Chapter 32
Operationalising Resilience Within Planning Practice:
Towards an Online Decision Support Model

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ABSTRACT

Over the past decade the concept of 'resilience' – broadly viewed as the capacity to plan, prepare, respond and recover from shocks or disturbances - has gained increasing attention within urban planning literature. Yet there remains ongoing debate around how this concept can be operationalised within planning policy and practice. This paper presents emerging findings from two EU funded projects – HARMONISE and RESILENS – which both seek to explore the development of e-tools and processes to equip planners with capabilities to assess and enhance the resilience of existing and future urban development projects. To date, the widespread development and optimisation of such tools (and subsequent exploitation of such functions) have been relatively limited in practice due to a poor understanding of resilience as a concept, and differing conceptualisations of 'resilience' across cities and national borders. This paper examines some of the key practical challenges in this respect.

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INTRODUCTION

In recent decades the world has become increasingly urban. Today it is estimated that 50% of the world's population live in cities and this trend is likely to continue into the future, with an estimated 70% of the world expected to be urban dwellers by 2050 (United Nations, 2012). This rapid expansion of cities is exposing a larger number of people and critical infrastructures to the threat of disasters and crisis events and posing additional challenges for the design, planning and management of urban areas. Indeed, a number of high impact crisis events over the past two decades have highlighted the vulnerability, complexity and interdependency of contemporary urban infrastructure systems.

Within this context, the enhancement of urban security has become a far more urgent and significant task, necessitating more innovative and integrated approaches to urban planning and development. These events have also been catalytic in advancing the political prioritisation of enhanced security and risk management strategies for many European cities, and led to calls for new approaches and mechanisms for preparing, responding to and recovering from all manner of disruptive events. In line with this, the concept of resilience – typically presented as the ability of cities to 'bounce back' or even 'bounce forward' from a disturbance or crisis event - has gained increasing attention within the field of urban planning (Davoudi, 2012; Majoor, 2015).

Within the planning domain, 'resilience', has entered into discourse with different orientations. Although the focus has traditionally been placed on environmental issues, in particular the reduction or mitigation of environmental risks such as earthquakes, floods, and global warming, there has been a rather significant increase of the fields where the concept is used. The expansion of the concept has also inevitably led to problems of certainty and clarity around what sense and meaning the concept actually assumes in urban planning discourses, as well as in its translation into planning policy and practice. Thus, there remains debate around how 'resilience' can be best operationalised within planning – with commentators asking, for example, what exactly does it mean to be resilient within an urban context (Desouza et al, 2012)?

This paper is particularly concerned with the resilience of large scale urban built infrastructure – both critical and non-critical. It seeks to explore how urban decision makers, specifically planners, can be best supported in seeking to enhance the security and resilience of such developments. Specifically, the paper focuses on the potential role technology can play in augmenting the role of urban planning in meeting this important objective. In doing so, the paper presents emerging findings from two large scale EU funded research projects – HARMONISE and RESILENS. Both projects are broadly concerned with the development of e-tools and processes to equip urban decision makers with the capabilities and relevant knowledge to enhance the resilience of existing and future urban development projects. As such, the paper first presents some of the key challenges faced by urban decision makers in seeking to operationalise the resilience concept in practice; it then focuses on the subsequent development and refinement of the HARMONISE and RESILENS concepts. The paper concludes with some emerging lessons around operationalising 'resilience' for the planning, development and operation of large scale urban built infrastructure, and the implications of such lessons for urban e-planning.