

Risk communication in regard to German Regulation on Major Accidents (Störfall-Verordnung)

Consideration of Gender-aspects

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- Part 1 **Legal analysis** (Application of the Environmental Information Act (UIG) in conjunction with the German Regulation on Major Accidents (Störfall-Verordnung)
- Part 2 **Legal analysis** according German law in reporting accidents and incidents
- Part 3 **Consideration of Gender-aspects** in risk communication

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Objective

- Are more men than women affected differently by major-accident risks?
- Do men and women perceive risks from technical facilities differently?
- Do men and women respond differently to different approaches, styles and contents of risk communication?

Gender & Gender-Mainstreaming

- „**Gender** refers to the societal, social, and culturally-formed gender roles for women and men. They are – in contrast to the biological sex – acquired and thus can also be changed.“
- „**Gender Mainstreaming** is defined as the up front and consistent consideration in all societal undertakings of the different life situations and interests of women and men, in light of the fact that there is no gender-neutral reality.“

*Adapted from Federal Ministry for Family Affairs, Senior Citizens, Women and Youth
(Bundesministerium für Familie, Senioren, Frauen & Jugend)*

Key terms of risk communication

- **Risk perception**
refers to the evaluation of risks by laypersons.
- **Risk tolerance**
refers to the willingness to accept risks.
- **Risk behavior**
refers to placing oneself at risk on the basis of personal decisions or habits.

Gender-Mainstreaming means in the context of the Störfall-Verordnung, to develop communication that

- will reach men and women equally;
- will enable them to assess hazard potentials appropriately and
- will enable them to take part in appropriate emergency response action in a major accident.

Results and Conclusions

Gender in execution of the “Störfall-Verordnung”

| Risk communication cases | Important stakeholders | Gender-Issue |
|---|---|---|
| 1. Standard setting | Experts, Associations, Commissions, Policy-makers; usually not those affected | Differences between male and female experts in regards to risk perception and risk tolerance |
| 2. Licensing of an establishment | Authorities, Operators, Public objectors, Associations, Technical commissions | Differences between male and female experts in regards to risk perception and risk tolerance |
| 3. Communication according to § 11 StörfallV | Residents, Public, Operator, Authorities | Differences in regards to risk perceptions of laypersons, different usage of information |
| 4. Major accident | Authorities, Operators, Employees, Companies, Residents, First responders, Health experts | Differences between male and female experts in regards to risk perception; Differences in regards to risk perceptions of laypersons; |
| 5. Post major accident communication | Authorities, Employees, Operators, those affected, health experts | Differences in regards to trust in institutions; differences in dealing with stress (PSTD = Post traumatic stress disorder) and disease incidence |

Relevance of the evaluated studies

Risk perception

- Surveys for laypersons & experts
- Risks of products
- Lifestyle-risks
- Technology-Risks
- Operational risks (2)
- from 1991

Risk tolerance

- Experiments with laypersons & experts
- Personal statements
- Gambling, Investment-decisions
- No operational risks
- from 1967

Risk perception & Gender of **laypersons**

Assessment of the data quality

- Data quality often inadequate: no control of confounders, more likely hypothesis-generating than hypothesis-testing design
- Only two studies are directly transferable

Results

- Attention to specific risks: no reliable statements possible
- Risk perception: for **women** in most studies statistically **significantly higher**, but the magnitude of differences is rather small

Risk perception & Gender of **Experts**

Assessment of the data quality

- Data quality inadequate
- No control of social career effects & other confounders
- No hypothesis-testing design
- No study is directly transferable

Results

- **Women** demonstrate a **higher risk perception** than men, however, the differences, i.e. the magnitude of the effect, is rather small.

Risk tolerance (**laypersons & experts**)

Assessment of the data quality

- Data situation is good
- Not really transferable though

Results

- **Women** demonstrate a **lower risk tolerance** than men, but the magnitudes of the effect are rather moderate
- Social career effects overshadow gender effects

Summary

Scientifically sound statements are only possible for risk perception and risk tolerance – not for being affected by risk nor for reactions to risk communication:

- Risk perception is higher for women than for men
- Risk tolerance is higher for men than for women.

Admittedly though, the effects are rather small and to be considered with caution, for **male and female experts** gender differences are also seen, but they should be considered with caution too.

Recommendations (1/2)

- For the risk communication there is no substantial need for a design change of the information in accord with §11 Störfall-Verordnung (Major-Accident Ordinance).
- Possibilities for optimization exist in regards to information on
 - Gender-specific hazards (e.g. Reprotox)
 - Gender role-specific reaction patterns during a major-accident
- Analyses of the vicinity in the exposure zone of facilities can clarify the question of gender-specific differences in being affected.

Recommendations (2/2)

- A focus on the construct of the social role and consideration of educational level, age, culture and gender appears to promise better success than focusing on gender alone.
- A mixed constituency of commissions (men-women and career fields) for standard-setting and permitting of an industrial facility could be of benefit.
- **More research** is needed from the gender perspective in regards to:
 - Being affected
 - Information needs
 - Continuity of attention
 - Compliance with conduct recommendations during a major-accident
 - Psychosocial therapy after a major-accident