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# DEFINING LEAN CONSTRUCTION CAPABILITY FROM AN AMBIDEXTROUS PERSPECTIVE

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# AGENDA

Current issues with LC capability

Research questions

Method

Current understanding of the rigidity  
and flexibility

Theoretical explanation

Definitional issues of LC capability

Application in construction

Conclusions and contributions

## Current issues

The lean approach is implemented to achieve the rigid targets of projects, such as schedule, quality and cost. In this study, the rigid features of LC refer to the strict requirements for cost reduction

Some studies have shown the rigid and flexible features in lean (Owen et al., 2006; Fujimoto, 2014). However, these achievements cannot fully explain the whole nature of LC capability.

This research aims to explore the ambidextrous characteristics of LC capability.

the characteristics to adjust and adapt to the changing environment

# Research questions

Q1

What is the current understanding of the two characteristics of LC?

Q2

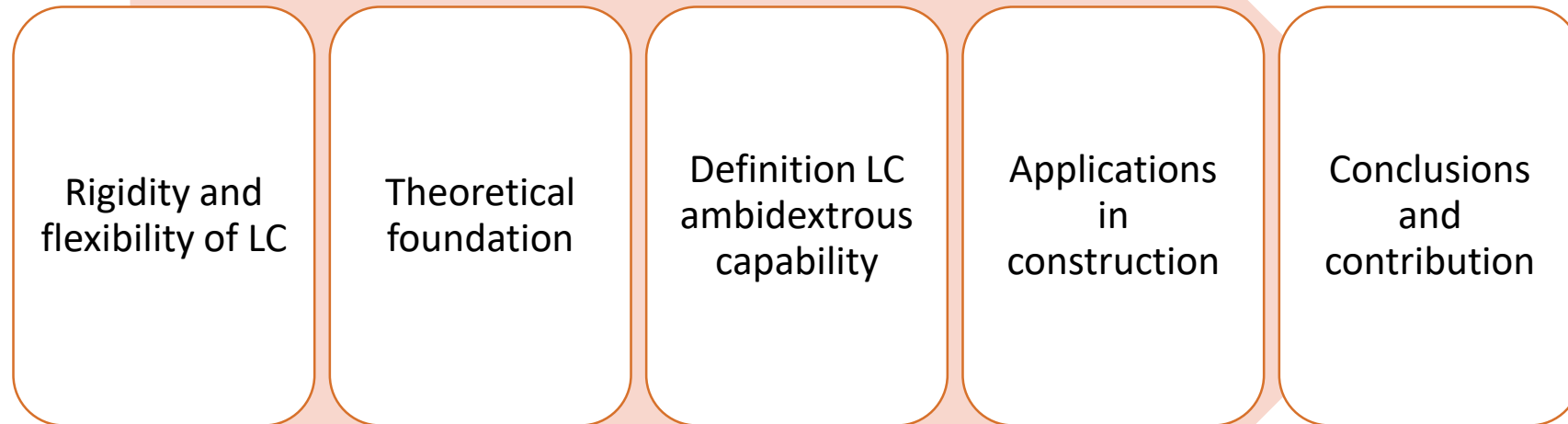
Are there underlying theories that could explain the relationship between these two characteristics?

