



PSS are more user-friendly, but are they also increasingly useful?



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ABSTRACT

Planning Support Systems (PSS) can provide important and much needed knowledge and support in strategy-making processes, by bringing explicit information to daily planning practices. However, as decades of academic studies show, their use is riddled with barriers and bottlenecks.

Academic studies generated insight in these bottlenecks and identified a number of directions to bridge the implementation gap. Most notably, the transparency, flexibility and interactivity of PSS needed to be enhanced to align the instruments more with the dynamic characteristics of urban strategy-making processes.

However, PSS developers do not seek instrumental use only; they seek to increase the quality of planning through this use. Accordingly, academic analysis should go beyond the user-friendliness of the PSS themselves. There are a number of studies that focus on the relations between PSS and planning quality. This paper aims to construct links between these studies of usefulness and the body of knowledge on user-friendliness. To do so, it operationalizes the characteristics of user-friendliness and the potential added value that PSS have on the qualities of planning (specifically the strategy-making phases). Consequently, the relations between these concepts are further explored.

Five experiments measured user-friendliness and usefulness indicators of different PSS and explored the relations between these two concepts. The findings indicate high user-friendliness across the board, while usefulness was only found in very limited cases and for very limited dimensions (notably Insight and Consensus). The correlations between the perceived user-friendliness and usefulness on different planning qualities reveal that for the self-reported Enthusiasm of participants all user-friendliness indicators have a positive effect. For perceived gains in Insight, only Credibility and Clarity of output have a significant positive effect.

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1. Introduction

Planning Support Systems (PSS) aim to structure the exchange of different types of knowledge in planning processes (Klosterman, 2001). Following the premise that strategic urban problems are ‘wicked’ (Rittel and Webber, 1984), do not have one optimal solution and are increasingly political and contested, PSS attempt to improve the strategic capacity and the ability of planning actors to go through a shared ‘enlightenment’ process and create ‘negotiated knowledge’ (Amara et al., 2004; Gudmundsson, 2011). PSS have the explicit aim to support and improve specified steps of the planning process (Geertman

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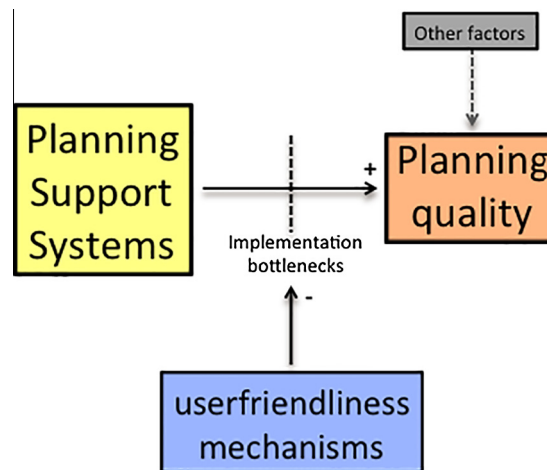


Fig. 1. Conceptual scheme of the PSS literature.

and Stillwell, 2003). To do so, explicit/codified information (often provided by these computer models) is systematically fed and shared in planning processes. PSS are mostly designed as visually attractive platforms that structure the mutual exchange of knowledge among many actors. Typically organized in a setting of one or more workshops, a group of planning actors comes together to learn about the planning issue at hand and to develop shared ideas.

Although planners ‘can obviously use all the support they can get’ (Couclelis, 2005), and large private and public funds are used to further develop the suite of tools, PSS use in planning practice still lags far behind expectations (Vonk, 2006). A mismatch persists between characteristics of the PSS and those of strategy-making processes. Planners see PSS as overly detailed and precise, mathematically complex, rigid, slow, unintelligible and not transparent enough to be compatible with the unpredictable and dynamic nature of strategy-making processes (Te Brömmelstroet, 2010; Vonk et al., 2005).

Much of the research on PSS implementation focuses on understanding and improving the user-friendliness of the instruments (Fig. 1). Although this is an important topic to address, it is crucial to realize that user-friendly PSS are a means rather than a goal. Research should expand—even principally shift its focus—on the actual goal: improving the quality of planning practice. PSS, especially those that claim to support the more strategic phases of planning, aim to be used to enlighten (Amara et al., 2004; Gudmundsson, 2011). While this requires user-friendly technology as condition, this enlightenment-goal refers to improving the quality of planning: in terms of better planning outcomes (e.g. strategies, plans, projects) or in terms of enhanced processes. The focus on improving PSS user-friendliness presumes that PSS, once user-friendly, have an intrinsic ability to improve these qualities. This assumption, often implicit, is explicitly acknowledged by Vonk (2006). Recently, several researchers started to question this assumption (Goodspeed, 2013, 2015; Pelzer et al., 2014; Pelzer and Geertman, 2013; Te Brömmelstroet, 2015).

This paper builds initial links between these two strands of PSS research, by analysing the potential relations between elements of user-friendliness and planning qualities (also sometimes referred to as performance or usefulness). It turns the main assumption of PSS research into the following hypothesis: The user-friendliness of PSS is positively correlated with its usefulness for planning practice. To test this hypothesis, user-friendliness and usefulness are operationalized into multiple dimensions. A research project that conducted five consecutive experiments with different PSS provides the empirical data set for analysing these dimensions. The paper closes with an assessment whether user-friendliness and usefulness are correlated, and, if yes, on which dimensions. This leads to potential lessons for what PSS developers should focus on and where there are interesting research directions.

2. PSS user-friendliness and usefulness

Imagine the following two situations:

1. You have a coffee machine at home that has a good balance between ease of use (e.g. it fits your table well; it is easy to operate) and its coffee brewing qualities.
2. You are a regular visitor of a particular coffee bar, where you wait in line to be served by a barista who operates a sophisticated coffee machine. You pay a premium price for your cup because you expect that this process gives you a very good coffee.

Hands-on user-friendliness of the coffee machine is obviously more important in the first situation. In the second case the quality of coffee is key, especially if you can choose from different bars in the vicinity. In that case, but only when the coffee is good enough, you easily accept that you need to rely on an intermediate person who operates the machine. In other words,

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