

IMPACT: SAFETY AND SECURITY IN MULTICULTURAL CONTEXTS

Impact of cultural aspects in the management of emergencies in public transports

IMPACT has just been concluded. Started in 2015 for the Horizon 2020 program, the European project worked on specific aspects of public transports safety and security for 30 months. The consortium – **led by the Italian company Deep Blue s.r.l.** (<http://www.dblue.it/>) – studied the impact of cultural aspects in the management of emergencies in public transport. The aim is to improve the management capability of crises (natural disasters, accidents, health issues and diseases, terrorist attacks) that could undermine people's security. The project was aimed to public transport operators and European policy makers. The IMPACT consortium comprised 8 partners from 6 countries, including SMEs, Universities, one Large Company and a Public Body: Deep Blue s.r.l. (Project Coordinator, IT), PROPRS Ltd. (UK), University of Leeds (UK), University of Amsterdam (NL), Varna University of Management (BG), Anadolu University (TR), Maritime Office Gdynia (PL), Nuovo Trasporto Viaggiatori (IT).

Public transports hubs are very crowded environments where **cultural aspects are key factors** in the management of emergencies. These key factors include personal and collective behaviours such as: response to stress, risk perception, situational awareness, reaction time, the attitude to create groups with well-known people or people with similar cultural characteristics.

IMPACT has used an innovative approach to validate the results of the project. The behavioural modelling and simulations of the cross-cultural crowd behaviour in transport hubs were performed through agent-based computational modelling. Two possible scenarios were considered: **passengers evacuating a transport hub**, to determine the dynamics of evacuation processes; **stranded passengers**, to determine group frustration. In the first scenario, the analysis focused on specific behaviours or cultural characteristics that could slow down the evacuation process. In the second, on social dynamics that might arise (disputes for resources like food, water or travel means, discussions for priorities in queues, a cultural group overwhelming another). In both of these scenarios, **socio-cultural factors emerged** (language, educational level, understanding of signage, traditional clothing, reaction times), affecting these dynamics with a twofold effect: they **could amplifying or diminishing consequences of generic safety hazards or security threats**, and causing new risks. As an example, people wearing traditional long clothes may be slowed down during an evacuation, thus increasing the risk of being injured by a fire.

Other emerging aspects indicate that: **socio-cultural factors affected the evacuation time up to 30%**; a multicultural crowd can be beneficial in the evacuation process, creating a faster-is-slower effect when not everybody understands the announcements immediately, creating a phased evacuation, avoiding immediate congestion at the exits. In the stranded passengers scenario, gender influences the group frustration level more than traveller type and emotion contagion can accelerate both the spread and decrease of frustration.

IMPACT's results are mainly three:

1. A **cultural-risk assessment methodology**;

2. **Multicultural communication guidelines**, developed for improving security operators and first responders' situational awareness and intercultural competences in all phases of an emergency;
3. **A cultural-based training package**, a general introductory course aiming at raise awareness about the importance of cultural competence in daily working situations.

IMPACT result's are already available to transports managers and operators in order to increase the emergencies management capability. The results will also help governments and European institutions to **improve security policies**.

More info: <http://www.impact-csa.eu/>

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