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Research paper

# Exploring research priorities in landscape architecture: An international Delphi study

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## HIGHLIGHTS

- This study lays the foundation for a future landscape architecture research agenda.
- Research into 'human dimensions' and 'built environments' is most demanded.
- Both domains are considered important for academia and useful for practice.
- Differences between experts from different continents were identified.
- The specifics of the research agenda may require regional adaptations.

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## ABSTRACT

Many of the world's major challenges require responses that are embedded in landscape planning, design, and management. To date, however, it is unclear which research domains should form the core of a future landscape architecture research agenda. This study explored which domains landscape architecture experts prioritise as most important for landscape architecture as a research discipline and which domains they prioritise as most useful for landscape architecture practice. A Delphi study was conducted with an international sample of landscape architecture experts from academia and professional practice. Results suggest that research into 'human dimensions of planning and design' and 'built environments and infrastructure' is desirable from an academic and practice-oriented view. Additionally, the domains 'global landscape issues' and 'green urban development' seem to be important for landscape architecture as a research discipline. These four domains could thus form the core of a future research agenda. Some differences appeared to exist between academic and professional experts as well as between experts from different continents. This suggests that a future research agenda should allow for refinements according to specific regional needs. For the first time, landscape architecture is now in possession of a foundation upon which a fascinating research agenda may be built. Additionally, pertinent discussions are expected to contribute to the continuing maturation of landscape architecture as a discipline that does not only rely on other established research disciplines, but also builds its own body of knowledge.



## 1. Introduction

Many of the world's major challenges, such as demographic and lifestyle changes, urban and rural transformation, climate change and energy needs, to name only a few, require responses that are embedded in landscape. Landscape architects are experts in providing such responses and, in doing so, have been successful in practically applying methods of landscape planning, design and management. But, one may ask, how and to what extent were such methods also applied to the building of a body of knowledge that is becoming fundamental to informing practice? Compared with other scholarly disciplines, landscape architecture is not always recognised as a research discipline (Deming & Swaffield, 2011; Gobster, Nassauer, & Nadenicek, 2010; LaGro,

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1999; Milburn, Brown, & Paine, 2001; Tai, 2003). During the last couple of decades, landscape architecture has developed an increasingly stronger research focus but, compared with its long and rich history of professional practice, its own research culture is still underdeveloped (Van den Brink & Bruns, 2014). There are ongoing debates about the specificity of landscape architecture theory and methodology (Ward-Thompson, 2010), as well as what constitutes research in relation to design (e.g. Lenzholzer, Duchhart, & Koh, 2013; Milburn & Brown, 2003). Additionally, not all landscape architects who conduct research feel the need to publish in (international) peer-reviewed journals (Gobster et al., 2010).

If landscape architecture is to reach greater academic distinction, it is important that more research is conducted to create a sound evidence base that helps to justify landscape planning, design, and management decisions (e.g. Deming & Swaffield, 2011). As Brown and Corry (2011, p. 328) put it, it is time for 'the deliberate and explicit use of scholarly evidence in making decisions about the use and shaping of land'. Obviously, developing a sound evidence base will be more effective when there is a clear focus regarding the research domains which should be considered core to landscape architecture. Research domains, also referred to as domains of inquiry or knowledge areas, are overarching themes in which research into specific and related topics occurs. As shown by Deming and Swaffield (2011, p. 25), many different domains exist in landscape architecture, such as 'human and environment relationships', 'built environments', and 'values and ethics' to name only a few. This wide range of domains indicates that landscape architecture research is fragmented. As such, the core of landscape architecture research is still not clearly defined (Van den Brink & Bruns, 2014). This is a shortcoming that should be of great concern to landscape architects, academics and professionals alike, because it may restrict potential future contributions to solving pressing landscape challenges. The question, then, is which domains should form the core of a future landscape architecture research agenda? No inquiry into this question seems to exist, apart from Chen (2013) who showed that North American practitioners consider additional research into 'construction techniques', 'water resource management', and 'sustainable design' to be most helpful.

In the current study the Delphi method was used to systematically and interactively explore research priorities in landscape architecture by consulting landscape architecture experts from academia as well as from professional practice. Both groups are vital for a discipline that is highly practice-oriented and in search of an enhanced knowledge base. Within landscape architecture, however, there is a noticeable divide between academia and professional practice (Gobster et al., 2010). Consequently, research domains that are important from an academic perspective may not necessarily be considered useful in professional practice. To bridge the gap between academia and professional practice, this study addressed the following two research questions:

(1) Which research domains do landscape architecture experts prioritise as *most important* for landscape architecture as an academic discipline?
(2) Which research domains do landscape architecture experts prioritise as *most useful* for landscape architecture practice?

By answering these questions a future research agenda may be developed, one which lays the foundations for evidence based landscape architecture.

## 2. Methods

### 2.1. The Delphi method

The Delphi method was developed in the 1950s by Dalkey and Helmer (1963) and is considered particularly suitable for allowing experts to achieve agreement on certain topics. A Delphi study consists of at least two rounds of inquiry. In round 1, experts give their opinion on the topic of interest using a standardised questionnaire. To prevent group pressure, experts remain anonymous and communication among them is avoided. Instead, the researcher provides controlled opinion feedback in the form of a summary of findings from the previous round. In round 2 experts fill in a more or less adapted version of the first questionnaire. Based on the feedback provided, experts may alter their opinion. This procedure continues until a certain level of agreement among the experts has been achieved or until a pre-specified number of rounds (usually not more than four) has been completed (Hung, Altschuld, & Lee, 2008; Keeney, Hasson, & McKenna, 2006; Landeta, 2006; Linstone & Turoff, 1975; Powell, 2003). In this study the Delphi method was used to allow a sample of landscape architecture experts to achieve agreement on the most important research domains for landscape architecture as a research discipline and the most useful domains for landscape architecture practice.

### 2.2. Expert sample

To ensure that a wide range of views is included in a Delphi study, the recommendation is to assemble a heterogeneous sample of experts (Keeney, Hasson, & McKenna, 2001; Powell, 2003). For the current study it was decided to sample landscape architecture experts from academia and professional practice to acquire both academic- and practice-oriented views. Additionally, experts from different parts of the world may have different views. It was therefore decided to sample landscape architecture experts from six continents: Africa, Asia, Australia, Europe, North America, and South America.

A convenience sample consisting of landscape architecture academics and professionals from different parts of the world was assembled. To prevent selection bias, criteria for including experts need to be established before a Delphi study begins (Keeney et al., 2006). For this study it was decided that experts representing academia should hold a position at an academic institution and, to ensure the inclusion of academics who were actively engaged in research, should have published at least one paper on the subject of landscape architecture in an international peer-reviewed journal between the years 2008 and 2013. It was further decided that experts from professional practice should hold a position at a professional organisation (i.e. private companies and public institutions involved in the practice of landscape architecture) and, to ensure the inclusion of high quality professional experts, should have been jurors or winners of competitions that were administered or promoted by the globally active International Federation of Landscape Architects (IFLA), a sub-group of IFLA (e.g. IFLA Asia-Pacific Region), or a national professional organisation that is affiliated with IFLA (e.g. the Colombian Society of Landscape Architects). To be able to access an adequate number of competitions and corresponding jurors and winners, competitions between the years 2003 and 2013 were included.

Search strategies were developed and applied to find potentially suitable experts from all six continents. Initially, names of potentially suitable academic experts were obtained from the 2012 conference proceedings of the European Council of Landscape Architecture Schools (ECLAS) and the Council of Educators in Landscape Architecture (CELA). However, because these two sources mainly yielded experts from Europe and America, the