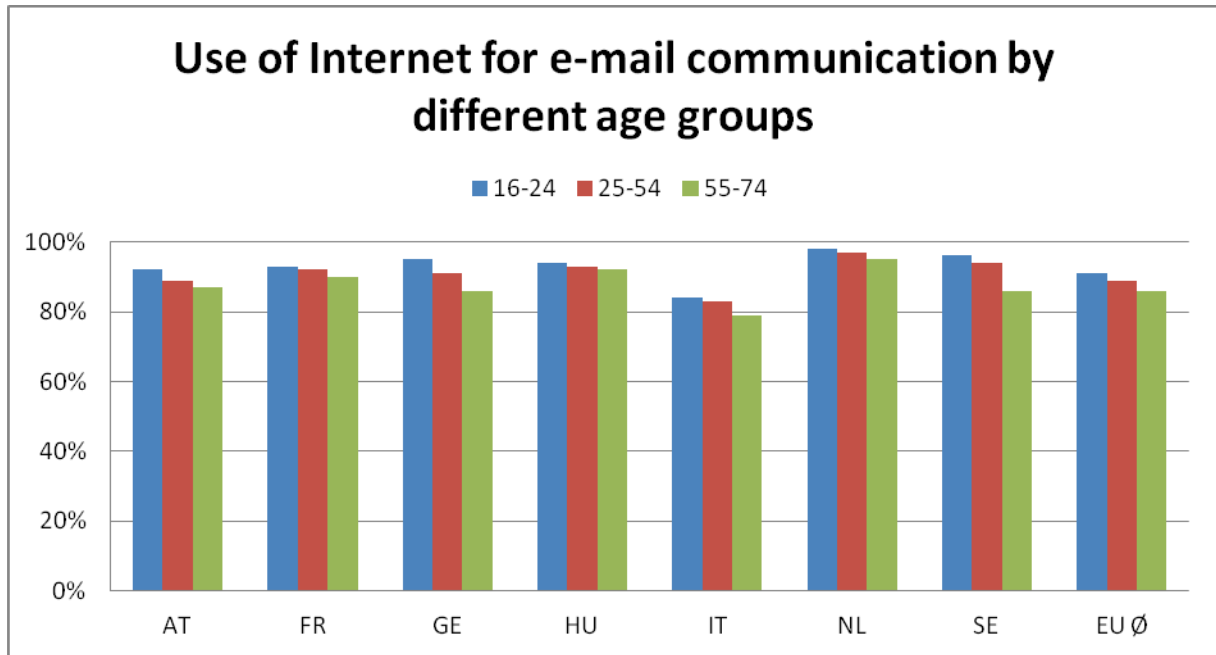


Figure 9: Use of E-Mail Communication in different age groups by Internet users (2010). Source: data from Eurostat, own illustration.

