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Bridging Architectural Cognition Research into Practice:

Establishing the barriers and opportunities to integrating knowledge from the cognitive sciences into design

Lara Gregorians¹, Azrin Jamaluddin¹, Leonel Aguilar², Freyaan Anklesaria^{1,3}, Raphaël Baur^{4,2}, Yuqin Zhong^{1,2}, Panagiotis Mavros⁵, Zdravko Trivic³, Christoph Hölscher²

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Introduction

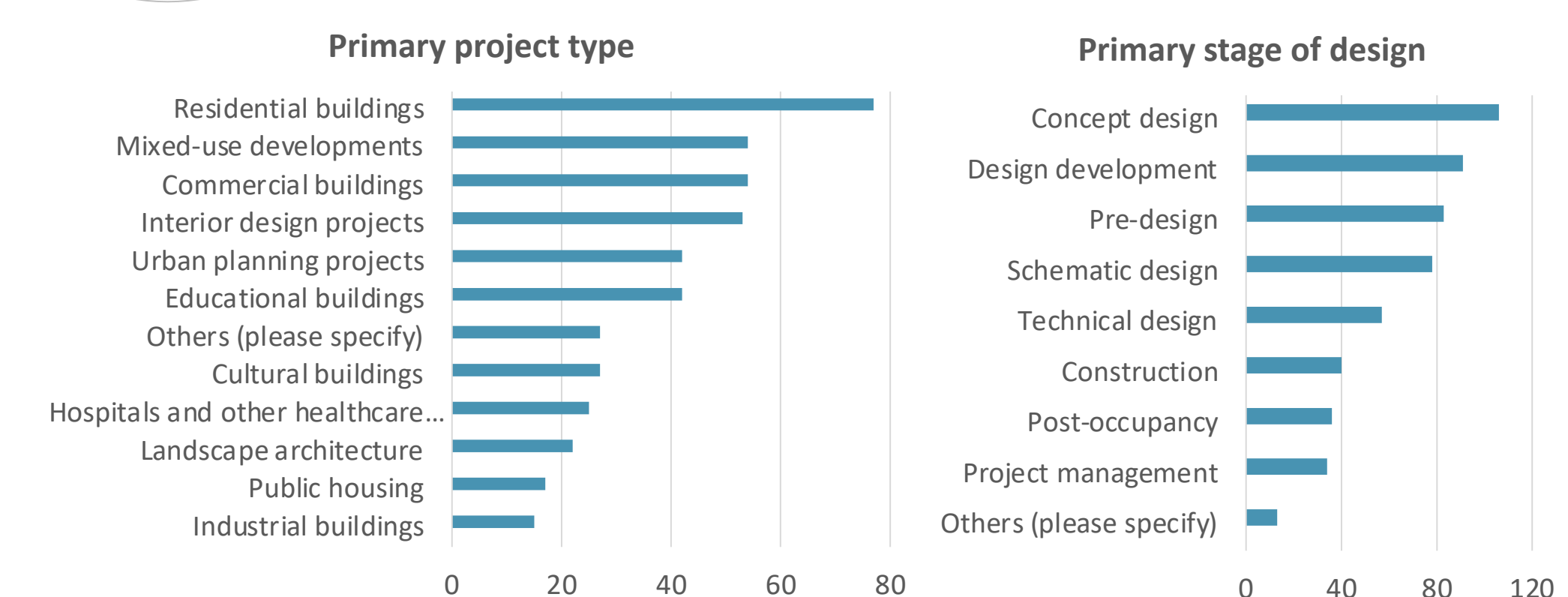
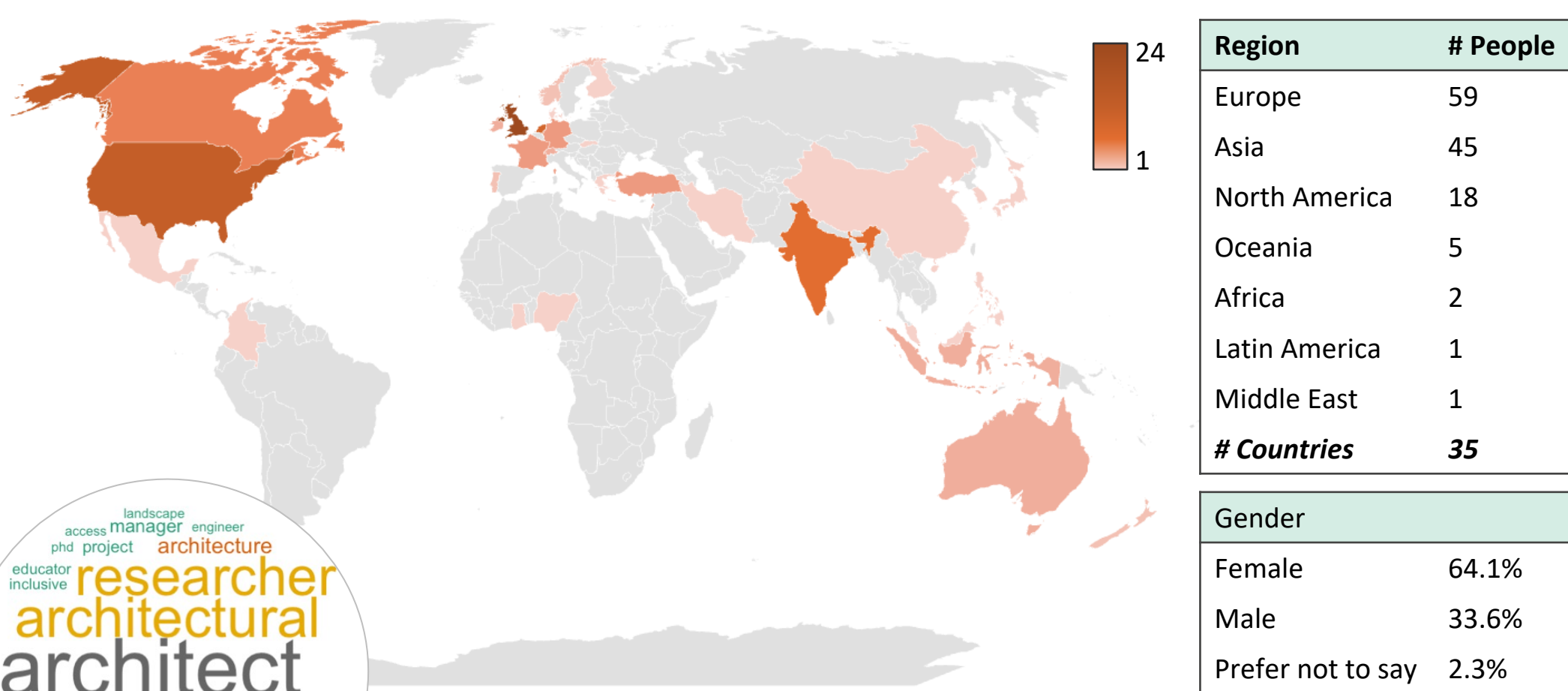
- Design challenges are growing in complexity, and architects are asked to anticipate user needs and behaviours within this complexity, substantiating their decisions with evidence and tangible outcomes.
- Luckily, there is a wealth of research/tools from scientific domains including the cognitive and behavioural sciences that speak to theoretical questions on how design impacts behaviour, cognition and emotion.
- Yet, it's been difficult to successfully integrate interdisciplinary knowledge about human experience into design practice – to capitalise on research from fields like spatial cognition, neuroarchitecture, and space syntax.
- This poster investigates this divide between research and practice.

