

Differences in Citizens' Communicative Behaviour about Natech Risk Information Disclosure? Japan vs S. Korea

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Recently, risk communication issues have started to gain more academic interest considering the risk of technological accidents triggered by natural hazards, known as Natech. If chemical and Natech risk communication is limited, individuals may find themselves in lack of necessary information crucial for their effective preparedness against and response during a potential accident. Hence, such information deficiency presents a secondary problem stemming from the initial Natech accident risk. Risk perception studies have so far explored how that initial risk is socially experienced, however, this study focuses on investigating this secondary communication problem.

Methodology

This study ventures to explore and understand the differences between Japanese and S. Korean citizens' communicative behaviour concerning Natech risk information disclosure. We examine these two countries because they share an analogous collectivistic sociocultural background in view of Hofstede's (2001) cultural dimensions, yet they hold an important institutional difference in terms of chemical and Natech risk communication: S. Korea has recently updated their regulatory framework for the management of technological accidents, i.e. Chemical Controls Act (2018), introducing requirements for public disclosure of chemical information.

We employed the interpretative framework of the Situational Theory of Problem Solving (STOPS) (Kim & Grunig, 2011) in order observe the communicative attitude of the public. According to STOPS (Figure 1), the Communicative Action in Problem Solving (CAPS)

involves the acquisition, selection and transmission of information. This factor is dictated by the individual's Situational Motivation (SM) along with any available relevant experiences, subjective knowledge or expectations (Referent Criteria). SM is conceptualised in turn as the product of three antecedents, Problem (PR), Involvement (IR) and Constraint Recognition (CR). The first element refers to the perceived severity of the situation, the second to the perceived personal relationship with the problematic situation, and the last to the perceived barriers that limit one's ability to communicate about the problem.

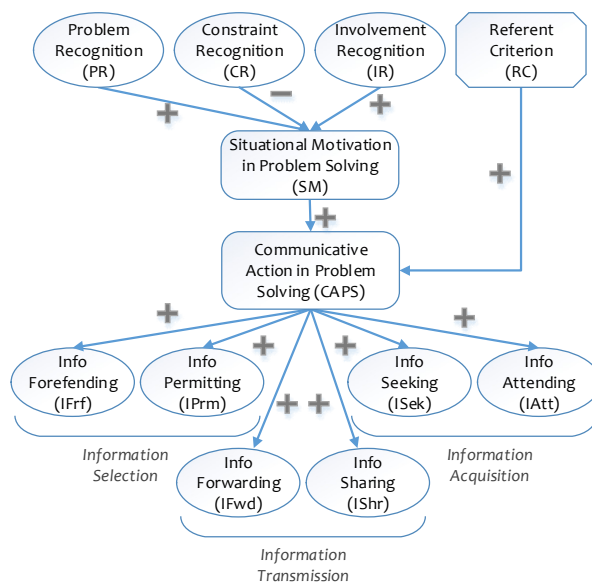


Figure 1. STOPS Conceptual Model

For the purposes of data collection, self-administered, anonymous, household questionnaire surveys were carried out in 2018 (Japan) and 2020 (S. Korea) targeting residential, urban districts near prominent industrial parks in both countries: Higashinada (Kobe) and Sakai-Senboku (Osaka) in Japan, and Yeosu,

Suncheon, Gwangyang and Ulsan in S. Korea.

Results

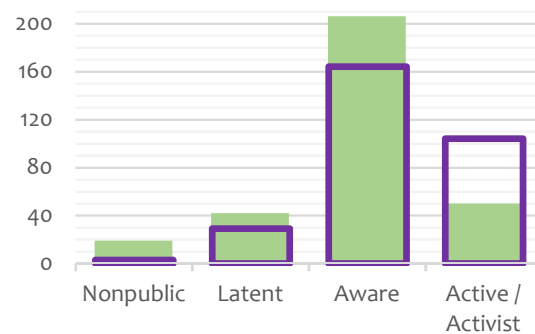
In terms of the Natech accident risk itself, our findings revealed that both Japanese and S. Koreans generally perceive the risk to be quite high, although Japanese seem to consider it a little more probable (Table 1). Moreover, Japanese expressed a remarkable perceived unpreparedness for such scenarios, comparatively. Considering the Natech risk information deficiency issue, the problem is perceived by both as severe and one that very much affects their lives; however, S. Koreans seem to be statistically significantly less constrained to solve it, they have more expectations about how it should be dealt, and are more motivated to communicate about it. Additionally, Japanese scored consistently lower in the active components of all three CAPS aspects, which are information selecting, forwarding and seeking, indicating possibly a comparatively less active communicative attitude.

Table 1. Mean Scores and Differences for Perceived Natech Accident Risk and STOPS Measures

Aspect	Jap.	Korea	t-Test
Natech Accident Risk			
Natech Potential	5,92	5,71	.009
Accident Scale	5,70	5,82	.161
Appropriate Response	2,75	4,00	.000
Natech Risk Info Deficiency - STOPS			
Problem	5,89	5,74	.053
Involvement	5,21	5,31	.294
Constraint	4,67	4,12	.000
Referent Criteria	3,37	4,12	.000
Situational Motivation	4,43	4,69	.005
Info Selecting	2,66	3,60	.000
Info Permitting	4,83	4,58	.005
Info Forwarding	3,72	4,31	.000
Info Sharing	4,02	4,56	.000
Info Seeking	3,29	3,89	.000
Info Attending	4,92	4,87	.560

Next, we segmented the public into four categories based on their situational motivation determinants for both survey groups (Figure 2). It is noteworthy that for both groups more than 8 in 10 persons belong to either aware or active publics, exhibiting thus a high concern and communicative activeness about the Natech information deficiency issue. Also, we found a notably

smaller number of S. Koreans, in particular about 10%, who belonged in non- and latent publics compared to almost 19% for Japanese respondents. Along with a comparatively larger aware public (+10%), and a less than half activist public, results show an overall less active communicative behaviour of Japanese in solving the Natech risk information deficiency problem.



Japan | N=317

S. Korea | N=300

Figure 2. Comparison of Public Segments for Natech Risk Information Deficiency between Japan and S. Korea

Conclusions

Our research findings suggest that, even though both acknowledge the Natech risk information deficiency issue as serious, Japanese are significantly more constrained in handling it. S. Korean respondents seem to be more communicatively active about it, and more confident in responding to potential Natech accidents. The chemical risk information regulation framework may have contributed positively in this regard. This study attempted to provide some rudimentary empirical evidence for risk managers to pursue and promote chemical and Natech risk information disclosure as a means to alleviate the secondary risk communication issue, but further research is required to isolate any potentially influencing omitted sociocultural factors.

References

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