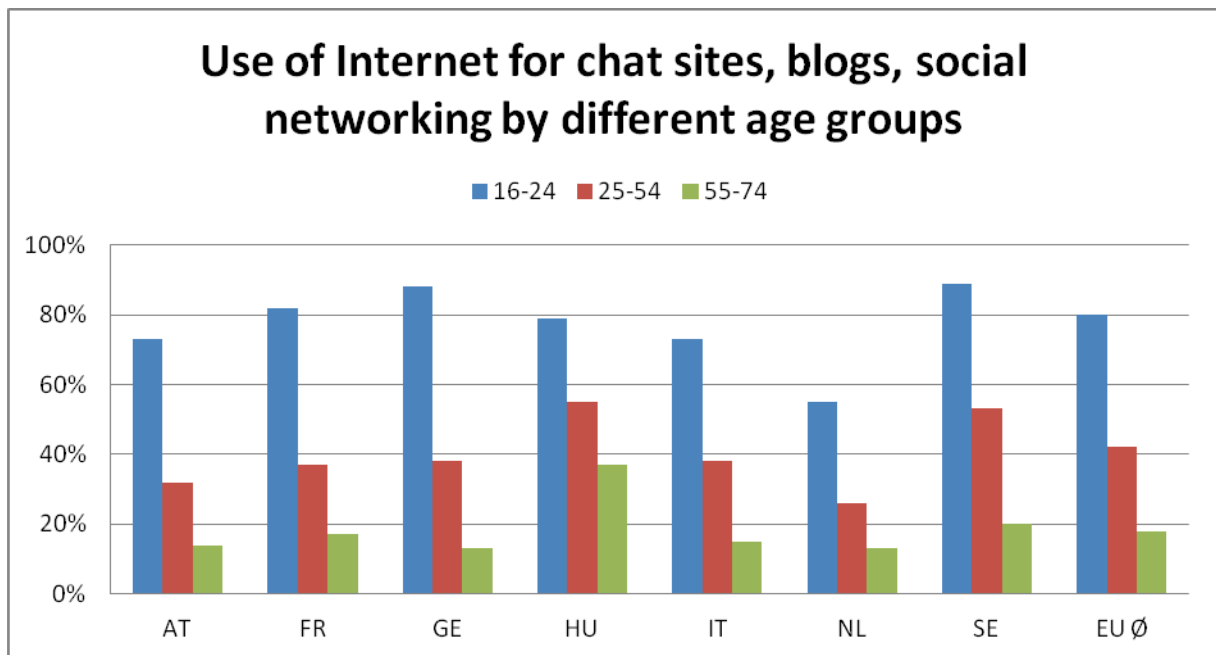


Figure 10: Use of chat sites, blogs and social networking in different age groups by Internet users (2010). Source: data from Eurostat, own illustration.

By and large all countries show similar patterns of Internet use by different age groups. While using Internet for e-mail communication is almost equally common to all people – the lowest rates can be found in Italy – social networks are much more a topic for teenagers and young adults. Only Hungary stands out in this respect with almost 40 % of its citizens above 54 making use of Web 2.0 activities.

It is to be expected that the relevance of social networks will increase in the future, in part simply because people now aged 15-24 years will grow older, and partially because social

networks will gain even more popularity, especially among young users who increasingly use these channels as a substitute for e-mail communication. Nevertheless, the role social media will play in crisis communication is hard to predict as the following example illustrates: One of our previous interviewees from Italy who had survived a crisis emphasised the usefulness of networks like Facebook. It was used during the crisis to gather local information when alternative sources, like telephone lines, had been rendered useless in the course of events and official information was scarce because rescue teams had not yet made their way into the affected area.

1.6. Social Integration

Still another aspect relevant for risk perception and the success of crisis communication concerns the degree of an individual's social integration. Case studies on disasters have shown that persons with a small social network are more likely to miss evacuation orders and to lose their life during a crisis¹⁵. In fact, a study on the French heat wave in 2003 revealed that 92 % of the victims lived alone¹⁶, thus without support in their immediate environment at least.

It is of course possible to live in a single-person household and simultaneously have a vast social network, which is why living conditions alone are not a perfect indicator for social integration. At this point we therefore draw on the subjective assessment of whether one's own network is satisfying or not:

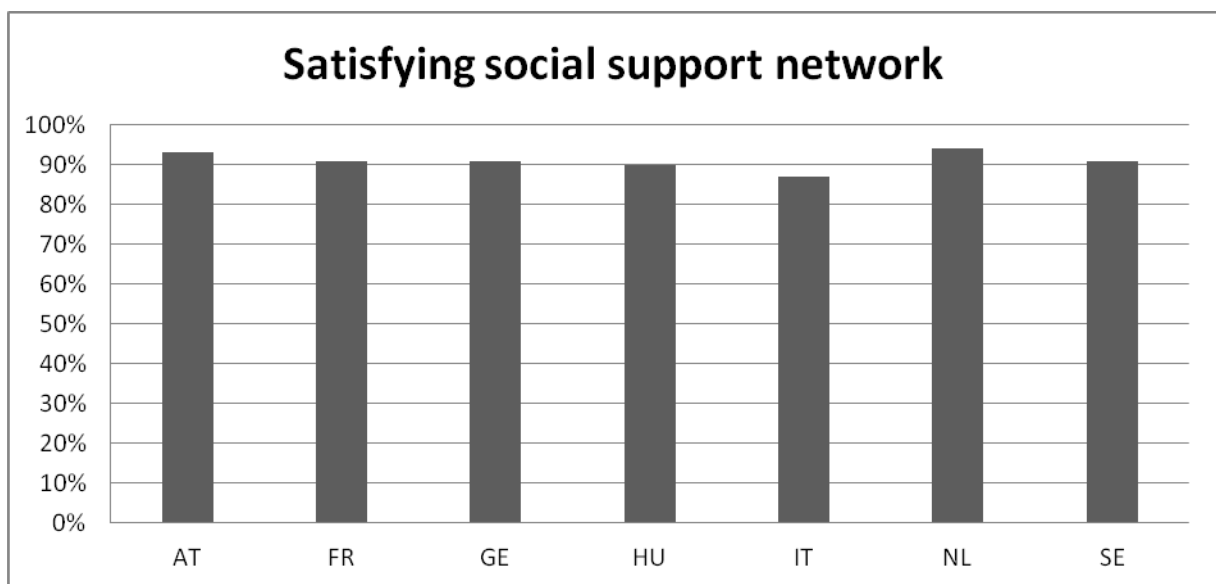


Figure 11: Question: “Are you satisfied with your social support network?” Data from United Nations Human Development Report 2010, own illustration.

This time there are only minor variations between the countries in question here. However, we have to note that in each case around 10 % of the population does not feel they have a sufficient social network. This indicates that there is a significant group that is less likely to be reached via personal communication and therefore has a higher risk of missing important information in a

¹⁵ See Taylor-Clark et al. 2010, Poumadère et al. 2005.

¹⁶ See Poumadère et al. 2005, p. 1487.

crisis situation. The high share of individuals living alone among the victims of the French heat wave should encourage authorities to look for additional measures to reach this group.

1.7. Summary

The statistical data presented here on risk perception, trust in authorities, trust in information sources, media use and social integration reveal that many of the countries examined in this project show significantly different conditions for successful crisis communication. Especially valuable insights are provided by the Special Eurobarometer on Civil Protection, which offers a profound overview on how most people worry about specific types of disasters. These data form a kind of *disaster perception profile* for each country, with striking similarities between some nations (Germany and France) and substantial deviations as in the case of Italy or Sweden. These results are of particular importance for crisis communication as the respective management plans and strategies usually relate to disasters as a monolithic entity, without taking into account their specific nature and the specific perception within a society. Given the great variations regarding which types of disaster people feel most at risk of, one conclusion could be that crisis communication should, in some cases, particularly emphasize the imminent danger posed by the disaster. In other cases, public communication can already give more room to issues like appropriate behaviour and secondary background information.

A second aspect that is underlined by the figures above is that the audience for crisis communication is not a monolithic entity either. Factors like cultural background, age and sex are of crucial importance for reaching citizens as well as for making them comply with evacuation orders and other instructions or advice included in crisis communication. We have seen that there are specific groups like elderly people, women and persons with small social networks who may pose additional challenges in this regard and should therefore be of special consideration in the creation of communication strategies.

What is more, several pieces of data tell us that the audiences not only vary within but also between countries. Of the cases this project deals with, Italy stands out. Next to its “disaster perception profile” with earthquakes being the major source of worry among the population, Italians are least engaged in disaster preparations, have the least trust in their national and regional government and use the Internet less often than people from the other countries of our study. Italy also shows the lowest value in regard to satisfaction with social support networks. All these aspects are indicators that Italian authorities are faced with very different and often more challenging conditions regarding crisis communication.

But other countries also show very distinct patterns in some points, especially if we look at the expectations relevant to a crisis situation that different actors are confronted with. Next to Italy, national authorities from France, Germany and Hungary enjoy very little trust by their population, a fact that should encourage them to give their local authorities a stronger part in crisis communication since trust in them is far higher. In France this problem has already been addressed by assigning experts a prominent role in crisis communication. However, the question of which information source is trusted most in a crisis situation is still another matter. In this regard national authorities from countries like Italy and Hungary enjoy far more trust and outstrip even journalists. In this context, Austria is another very special case as its national government outshines even scientists, an information source that receives by far the most trust in all other countries. What is more, journalists and private contacts also enjoy exceptionally

high trust, making Austria a country with very favourable conditions for compliance with crisis communication related instructions unless these sources contradict each other.