We ask: *how do designers integrate knowledge from the behavioural & cognitive sciences on human experience into design processes, and what are the barriers to this?*

Methods

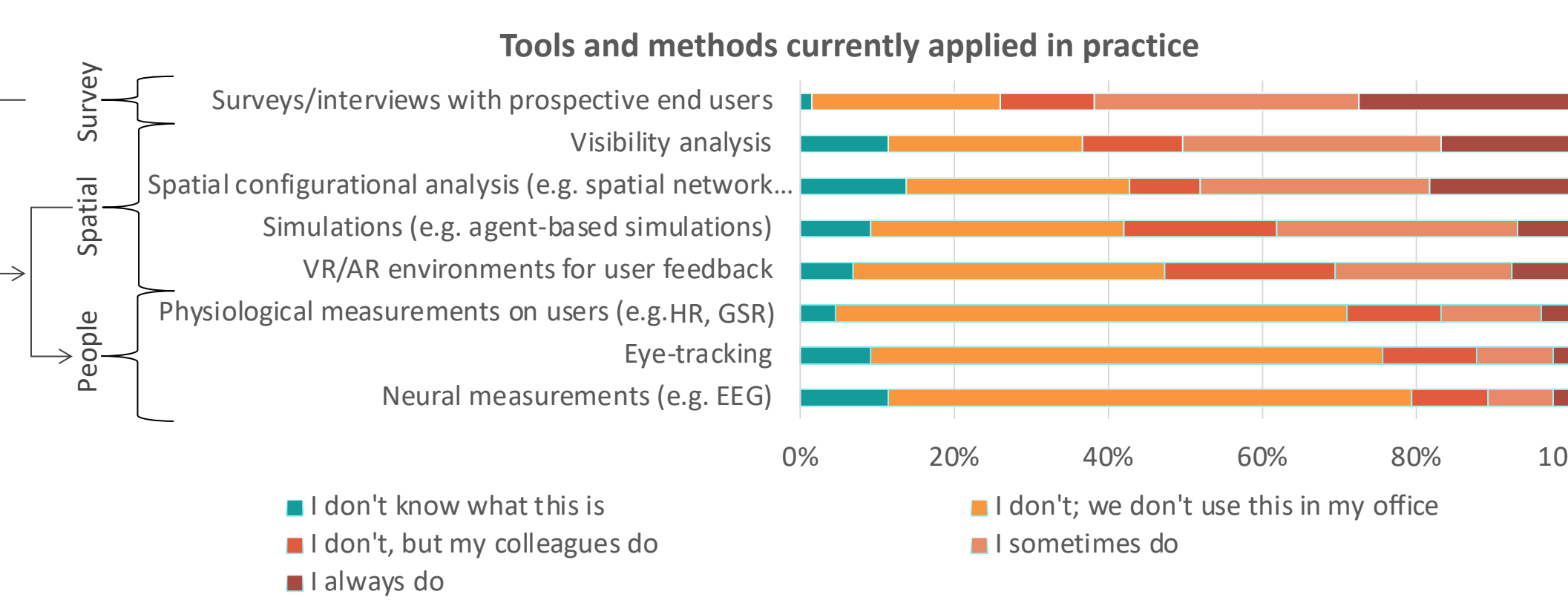
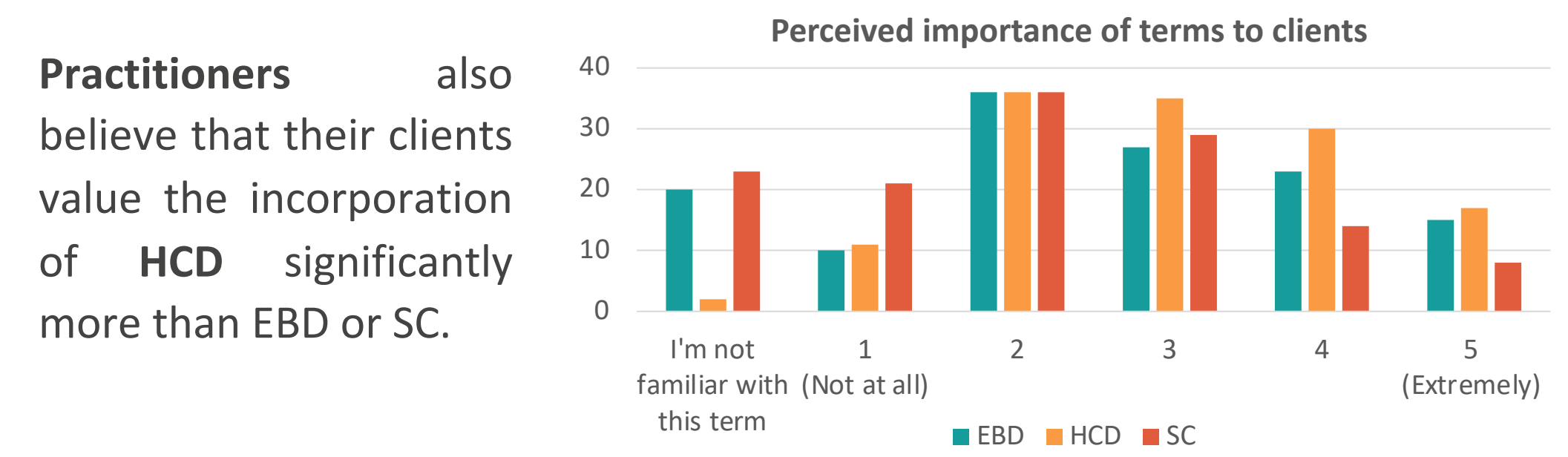
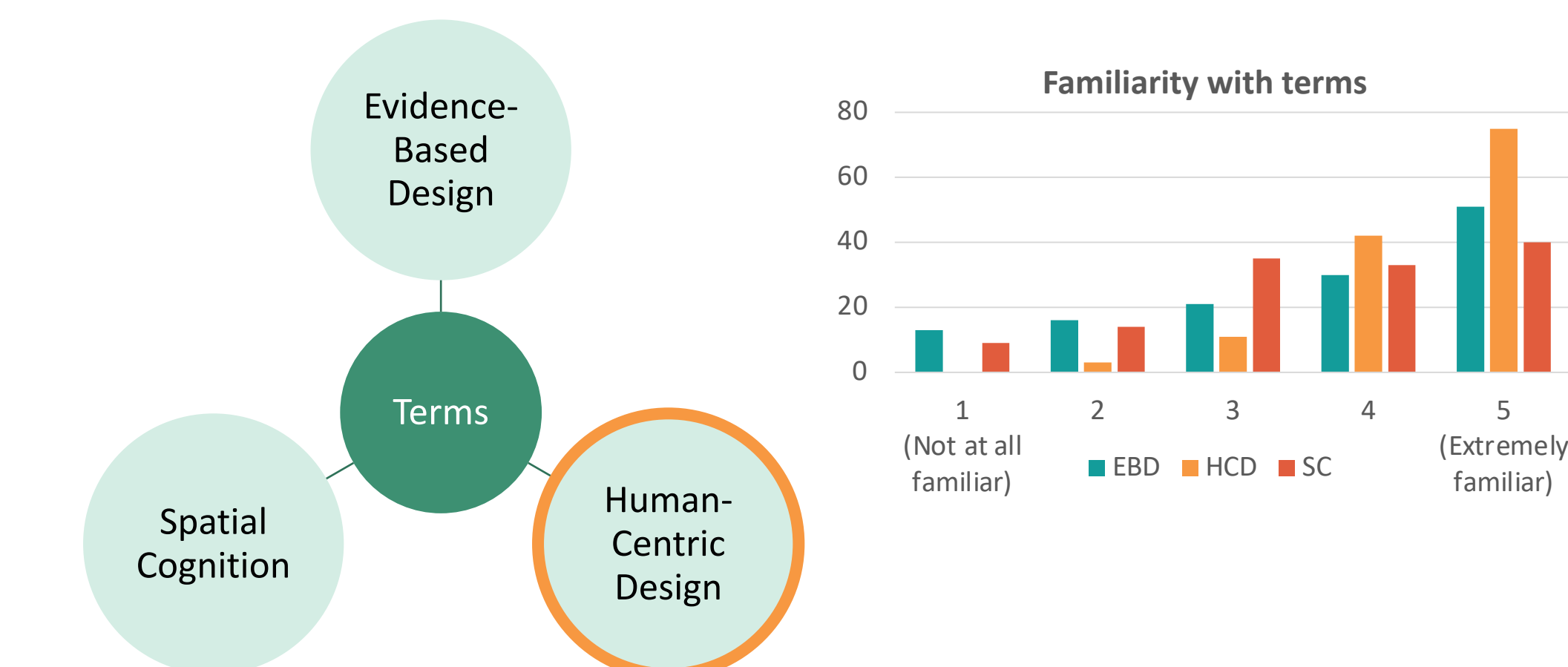
- Online survey for all built environment professionals worldwide.
- Duration of 10-20 minutes.
- N=136.
- Analyses: we look at the frequency of votes for different options within multiple choice questions, and use significance tests and pairwise comparisons [denoted by brackets on bar charts] to see if some multiple-choice selections are selected significantly more often than others. Logistic regressions see if responses can be predicted by criteria like stage of design.

