

EVALUATING THE LEAN-ENABLING COMPETENCIES OF CLIENTS

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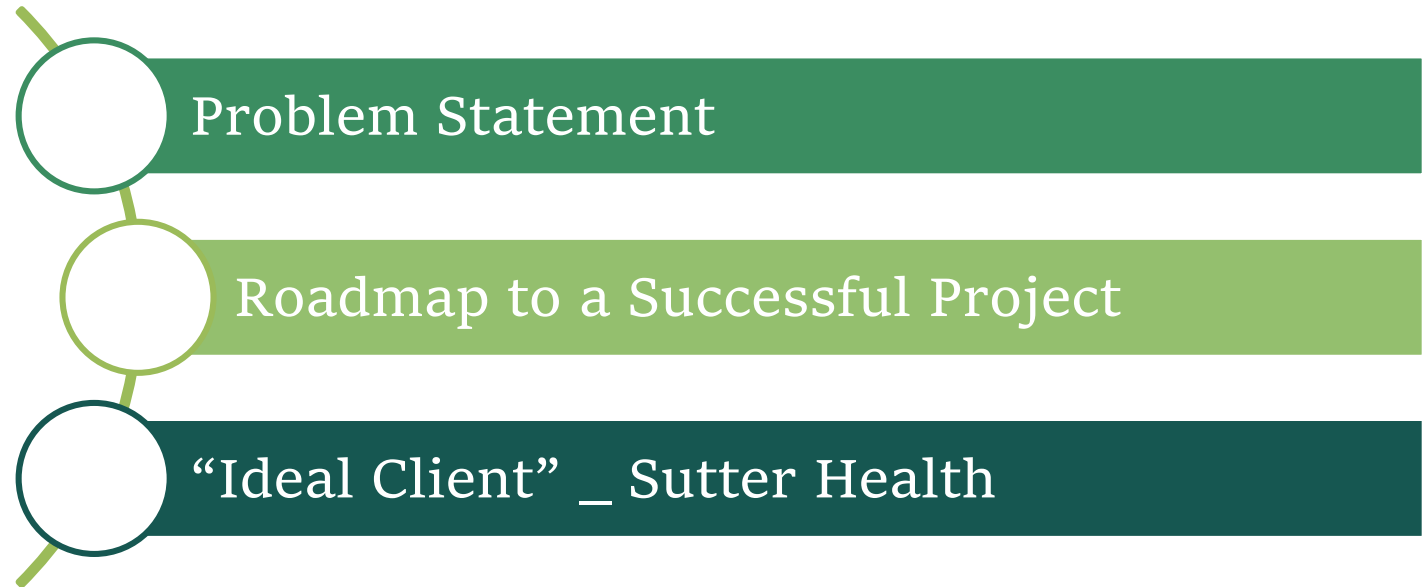
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Outline