To sum up, diversity regarding the audience for the crisis communication is important. Taking this insight into account by adjusting crisis communication for specific groups and specific disasters as well as by using different communication channels may contribute substantially to rendering crisis communication more effective and, subsequently, lower the number of victims in crisis situations.

2. TOWARDS A MODEL OF SOCIO-CULTURAL CLUSTERS

Comparative work based on social or cultural characteristics at a national level is a rather easy task nowadays as countries are either obliged to provide or voluntarily provide national-level data on many indicators to the European Commission, the OECD, the United Nations and other international institutions. The regularly published Eurobarometer, as we have seen, provides, valuable information on trust in authorities and perception of risks, as well as answers questions like whether people are more afraid of so-called man-made or natural disasters (see above). This wealth of information, however, is of limited use for a target group-specific crisis communication as these facts show us only variations *between* countries but tell us nothing about the differences *within* these countries. In fact, a Dutch peasant may have more in common with a French peasant than with a Dutch businessman. Thus, to improve crisis communication strategies by tailoring strategies for different types of recipients, we need to identify information that will allow us to be more target specific and to construct socio-cultural clusters for crisis communication.

What are socio-cultural clusters? There is nothing like a commonly shared and agreed upon definition of ‘socio-cultural cluster’. We therefore propose the following working definition for this purpose:

A society is a system that encompasses a variety of social entities, so-called ‘clusters’ that are defined by their sum of social and cultural contexts, interests and needs expressed in different lifestyles. The way we perceive and deal with risks and crises is determined by the respective cluster an individual belongs to.

Common ‘objective’ key indicators for social strata or social clusters are sex, age, income, property and educational level. Often occupation is used as an additional indicator as it is usually highly correlated with the former ones. As this is the same for many other areas, additional objective factors lying “across” the classical indicators have been increasingly included in socio-demographic analyses since the 1980s, forming an extended approach to social situations. Especially in the USA, ethnicity has been in the centre of many studies analysing and indicating, for example, inequalities in various fields¹⁷. Again, in other countries the regional background is highly important. For example, most Italians would agree when asked whether there are regional differences between people from the northern and southern part of the country. Many more of these objective factors have been found to have an influence on the perception of risks and the success of crisis communication, for example social integration¹⁸ or living in a rural or urban environment.

More sophisticated models of socio-cultural clustering include ‘subjective’ factors crossing the objective factors. A very influential approach in regard to the cultural construction of risks was used by Mary DOUGLAS & Aaron WILDAVSKY. In their seminal book “Risk and Culture” (1982) they emphasized that cultural factors such as common norms, values and beliefs are

¹⁷ See for example the debate on Environmental Justice.

¹⁸ Poumadère 2005, Taylor-Clark 2010.

crucial to understanding different perceptions of risks.¹⁹ By now many studies indicate the same for the perception of natural disasters and the success of crisis communication.²⁰

One prominent model that includes the idea of socio-cultural values and beliefs resulted in so-called 'socio-cultural milieus'. The predominant model of such an approach emerged within market-research and was developed by the German SINUS INSTITUT. While there have been other versions of social-milieu typologies²¹ this one is probably the furthest developed and most widespread, profiting from the extensive resources available to market research. The core of this model is socio-cultural milieus, identifying and describing segments of the society where persons within one cluster have more in common in terms of objective and subjective characteristics than individuals from different clusters. The major problem associated with this model is its origin in market research: Whereas the Sinus typology covers a broad range of indicators from major aspects of modern life, it is nevertheless centred on the prediction of *consumer* behaviour. Items relevant for risk / disaster perception or behaviour in crisis situations, which would have been central for our study, are not included in this model.²²

Several other models also exist for explaining heterogeneity within national societies, for example the inclusion-exclusion-approach which has been developed in France in the last years of the previous century. ROBERT CASTEL has extended the dualistic concept of inside/outside with the third category of social vulnerability, constituting a transitional form between both poles. As its focus is on social exclusion it is, again, hard to apply to other areas like crisis communication.