Demographics



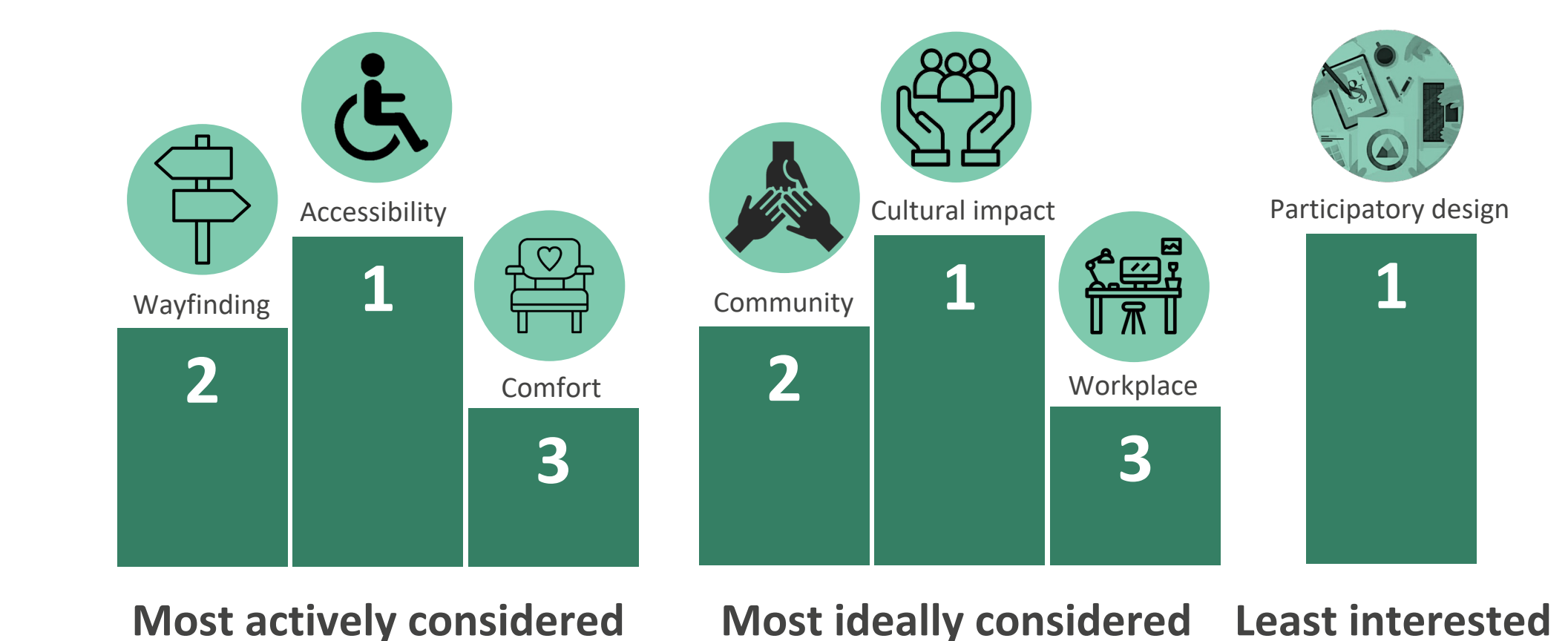
Current knowledge state

HCD is rated significantly higher for familiarity, usage in practice and importance than EBD or SC.



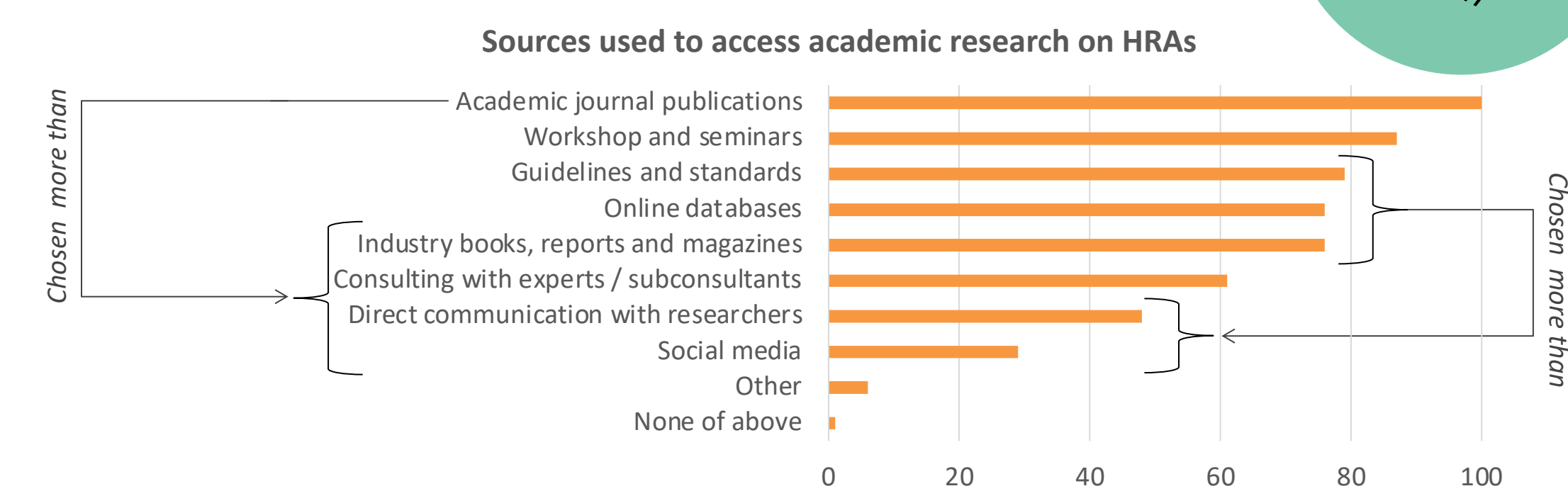
Surveys are used more than spatial tools, which are used more than people measures.