Q3

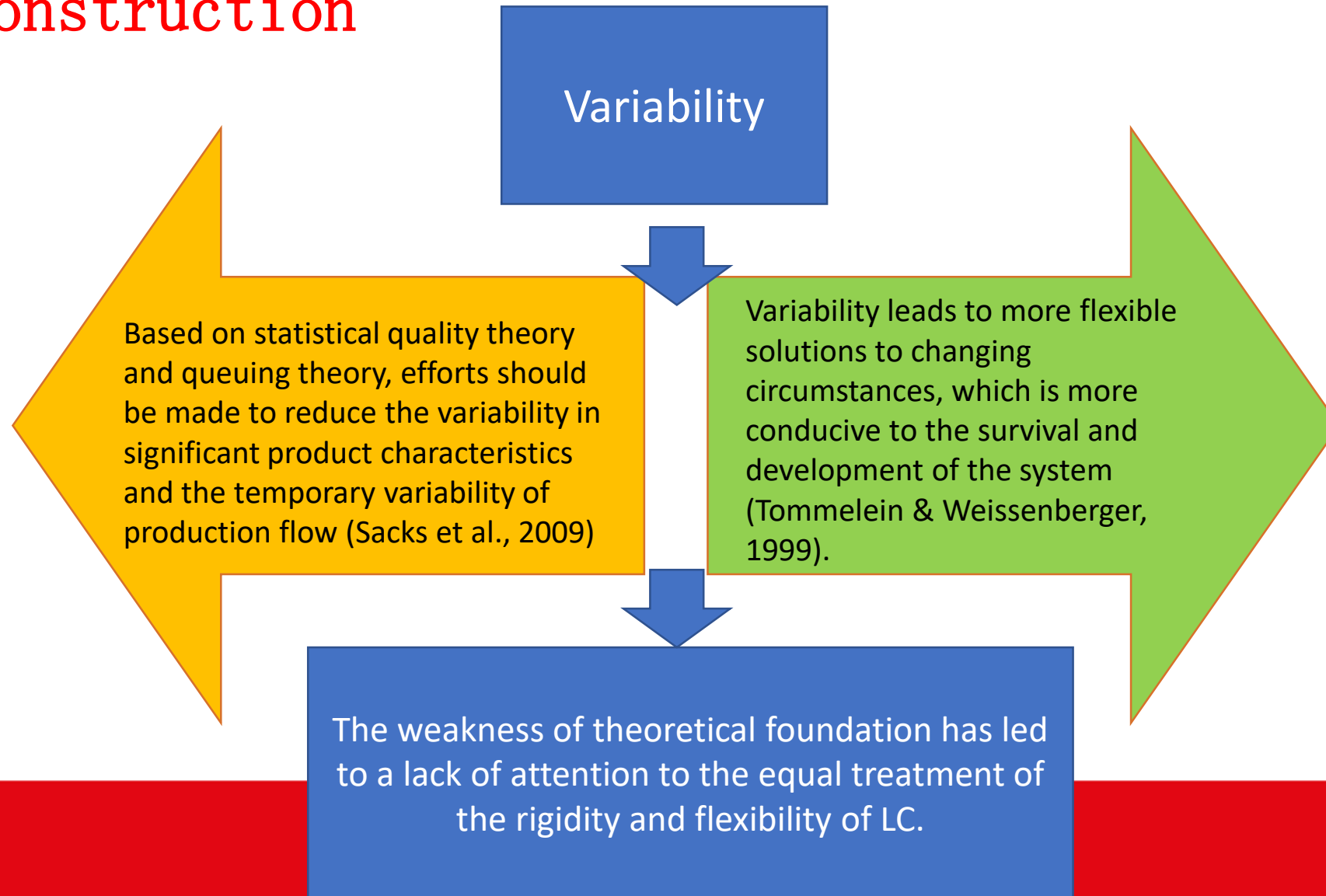
Can a better understanding of LC ambidextrous capability benefit their application in construction?

# Method: Critical literature review

## Structure of this research



# Current understanding of the rigidity and flexibility of lean construction



# Theoretical explanation

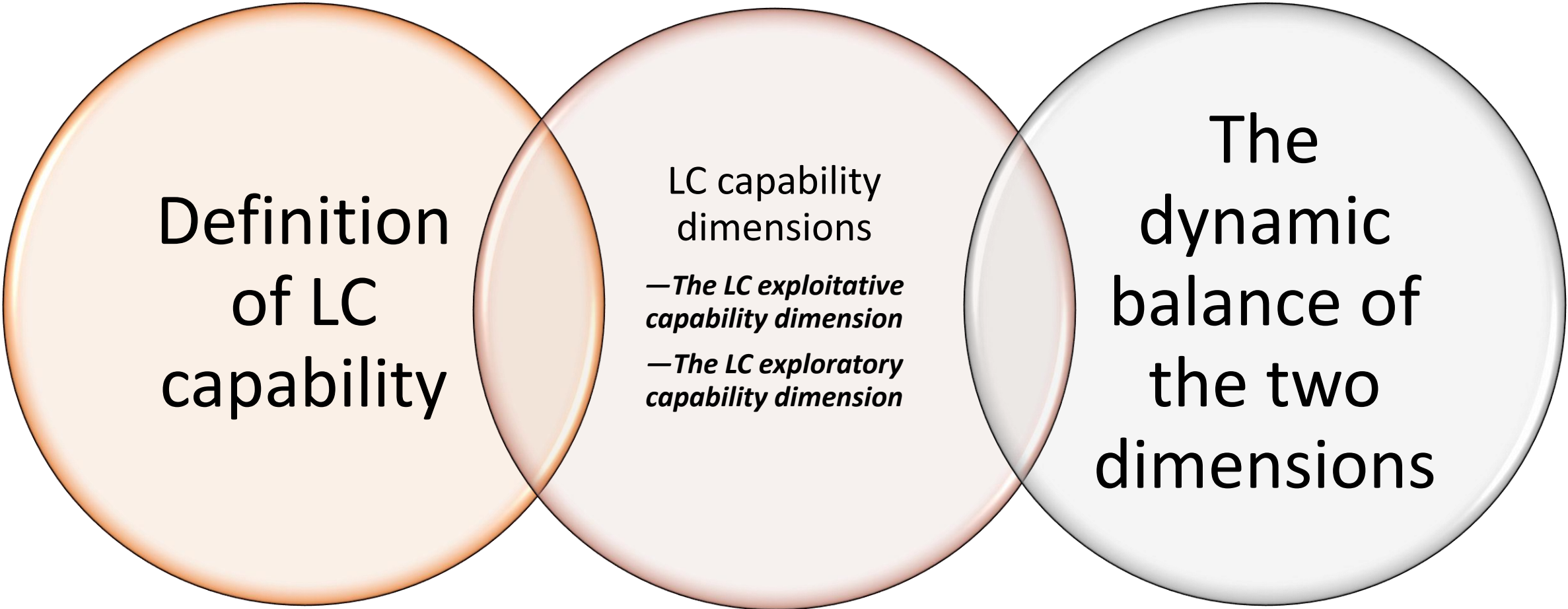
## Paradoxical Thinking

- Some paradoxes remain in LC projects and might be reinforced by lean
- JIT VS buffers; standard operating procedures VS customised crafted solutions

## Organisational Ambidexterity Theory

- Sequential, structural, and contextual ambidexterity
- A paradoxical solution is to seek ambidexterity or ambidextrous organisation form (Storey & Salaman, 2009)

# Definitional issues of LC capability



Definition  
of LC  
capability

LC capability  
dimensions

- *The LC exploitative  
capability dimension*
- *The LC exploratory  
capability dimension*

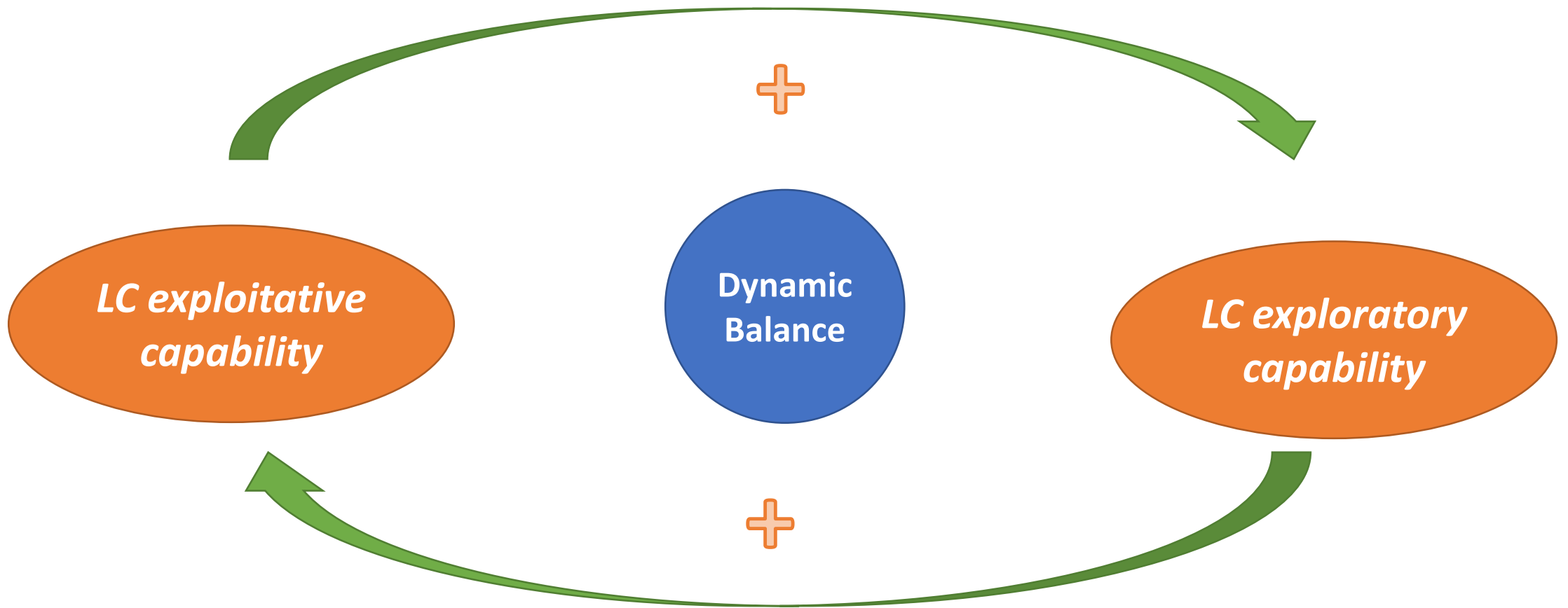
The  
dynamic  
balance of  
the two  
dimensions



## Definition of LC ambidextrous capability

*LC capability is the capability that an organisation or individual has to achieve LC goals and an ambidextrous capability to solve both conflicting and interdependent problems. It embodies the philosophy, principles and methods of LC and is dedicated to solving the paradoxical tensions in an LC project.*

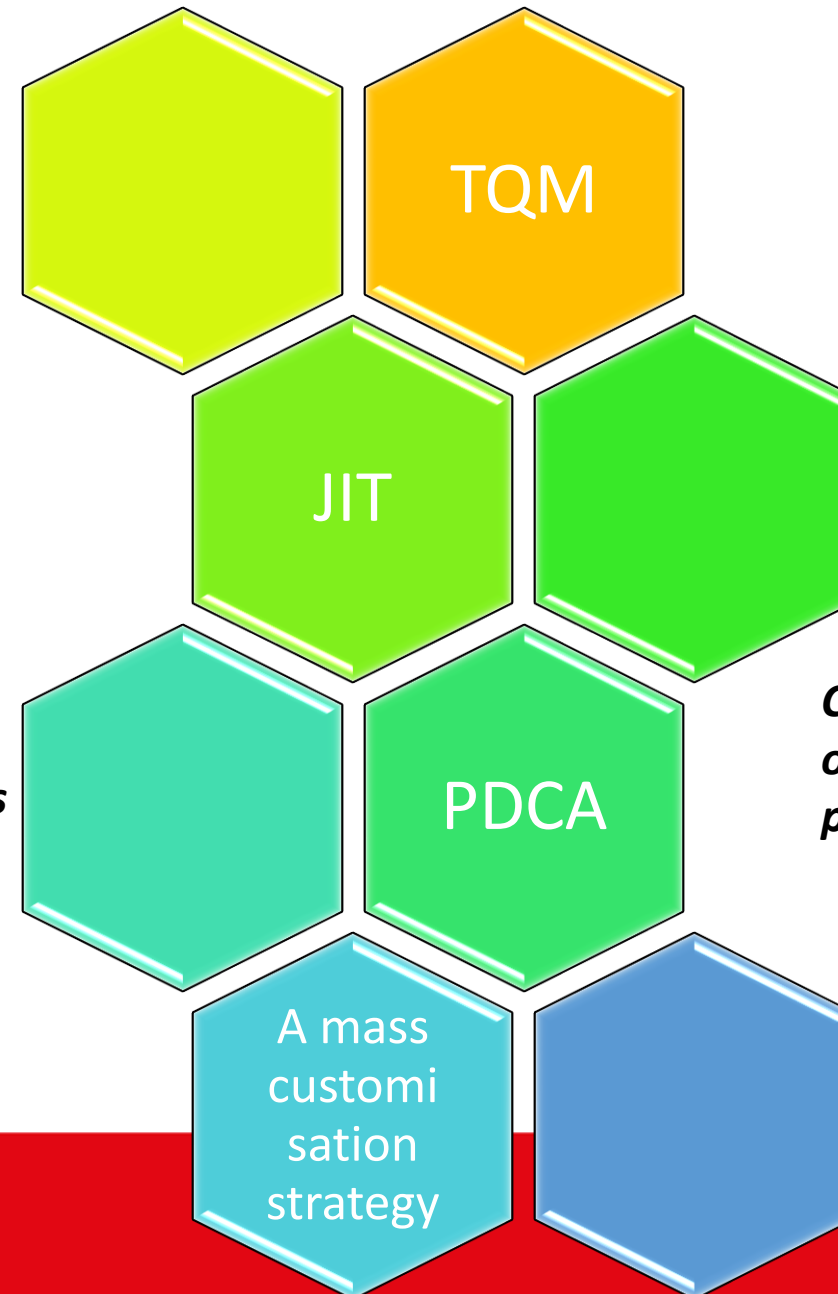
# LC capability dimensions



# Application in construction

- ◆ Application of a certain tool
- ◆ Application in project organisational area
- ◆ Ambidexterity Promotion Factors

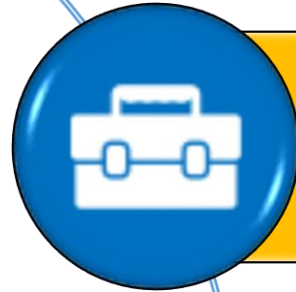
*A culture that values organisational learning and continuous improvement*



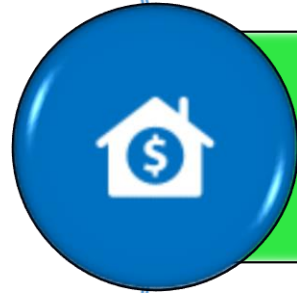
*Commitment and cooperation*

*Considering the project organisation as a production system*

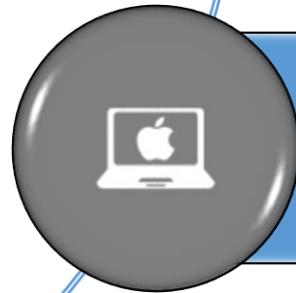
# Conclusions and contributions



Given the lack of theoretical foundations, the understanding of the two characteristics may be insufficient and the project paradoxes may not be properly handled. Through the introduction of organisational ambidextrous theory, the definition of LC capability is clarified.



This study provides theoretical guidance for practitioners to understand the ambidextrous characteristics of LC capability, clarifies why it is necessary to balance the relationship between LC exploitation capability and LC exploration capability and identifies the factors that promote the balance of LC ambidextrous capability.



More applications at the organisation level need to be explored in future research, and the organisational characteristics that are most conducive to the balanced development of LC ambidextrous capability require further study using live real-life case studies.

## Contributions & future research

Thank you for your attention!

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