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INTRODUCTION



Problem Statement

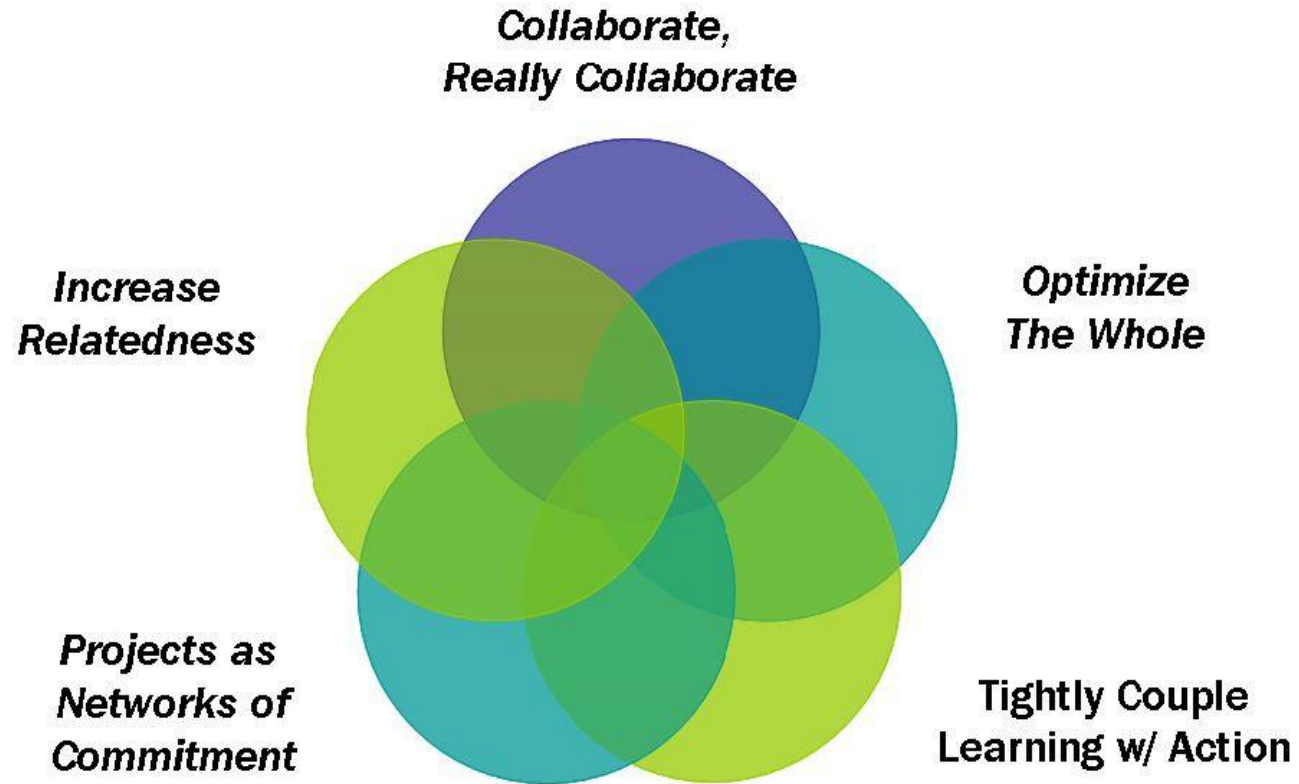


“ While Lean Construction is becoming more and more popular with construction companies, client-side organizations are not catching up at the same pace ”

Roadmap to a successful Project



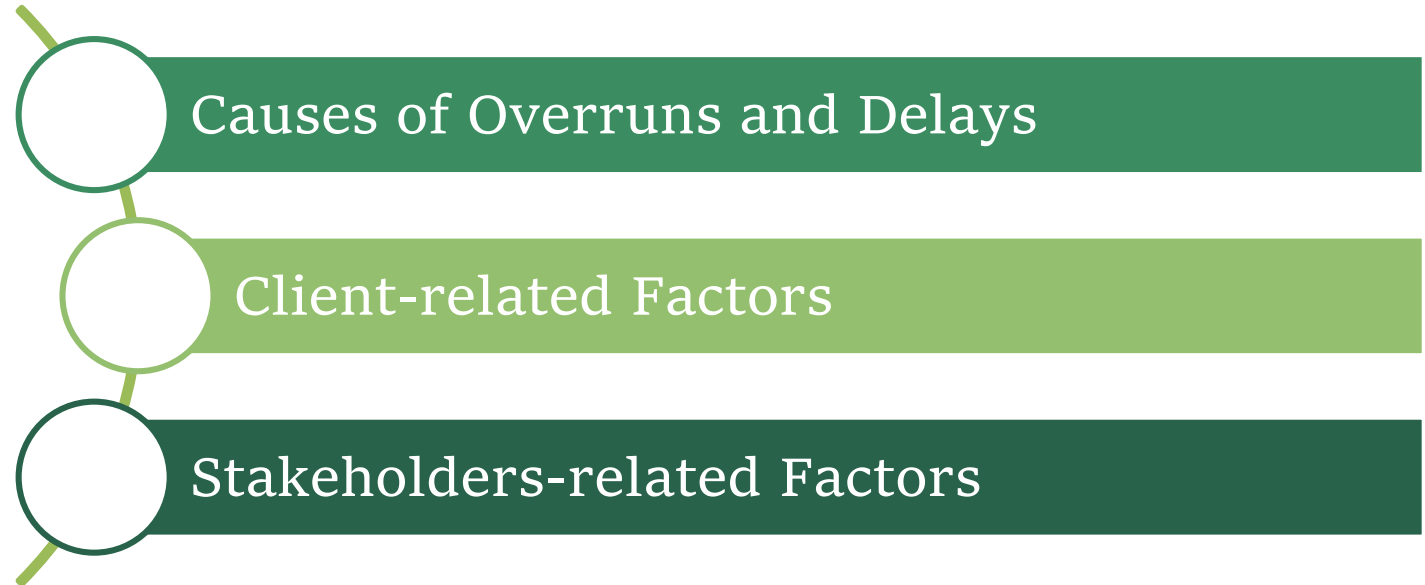
The Ideal Client _ Sutterhealth



The 5 Big Ideas

2

CLIENT ROLE AND IMPACT



Causes for Overruns and Delays



Different Aspects Studied

Table 1: Client-Related & Stakeholders-Related Aspects Tackled in the Survey

	Key Aspects	Description	Lean Principles/Lean Tools/Related References
Client-Related	Knowledge & Involvement	<ul style="list-style-type: none"> Level of knowledge and experience of clients Level and kind of involvement in the project <p>These questions will give insight on the client's wisdom, know-how, commitment and responsibility towards the project.</p>	<ul style="list-style-type: none"> Lean Principle 12: "Go and see for yourself to thoroughly understand the situation" (Liker 2005). In their study on owner characteristics that affect the project delivery system, Liu et al (2014) indicated that among the 14 factors that mostly appear in the literature, the top 3 are: responsibility, owner's experience with similar projects, and owner's willingness to be involved.
	Requirements & Transparency	<ul style="list-style-type: none"> Clarity of the scope of work as provided by the client Reasonability of deadlines and requirements Openness to suggestions and consistence with required standards <p>These questions will give insight on how clients perceive the complexity of projects and whether they are willing to collaboratively shape their requirements.</p>	Some of the most important causes of delays related to owners in construction projects are the unrealistic durations provided by the owner as well as the insufficient time provided in order to study whether his requirements are feasible (Marzouk and El-Rasas 2014).
	Decision Making	<ul style="list-style-type: none"> Responsiveness in issuing approvals and making critical decisions Promoting involvement of key stakeholders in making these decisions 	Lean Principle 13: "Make decisions slowly by consensus, thoroughly considering all options; implement decisions rapidly" (Liker 2005).
	Value	<ul style="list-style-type: none"> Importance of certain factors with respect to the client including: short-term incurred cost, quality of the project, end user satisfaction, sustainability and LEED, the impact of the project on society, and considering innovative approaches. Learning from unsuccessful decisions and continuous improvement <p>These questions will give insight on what owners perceive to be valuable in a project.</p>	<ul style="list-style-type: none"> Lean construction revolves around maximizing the value for the client (Koskela et al. 2002). Integrated Project Delivery method shifts the bulk of the effort towards the design phase as opposed to being in the construction phase in traditional delivery methods, which implies additional cost to the client in earlier stages of the project (AIA 2007). Lean Principle 1: "Base your management decisions on a long-term philosophy, even at the expense of short-term financial goals" (Liker 2005). Lean Principle 14: "Become a learning organization through relentless reflection and continuous improvement" (Liker 2005).
Stakeholders-Related	Collaboration & Relationships	<ul style="list-style-type: none"> Promoting/Encouraging collaborative meetings between stakeholders, the integration of design and the consideration of alternatives through involving different stakeholders, especially contractors, in early phases of the project. Level of control exercised by the owner in handling and managing the relationships between stakeholders 	<ul style="list-style-type: none"> Sutter Health approach to Lean Project Delivery is based on the Five Big Ideas, one of which is "Collaborate, really collaborate" (Lichtig 2005). This collaboration is meant to take place between all key stakeholders and through all phases of the project including design and planning, not just execution, in order to achieve "constructible, maintainable, and affordable design" (Lichtig 2005). Lean Principle 11: "Respect your extended network of partners and suppliers by challenging them and helping them improve" (Liker 2005).

Client-related Factors

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SURVEY TO ASSESS CLIENT PERFORMANCE



Middle East Status-Quo

Construction Upsurge

117 major ongoing construction projects
Total cost of 1 trillion US dollars



Towering ambition: Dubai's real estate resurgence means the UAE is a growth market



Construction
upsurge



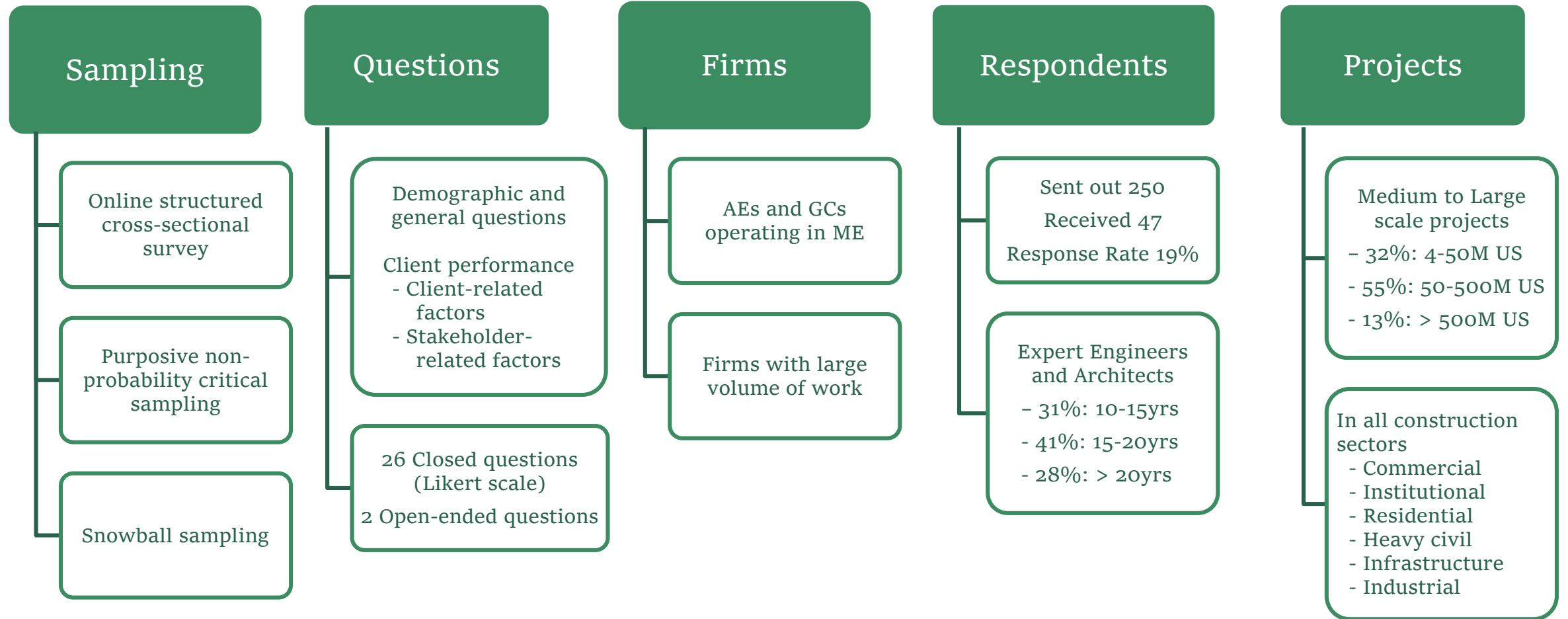
Cultural Barriers

Lean Implementation

Technical and Cultural Barriers

- Inertia and Corruption
- No team orientation
- Uncertainty avoidance
- Traditional Project Delivery Methods
- Only 20% of AECs use BIM, “Just an advanced Autocad tool”

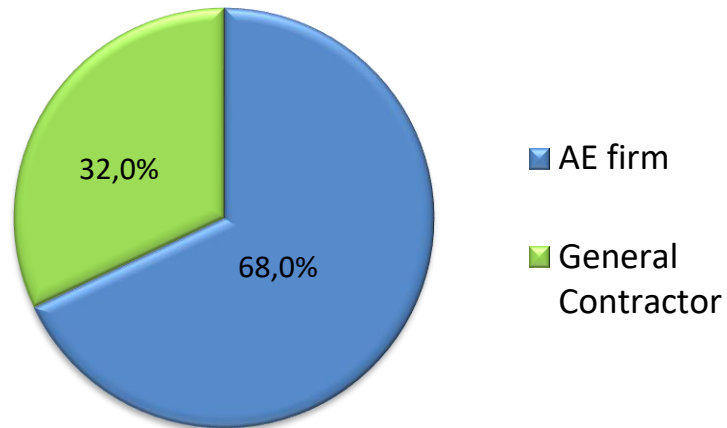
Survey Methodology



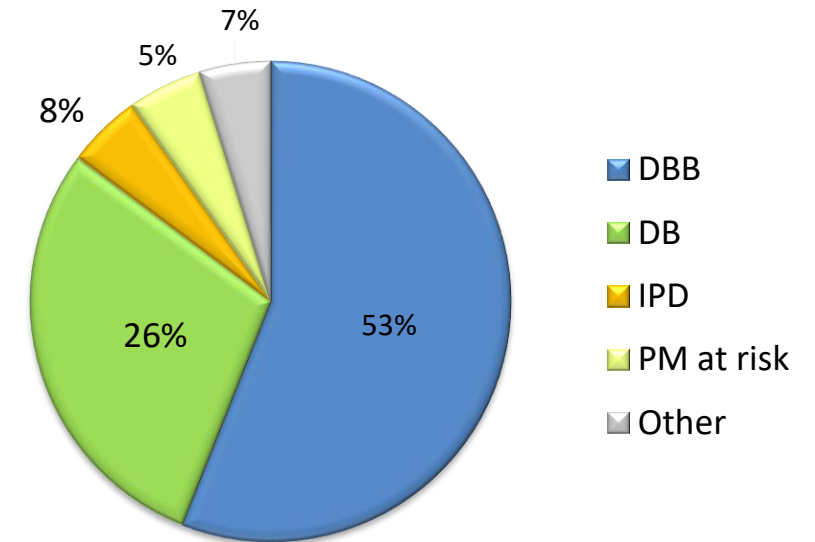
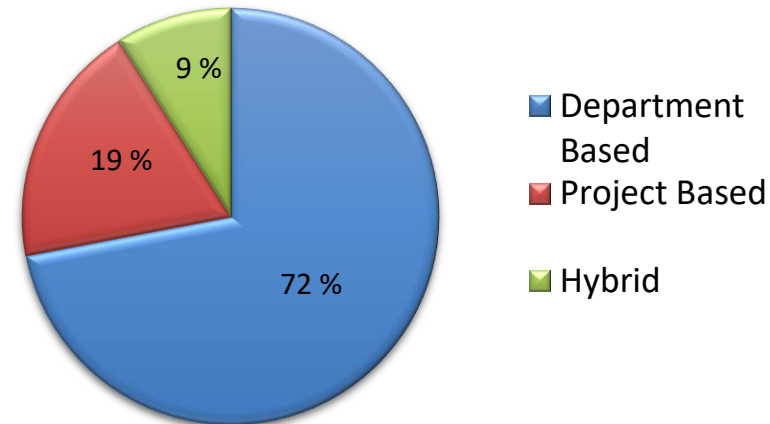
Results and Discussion

Respondents, their Firms and Selected Projects (1/2)

Firms
Surveyed



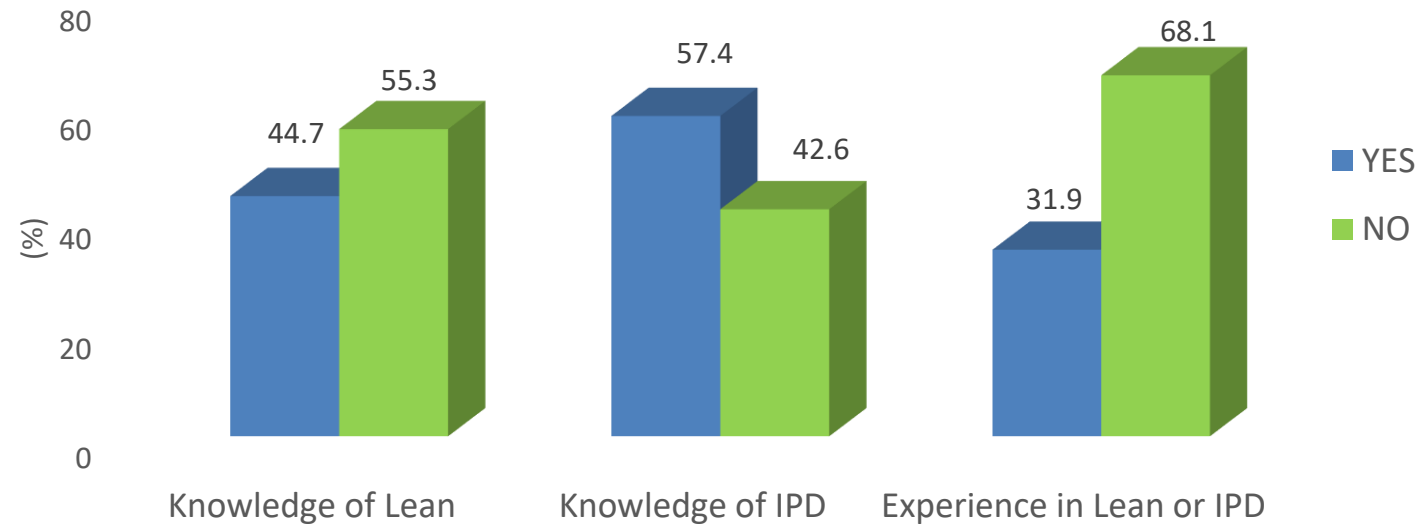
Firms
Structure



Project Delivery Methods

Results and Discussion

Respondents, their Firms and Selected Projects (2/2)

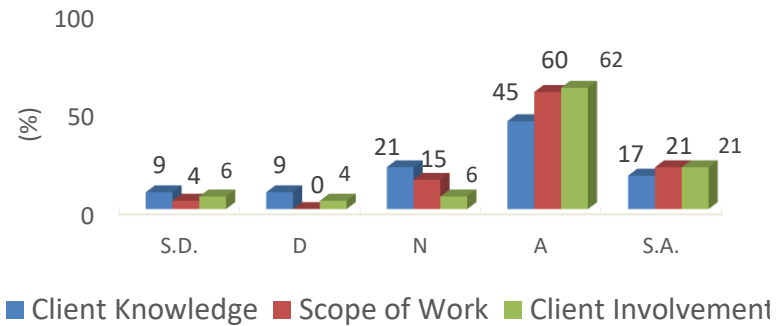


Respondents Knowledge of Lean and IPD

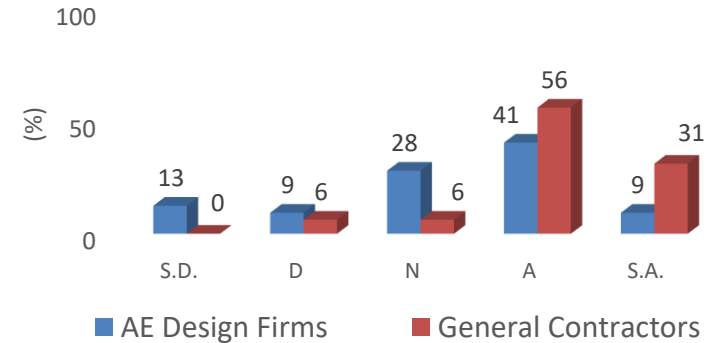
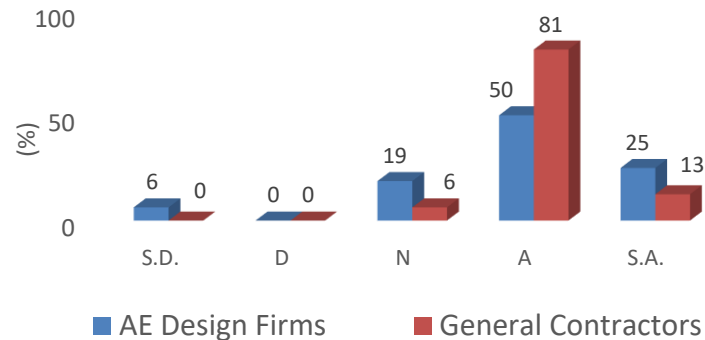
Results and Discussion

Knowledge and Involvement of Owners

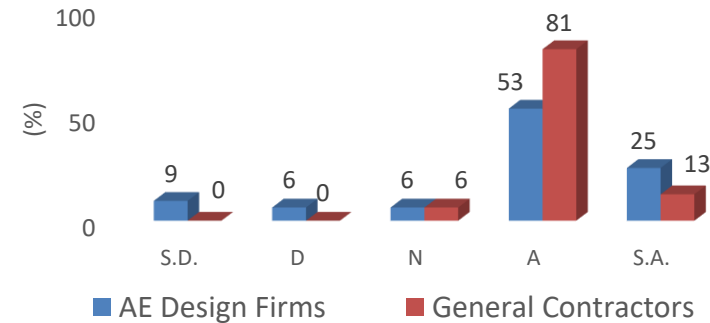
Summary of the three owner metrics



Scope of Work Required from AEC Firms as Specified by Client was Clear



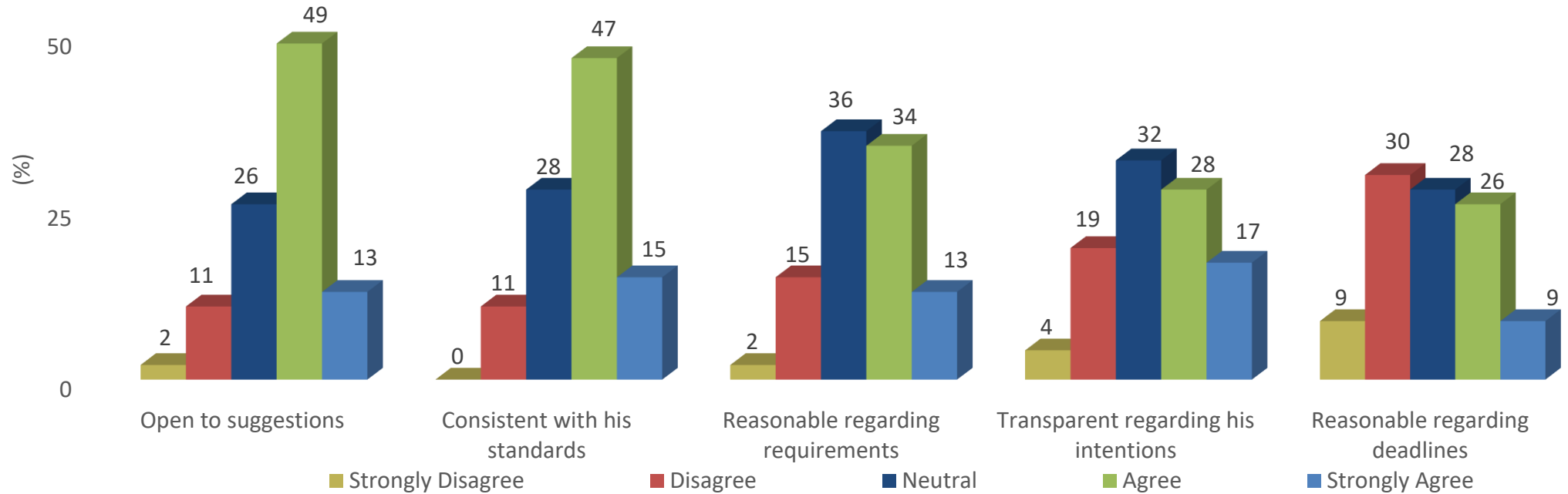
Client was Informed & Knowledgeable about Similar Projects



The Client/Client Rep. was Actively Involved in his Project in all Phases

Results and Discussion

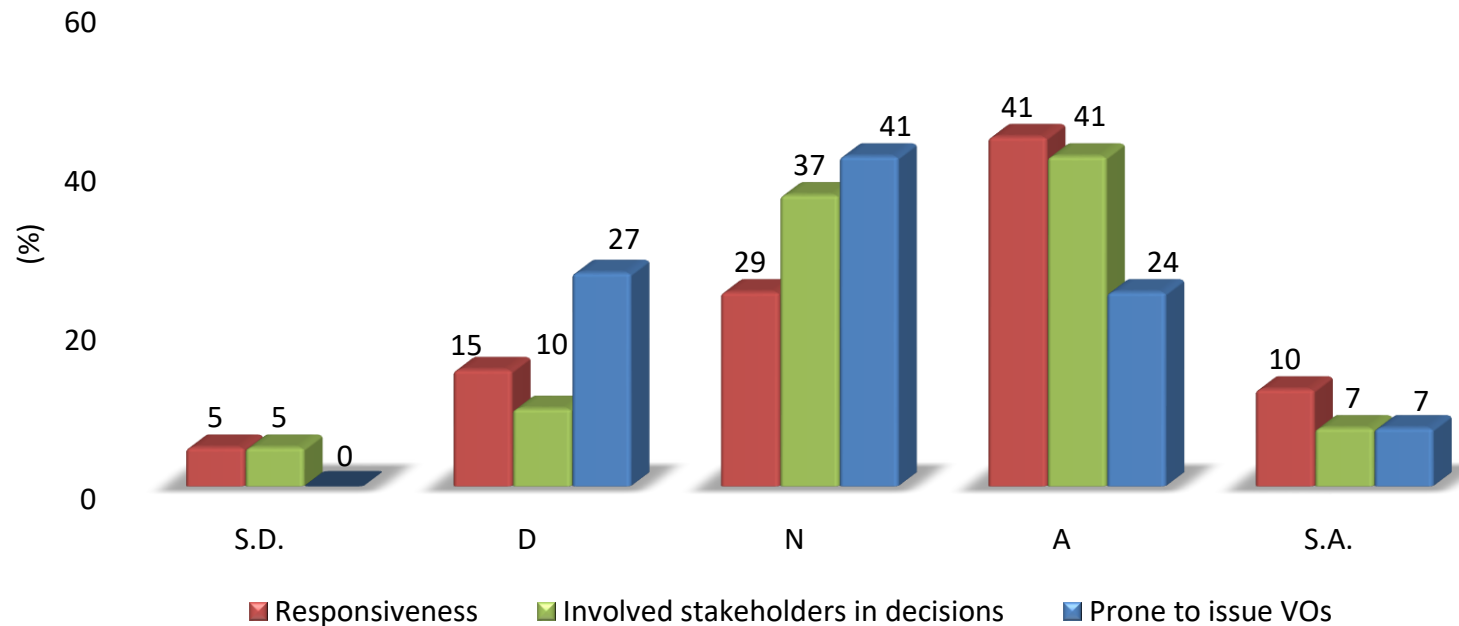
Client Requirements and Transparency



The Clients Attitude and Behavior as Seen by AEC Firms

Results and Discussion

Owner's Decision Making Skills



Among the respondents who said the client was well informed, 62% indicated that he was responsive in taking decisions.

Owner's Decision Making Skills

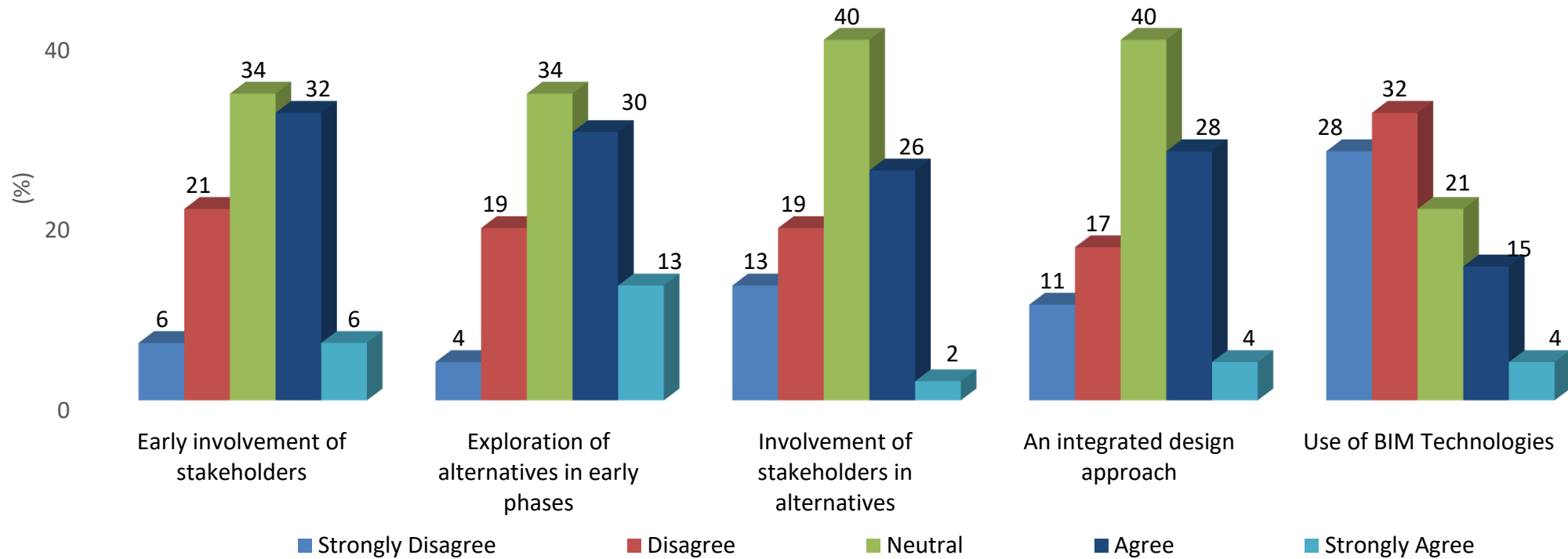
Results and Discussion

Owner's Values

Factors ranked according to their importance to the Client	Mean Rate (/5)
Quality of the project	4.26
End user satisfaction	4.09
Short-term incurred costs	4.02
Building long-term relationships with stakeholders based on mutual trust	3.36
Considering innovative approaches	3.30
Learning from design/construction errors as well as from unsuccessful decisions for continuous improvement	3.28
Impact of the project on society	3.15
Sustainability and LEED design	3.02

Results and Discussion

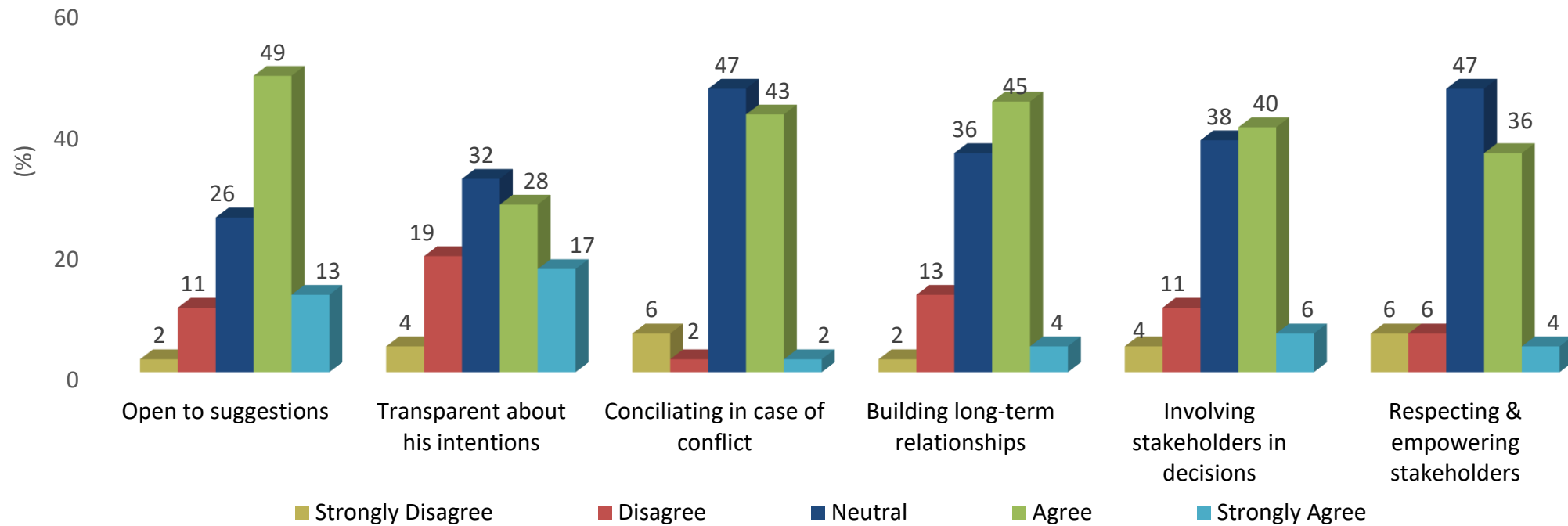
Collaboration and Relationships (1/2)



The Clients Promotion of Collaboration

Results and Discussion

Collaboration and Relationships (2/2)



Client and Stakeholders Relationships

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CONCLUSION AND RECOMMENDATIONS

Conclusion

Although Clients play a central role in the project success, current literature does not widely discuss the issue of clients. Emphasis is rather placed on the implementation of lean principles and tools within design companies or contracting firms.

Survey Conclusions



Owners in the ME were regarded positively by AECs

They are knowledgeable, well informed and actively involved in their projects



Owners persist in taking unilateral decisions

Do not involve stakeholders nor enforce a team decision making process



Some owner practices are in line with lean principles

They value quality and end user satisfaction



Most owner ways are not aligned with lean principles

Focus on short-term financial goals

Do not value innovation, set-based design nor continuous learning

Do not enforce collaboration measures

Recommendations

In general, owners are:

- unaware of lean construction
- do not have a deep understanding of its underlying principles nor its benefits

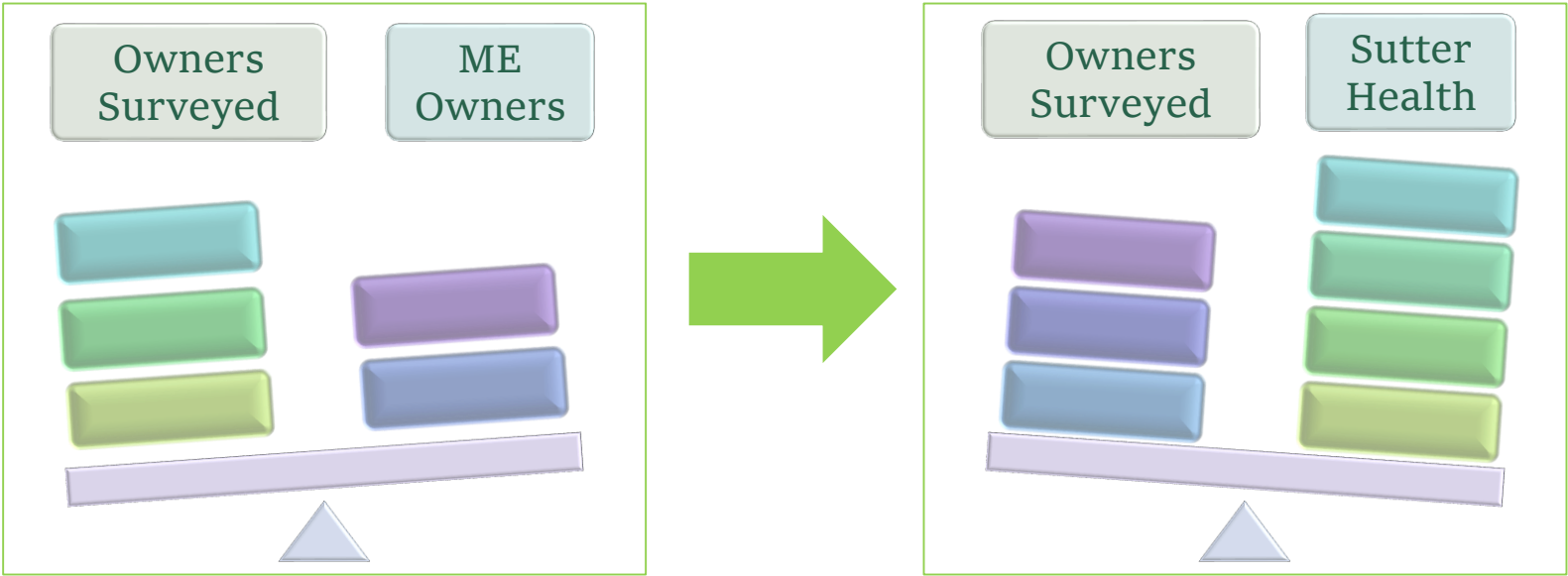


Adopting Lean construction involves radical changes

Owners and AECs should be trained about Lean concepts, tools and language

- AECs have more opportunities to be exposed to lean
- AECs play a crucial role in educating owners

Future Research



We hope

The assessment of the client lean-enabling competencies we presented will provide the basis for future research into this critical area

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THANKYOU

Any questions?

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