Interest in Human-Related Aspects (HRAs) of design

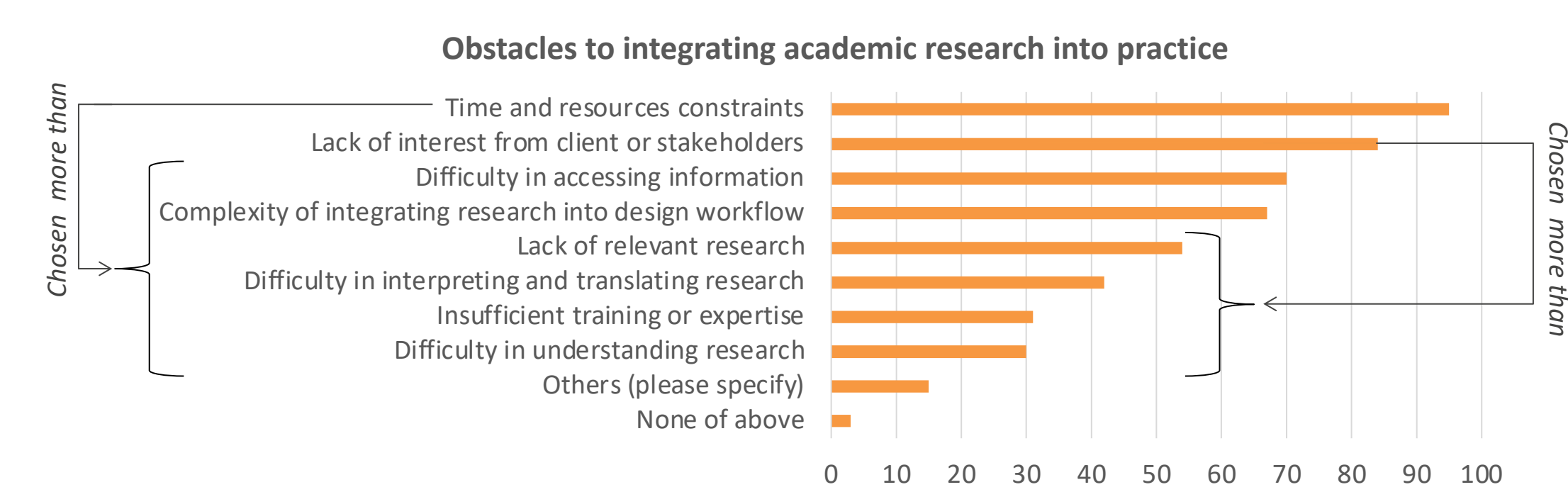


Results

Academic research

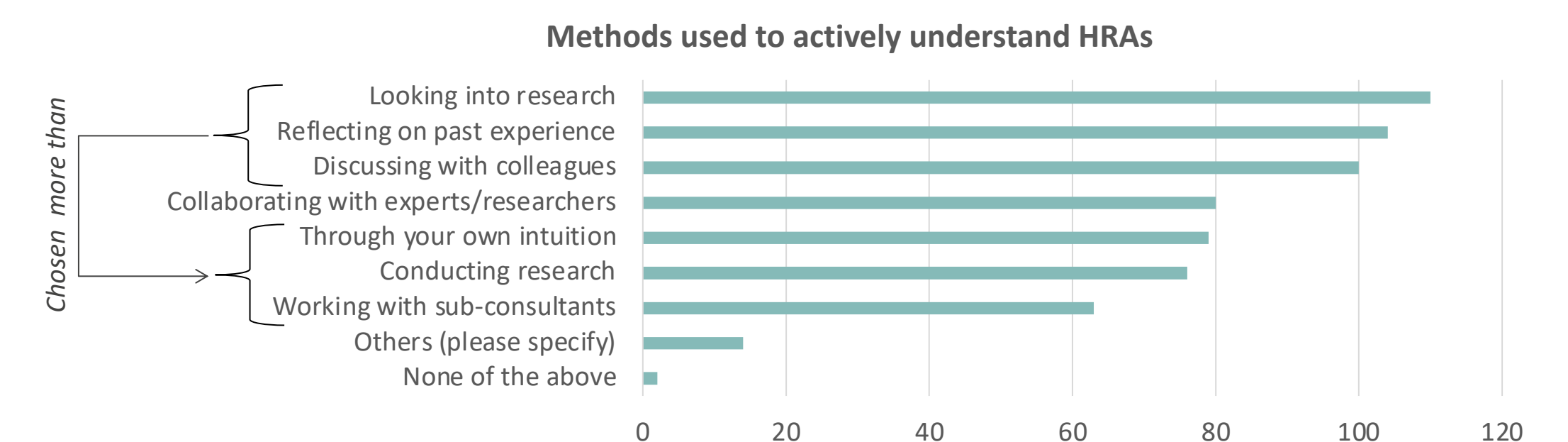
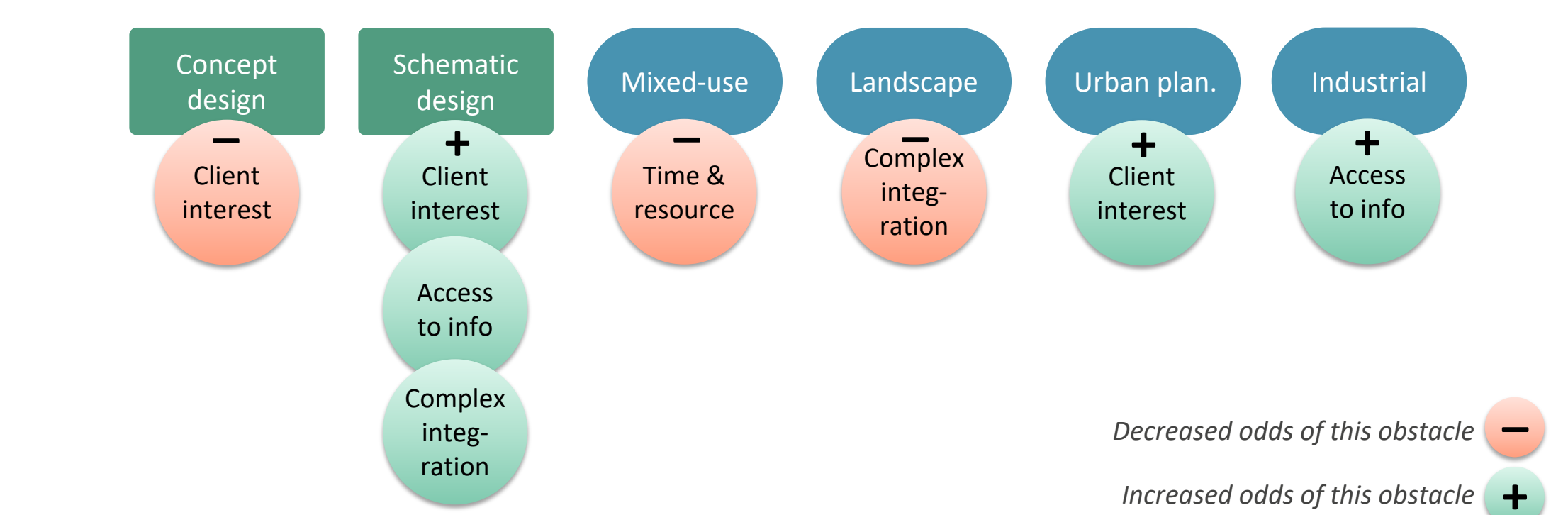


