



KEYNOTE

Exploring The Influence of The UK Construction Industry Players in Embracing Modern Methods of Construction

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Outline

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INTRODUCTION

- Modern Methods of Construction (MMC) is the term used to refer to a set of innovations, involving off-site construction, such as off-site production and manufacturing.
- They also include modular building, prefabrication, preassembly, industrialized building, and a range methods moving construction works from the construction site to the factory.
- The process in which parts of a building are built at a place different to the location in which the final structure is positioned



MODULAR CONSTRUCTION

- Volumetric modular construction is a method of construction whereby free-standing three-dimensional modules are completed with internal finishes, fixtures and fittings, in an off-site fabrication facility, before being delivered to and installed on-site.
- Positives include shortening the on-site portion of a projects programme, Sustainability related benefits, and even the potential to reduce cost.
- The major dis-advantage is the repetitive nature of square modules, causing the loss of uniqueness and aesthetic value in construction



BENEFITS

- Reduction in the construction time
- Improved quality
- Decrease in defects
- Lowered health and safety risks
- Reduced environmental impacts and wastes on sites
- Construction cost
 - Perceived to be on the negative in direct comparison
 - However, with indirect and all-inclusive comparison, - cost reduction through *increase in predictability, *cost certainty and reduced risk, whole life performance and profits, *reduced abortive work and defects, and *site overheads



BARRIERS OF MMC

- **Skills and Experience-** require highly skilled labour, both for producing in factories and for the precise on-site assembly
- **Cost-Related Issues-** require high startup costs to set up appropriate machinery and a prefabrication yard
- **Culture & Knowledge-** many people are suspicious of the performance and quality; (high-profile failure in the past)
- **Lack of Standards-** relatively recent innovations, hence, there is a lack of design standardization
- **Inflexibility-** inflexible, hence, unsuitable for late design changes, moment production starts, any change in design may affect how different parts will fit together.
- **Coordination-** procurement, supply chain, site management



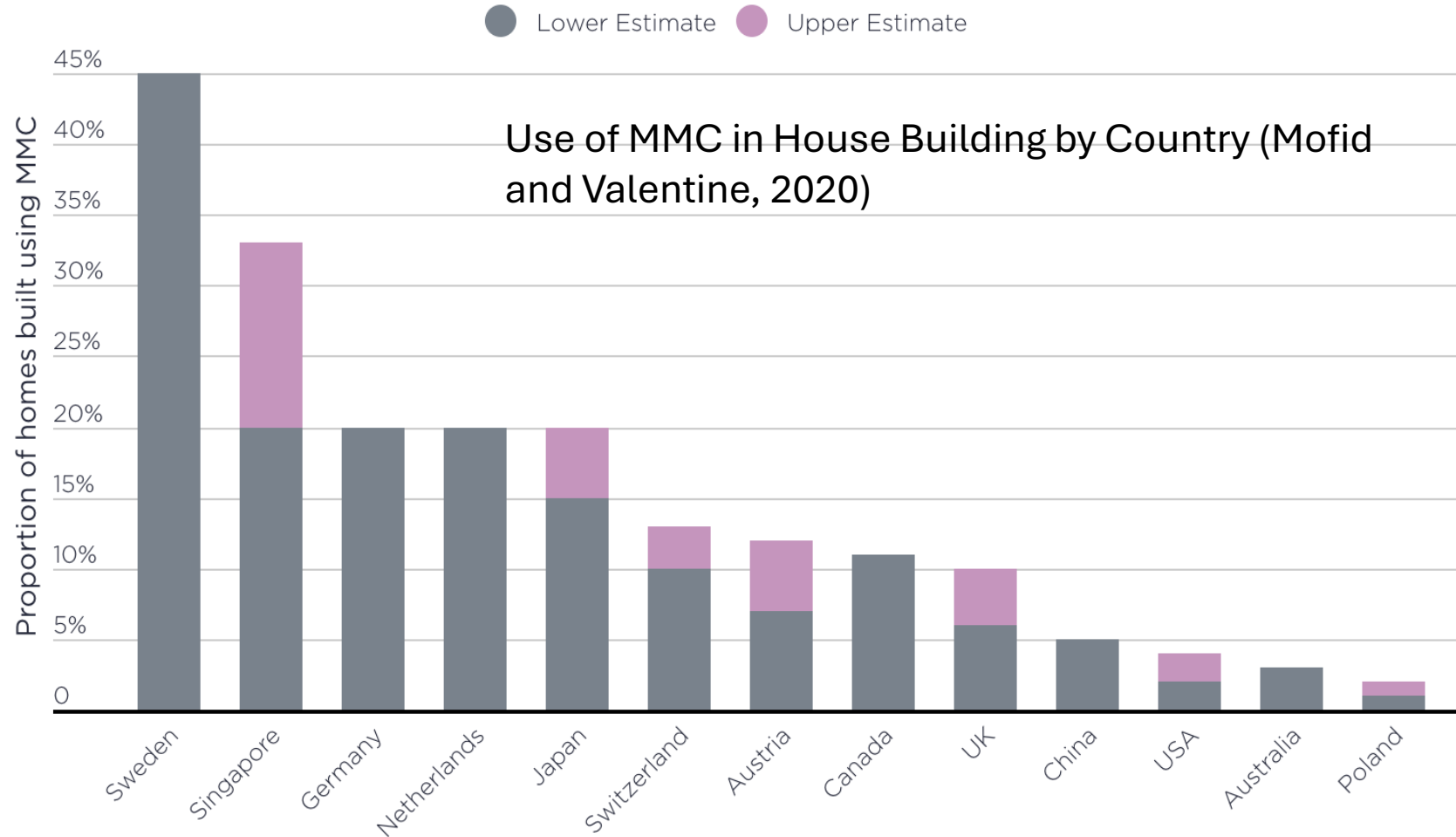
SIGNIFICANCE OF THE STUDY

- The 9th & 11th goals of the sustainable development goal (SDG) of UN are unrealistic in the UK
- Wide gap exists between various governmental policies and the available homes in the UK.
- UK population has continued to grow exceedingly in the recent times (69M) and projected to hit 70M in 2026.
- The UK is facing a terrible housing shortage of 4.3 million homes, simply because enough houses are not being built (white paper).
- Government's current target is to build 300,000 homes a year.



SIGNIFICANCE OF THE STUDY

- The government multiple papers recognise the importance of using MMC to help meet house building targets.
- With this recent push to use MMC, yet when the UK is compared to other nations, their uptake in such technologies is still relatively lacking



- Hence, this study investigates why the uptake in such technology is still relatively lacking, with the search light to the professionals within the construction industry.



OBJECTIVES OF THE STUDY

- After identifying the various barriers hindering the effective take-up of MMC, the research then delve into the aspects that concern the industry players.
- The objective of this study is to explore and ascertain how the lack of experience, skills and most importantly, the knowledge and understanding of construction consultants can impact the acceptance of MMC technologies.



METHODOLOGY

- **Primary Data Collection-** questionnaire with combination of multiple-choice questions, rating scale questions, open ended questions and likert scale questions used.
- **Research Targeted Sampling-** The questionnaire was distributed by email, shared online, on websites such as LinkedIn, a professional social media and internal channels to top level professionals working within the leading construction industry in the UK
- **Distribution and Responses-** The exact number of distribution cannot be established. 61 responses received.

Consultant/Contractor

Consultant	75%
Contractor	16%
Other	8%

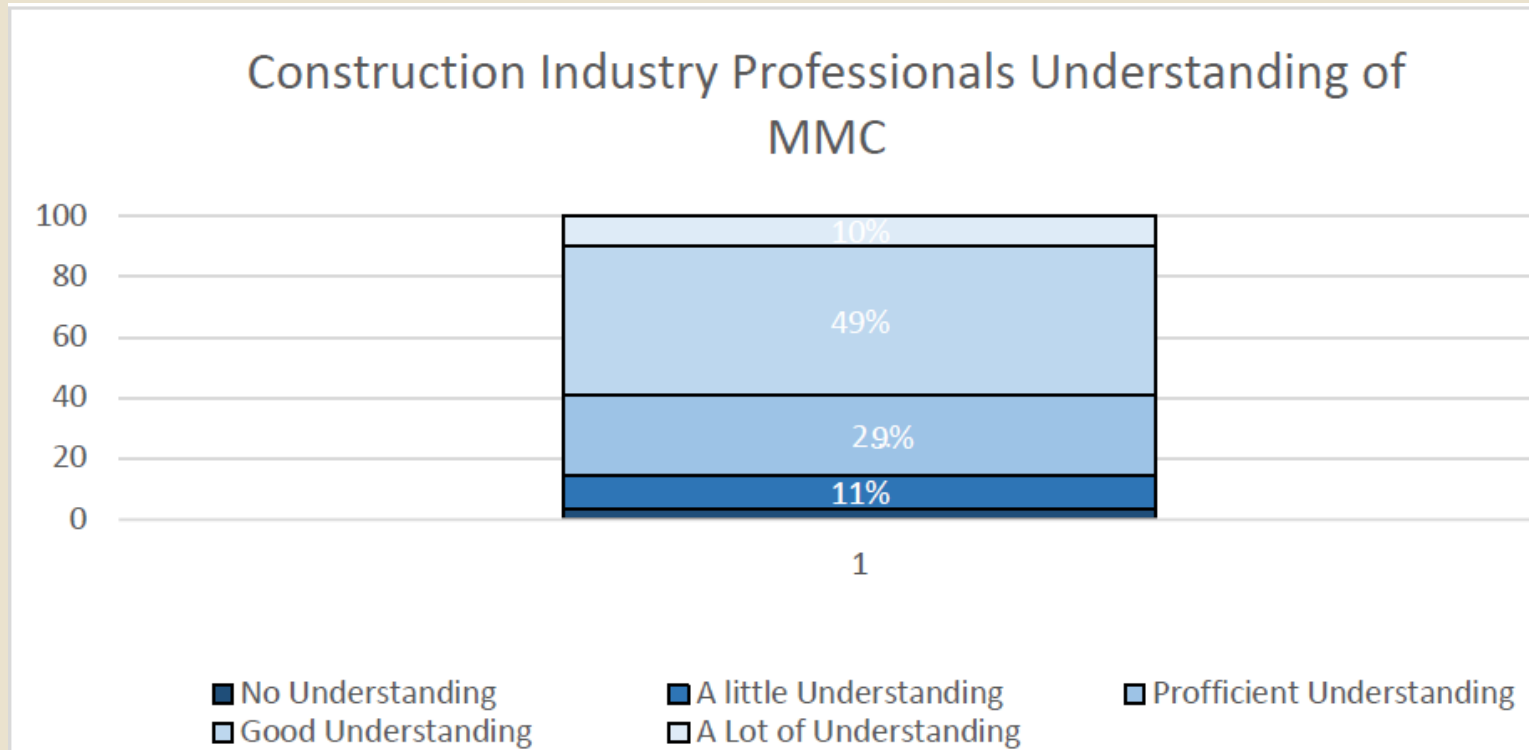
Job Role

Project Manager	18%
QS	54%
BS	3%
Architect	5%
MMC Consultant	7%
Head of Sales	3%
COO	5%
BIM Manager	3%
Sustainability	2%



FINDINGS

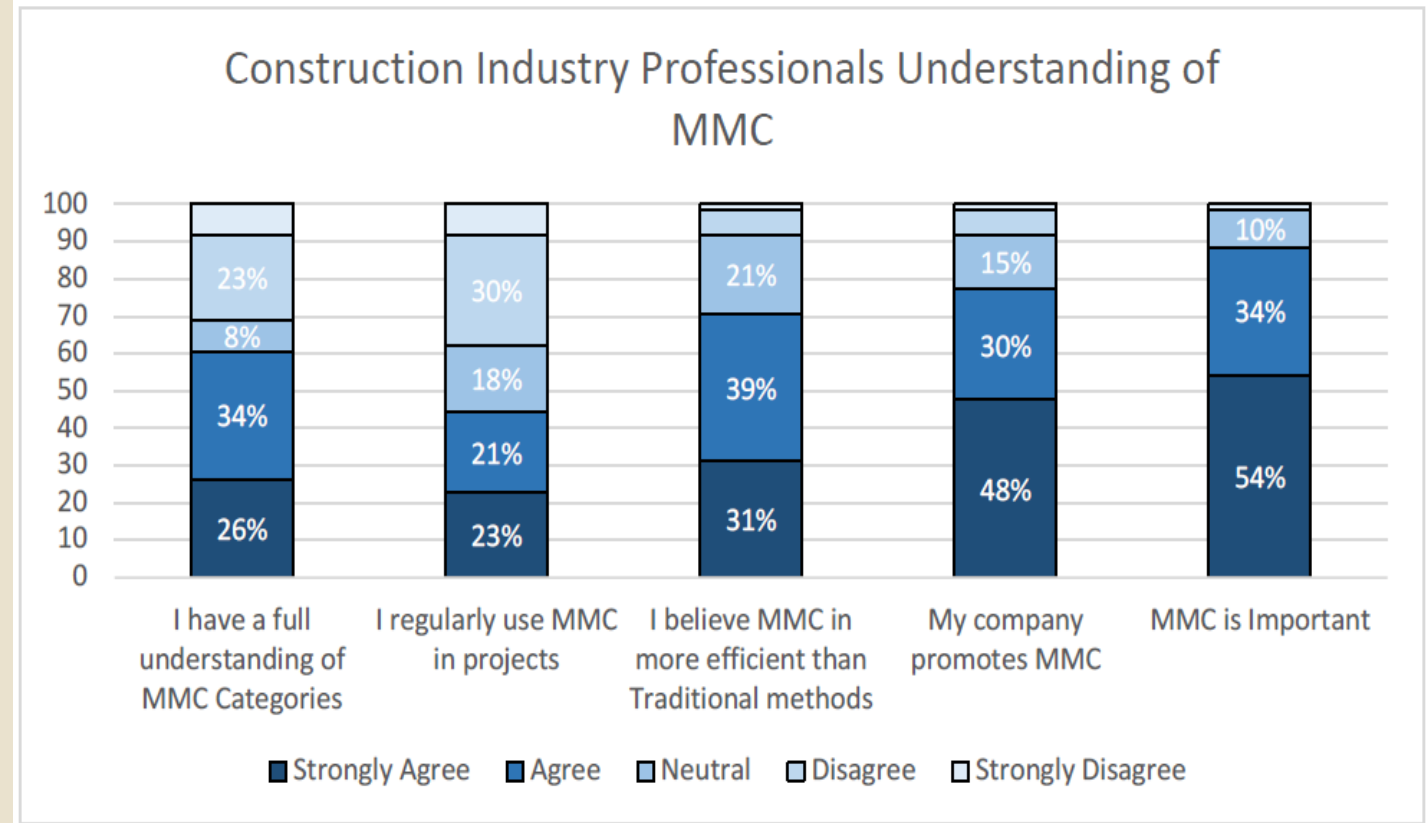
- The results from this question showed that a 59% of respondents felt they had either a “Lot of understanding” or at least, a “Good Understanding” of MMC.



Responses to the question "How Good is Your Understanding of MMC"

FINDINGS

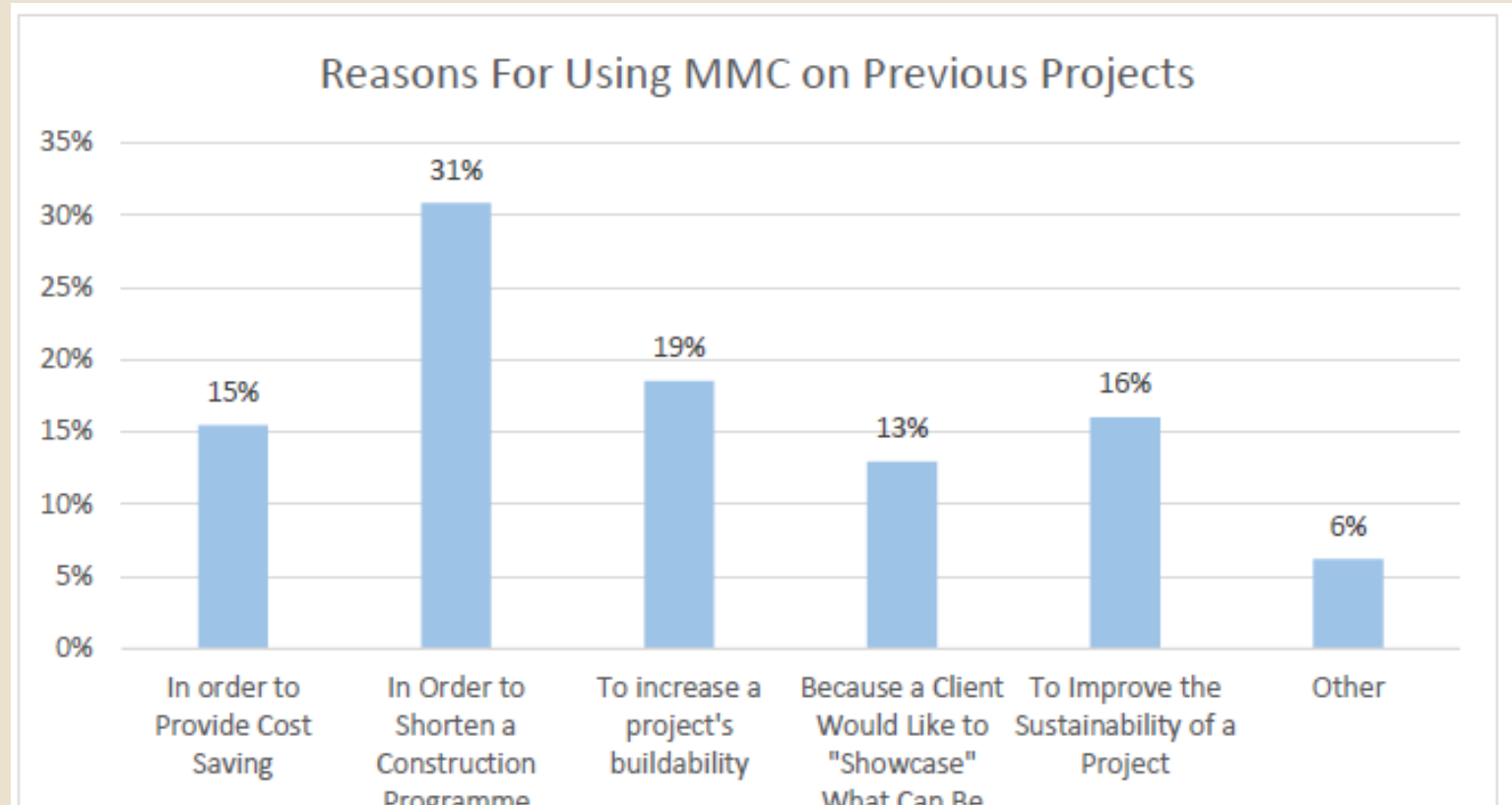
- This is to further probe the understanding based on previous experience.
- An initial glance shows that the modal response for all the five statements was either “Agree” or “Strongly Agree”.
- 89% of participants responded “Agree” or “Strongly Agree” to the importance of MMC.
- 78% of the respondents “Agree” or “Strongly agree” that their companies promote MMC.



Exploring Construction Professionals' Understanding and Previous Experience With MMC

FINDINGS

- Reasons For Using MMC on previous projects shows to “Shorten a Construction Programme”, and “increasing project buildability” leading, accounting for 31% and 19% of responses, respectively.



Reasons For Using MMC on a Construction Project



FINDINGS

- Further investigation was carried out on the 36 respondents with “Good” or “Very Good” understanding of MMC.
- Years of experience in the construction industry checked against their knowledge of MMC.
- The results show that those with the most construction industry experience were also most likely to have a better understanding of MMC.

Years Industry Experience	0-3 years	3-8 years	8-15 years	15-20 years	20+ years
Frequency of Respondents Who Have a "Good" or "Very Good" Understanding of MMC	3	9	7	6	11

Comparing a Construction Professionals Understanding of MMC and Their Years of Industry Experience

CONCLUSION

- This study has found construction industry professionals' understanding of MMC in the UK to be good or adequate, which is in contrary to some previous research outputs listing lack of understanding among construction professionals as one of the barriers restricting the Implementation of MMC in the UK.
- Other points that arose from the questionnaire used included a potential lack of cohesion within the industry with regards to the understanding and experience with MMC
- It is therefore, recommended that further research that will delve into other areas of barriers, in far greater detail to ascertain how they can be broken down further to give rise to total embrace of MMC technologies for improved housing in the UK and globally.



THANK YOU FOR LISTENING

Any Questions?