¹⁹ Douglas/Wildavsky 1982.

²⁰ See for example: Martin et al. 2009; Gaillard/Texier 2010; Gierlach et al. 2010.

²¹ See for example the GfK Socio- or Euro-Styles (http://www.gfk.com/group/services/instruments_and_services/contact_dates/00150/index.en.html). Another similar approach are the "Mentality" Consumer Clusters developed by the Dutch company MOTIVACTION (http://www.en.motivaction.nl/105/Segmentation/Mentality_tm/).

²² Two more recent German approaches have adapted the SINUS milieus by including variables related to environmental issues (Umweltbundesamt 2008) and related to the awareness of nature (Bundesamt für Naturschutz 2009).

3. CONSTRUCTING SOCIO-CULTURAL CLUSTERS FOR RISK PERCEPTION & CRISIS COMMUNICATION RESEARCH

As we have seen, there is currently no model or tool available that would allow a socio-cultural clustering ready for use for risk and crisis related questions and problems and, thence, inclusion in this project. This point was also made by Prof. George Gaskell, one of the authors of the EUROBAROMETER studies, and Prof. Ragnar Löfstedt, editor of the Journal of Risk Research. Both confirmed that there is currently no socio-cultural cluster available that focuses on items such as risk perception or disaster behaviour (personal communication, Kloster Andechs, 25 October 2011). Therefore it would have been necessary to develop our own cluster model, which would have been a completely different project. In general, the construction of socio-cultural clusters includes a time-consuming and cost-intensive multistage process²³. This was not possible within the Opti-Alert project for three major reasons: Firstly, all social scientific methodology used within this project is qualitative and explorative in its character, which allows the generation of items and gives numerous invaluable insights into motifs, assumptions and beliefs. And, although qualitative studies are a necessary prerequisite for the identification of relevant variables, they are not sufficient for the construction of the clusters. Secondly, the construction of clusters would clearly require, after an explorative phase, a successor phase that would, after operationalizing items and developing scales, be followed by conducting an extensive quantitative survey²⁴. Whereas the former would help to identify the relevant variables, the latter would be necessary to validate the items, to quantify the clusters and to specify the magnitude and the “borders” of each cluster. Thirdly, validation and quantification of these clusters would have required large amounts of data *for each* examined country.

Therefore, we will address the question of how a suitable and adequate cluster-typology for risk perception and successful crisis communication could look from the conceptual point of view. While data collection and the subsequent steps are beyond the scope of this project, the first explorative step concerning the identification of variables that can be used in the construction of such a typology can well be provided here. Based on analysis of relevant literature on risk perception and risk communication, on the one hand, and on the empirical material acquired within the in-depth interviews with 23 experts in seven countries (deliverable D 2.2) and the analysis of 35 interviews with ‘survivors’ of major disasters in the 7 examined countries (deliverable D 2.3), on the other hand, we were able to identify objective and subjective variables that are highly relevant for the perception of risks and disasters and – as this has been our main focus in this project – with requirements for sufficient and successful crisis communication that must be taken into account. These findings were also immediately fed into the design process of the focus groups that will be conducted as a separate task within work package 2 of our project (see upcoming deliverable D 2.5).

²³ See Otte 2005, pp. 444f.

²⁴ For example, the SINUS study started its research with more than 1,700 interviews – in Germany only; they are updated annually with representative surveys including about 100,000 interviewees to account for new developments in the society (see Umweltbundesamt 2009, p. 16, FN 3).

3.1. Objective factors for constructing socio-cultural clusters for crisis communication

In regard to the classic socio-demographics, the following variables are known from literature to be influential on the perception of risks and disasters, including aspects such as the reachability for authorities and evacuation behaviour: sex²⁵, age²⁶, ethnicity²⁷, income²⁸ and profession²⁹ or education, respectively. A second set of variables that should be considered are further objective factors like religion³⁰, marital status³¹, living in risk areas³², living in rural or urban areas³³, previous experiences with disasters³⁴, the degree of social integration³⁵, home ownership³⁶, and, of course, media use.

3.2. Subjective perception and behavioural patterns for constructing socio-cultural clusters for crisis communication

In order to create socio-cultural clusters, subjective perception and behavioural patterns are important sets of relevant items as well. These items include trust in authorities, trust in the media³⁷, attachment to one's home town or region³⁸, the subjective perception of one's own ability to deal with disasters (self-efficacy)³⁹, the subjective state of knowledge concerning disasters, proper behaviour⁴⁰, and assumed coping strategies, use of media and information behaviour, collectivist or individualist values⁴¹ and the attribution of responsibility for

²⁵ Finucane et al. 2000; Poumadère et al. 2005; Taylor-Clark et al. 2010; Park/Reisinger 2010.

²⁶ Poumadère et al. 2005; Taylor-Clark et al. 2010.

²⁷ Finucane et al. 2000.

²⁸ Poumadère et al. 2005; Park/Reisinger 2010.

²⁹ Heitz et al. 2009; Taylor-Clark et al. 2010.

³⁰ Gaillard/Texier 2010; Chester/Duncan 2010.

³¹ Lindell/Perry 2004, p. 159f.

³² Heitz et al. 2009; Egbelakin/Wilkinson 2010;

³³ Olofsson/Öhman 2007.

³⁴ Lindell/Perry 2004, pp. 150-153.

³⁵ Poumadère et al. 2005; Taylor-Clark et al. 2010.

³⁶ Taylor-Clark et al. 2010.

³⁷ Viklund 2003.

³⁸ This factor has been mentioned several times in the qualitative interviews with victims of disasters that have been conducted as part of this project (see D2.3 „Report on Individuals previously affected by crises“).

³⁹ Lindell/Perry 2004, pp. 157f; Martin et al. 2010.

⁴⁰ Ibid.

⁴¹ Gierlach et al. 2010.

protective measures (yourself or authorities)⁴² resp. for the occurrence of a disaster (i.e. man-made, natural or divine)⁴³. In addition to these, items on the perception of specific types of disasters, like man-made or natural, should be included.

The following graph shows an arrangement of these variables, using the vertical axis for objective variables and the horizontal axis for subjective variables:

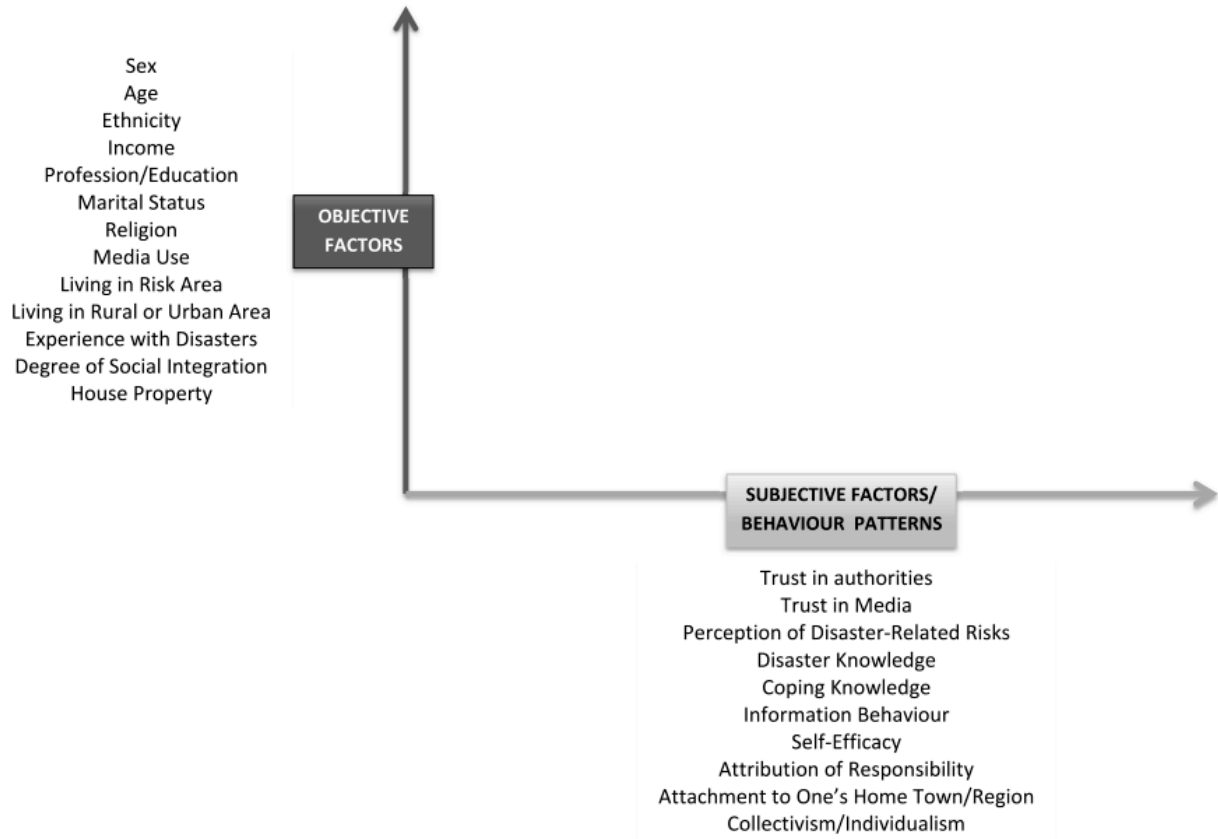


Figure 11: Variables for the construction of socio-cultural clusters related to successful crisis communication (illustration by the authors)

Please note: The axes do not yet hold any labels like “low/medium/high class” or “tradition/modernity” as this kind of specification would depend on the results of the (quantitative) clustering process.

⁴² Martin et al. 2010.

⁴³ Heitz et al. 2009.

4. CONCLUSIONS

Previous studies have concentrated on cross-country comparisons or local case studies, not risk or disaster specific socio-cultural clusters currently exist. Growing ethnic and cultural diversity asks for more sophisticated tools such as target-group specific approaches in disaster communication. Public crisis management only recently became increasingly aware of this mismatch. By and large, target-group specific strategies exist only to a very limited extent. While adjusting crisis communication to different stakeholder (groups) has become normal by now, this topic still leads a rather shadowy existence in crisis communication.

We have identified five basic dimensions where targeting some segments of the audience with special means may become relevant: reachability, perception, comprehension, physical or psychological vulnerability and compliance (see also D 2.2, pp 27 ff.).

In regard to successful crisis communication, these variables should be able to predict or directly portray one or more of the following aspects:

- 1) the likelihood and the means to reach a person (media use, spatial reachability)
- 2) the target's capability to perceive the message (handicaps);
- 3) the target's capability to understand the message (comprehension, eg. language problems);
- 4) the target's capability to comply with the message's content (physical and or psychological vulnerability) and
- 5) the target's readiness to comply.

Within this report a basis for the development of crisis communication-specific socio-cultural clustering has been proposed, based upon empirical material gathered by the Opti-Alert project. This includes identified obstacles for successful crisis communication and is based upon variables relevant in this context, identified by literature research on risk perception and risk and disaster communication. Our approach provides a starting point for the development of socio-cultural clusters regarding successful crisis communication and will already provide important insights for the next step within Opti-Alert: the design of and conducting of focus groups in seven European countries.

Given the extensive resources needed for further research in socio-cultural clusters it is desirable that crisis management authorities continue to develop a sensitivity regarding the potentials lying in target group-specific crisis communication. It is the task of further research to continue this sophisticated challenge which would then includes quantitative surveys as well as an integrated theoretical framework to guide the clustering-process. Mastering this challenge may help save numerous lives during future disasters and should thus be pursued with special vigorousness.

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