Reading materials are chosen more often than communication methods.



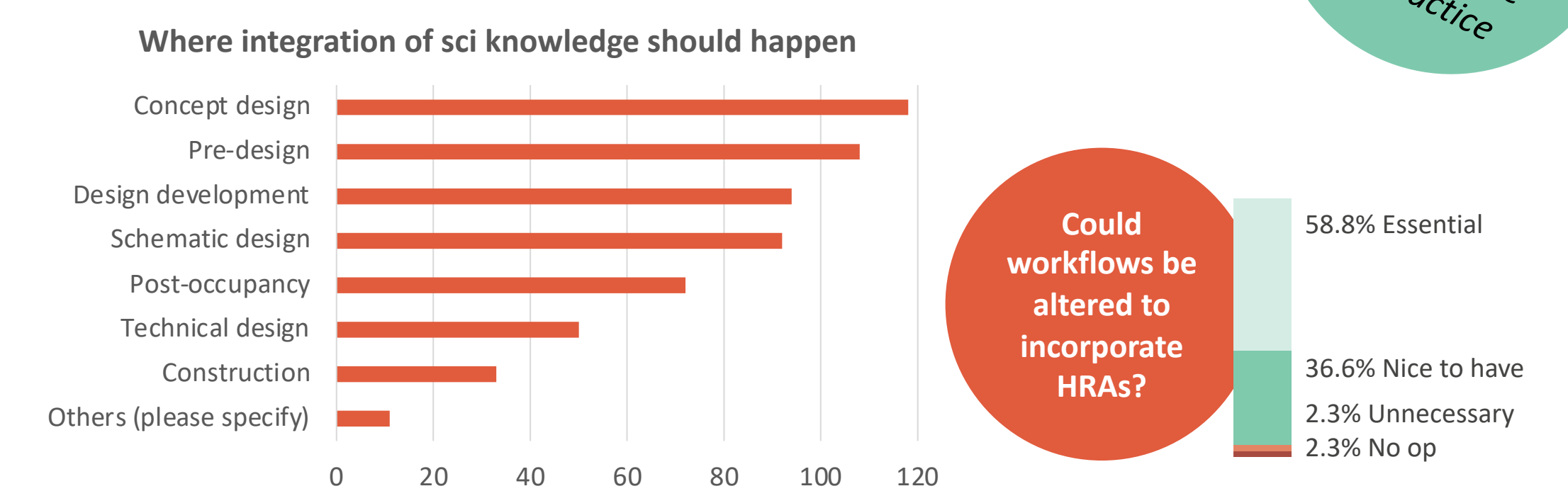
Time/resources, followed by lack of client interest, had a higher proportion of votes than options representing issues with research itself and its application.

The key obstacles to integrating academic research into practice can also be predicted by the stage of design or project type that the participant works on.

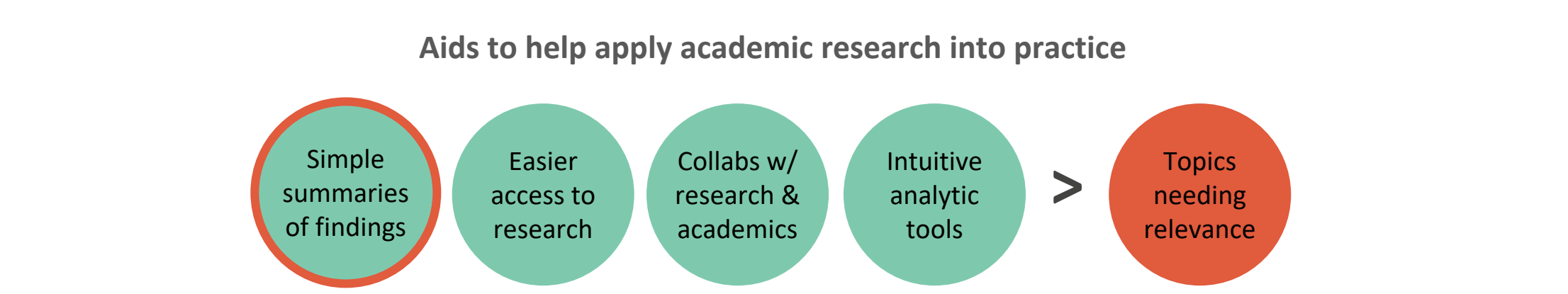
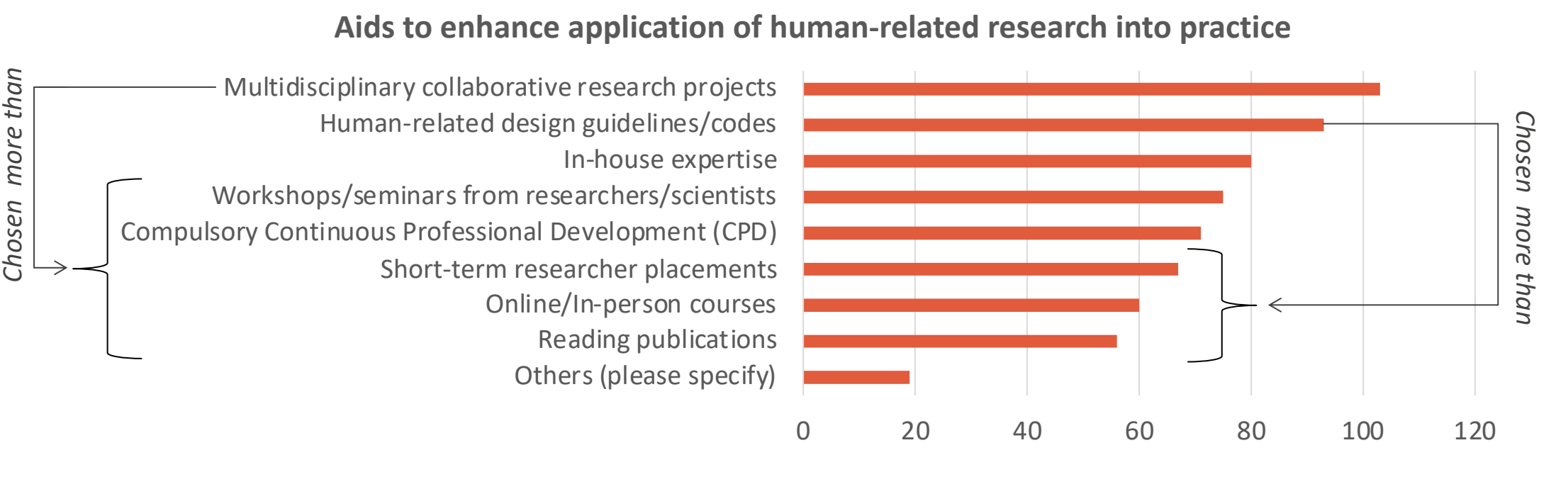


Practitioners look into research most often to better understand psychological and emotional wellbeing, and least often to understand workplace performance.

Future planning



Preference for integration to happen at early design stages.



Conclusion

Human-Centric Design is the more familiar, useful and important term. Methodologically, 'people measures' are still less integrated into practice than 'spatial measures'. But there's desire to learn.

Interest in considering HRAs: How? Looking into research, Reflecting on experience & Discussing with colleagues > Conducting research, Working with consultants or Intuition. Which HRAs are explored through research? Most: Psychological and emotional wellbeing; Least: Workplace performance.

Obstacles to academic research – varies by project type and design stage: Time & resources and Client interest more so than issues with the research itself or needing knowledge for its application.

Integration of disciplines is wanted → amending workflow at early design stages. Multidisciplinary collaborative research projects and Human-related design guidelines are favoured over short-term learning opportunities. Academic research primarily needs summarised findings in simpler formats – not a problem of topic relevance.

Take part in the survey here:

