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LEAN CONSTRUCTION AND MATURITY MODELS: APPLYING FIVE METHODS

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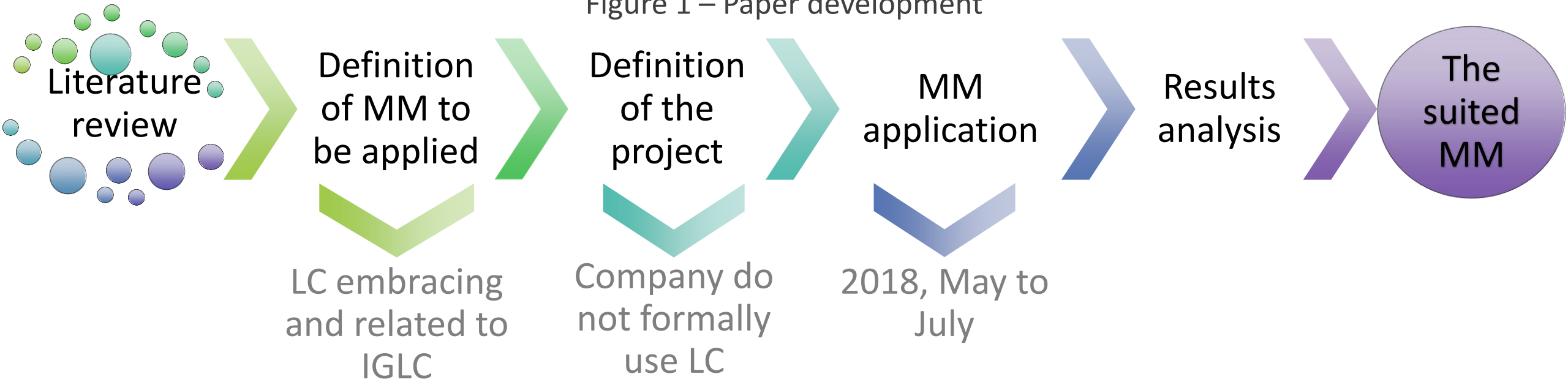
Introduction

- Main purpose: select the suitable MM to assess LC growth in a small size Brazilian construction company.

Materials and methods

Figure 1 – Paper development



Source: Own elaboration.

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Table 1 – Sorted Maturity Models

MM NAME	AUTHOR	YEAR	COUNTRY
LCR - Lean Construction-Quality Rating Model	Hofacker *et al.*	2008	Brazil and Germany
MDCE - Lean Construction Diagnostic Model	Arantes	2010	Brazil
LCMM - Lean Construction Maturity Model	Nesensohn	2014	UK
MMDPLC - Maturity Model for Development of Lean Construction Principles	Soto	2016	Chile
DOLC – Degree Of Lean Construction	Carvalho and Scheer	2017	Brazil

Source: Own elaboration.

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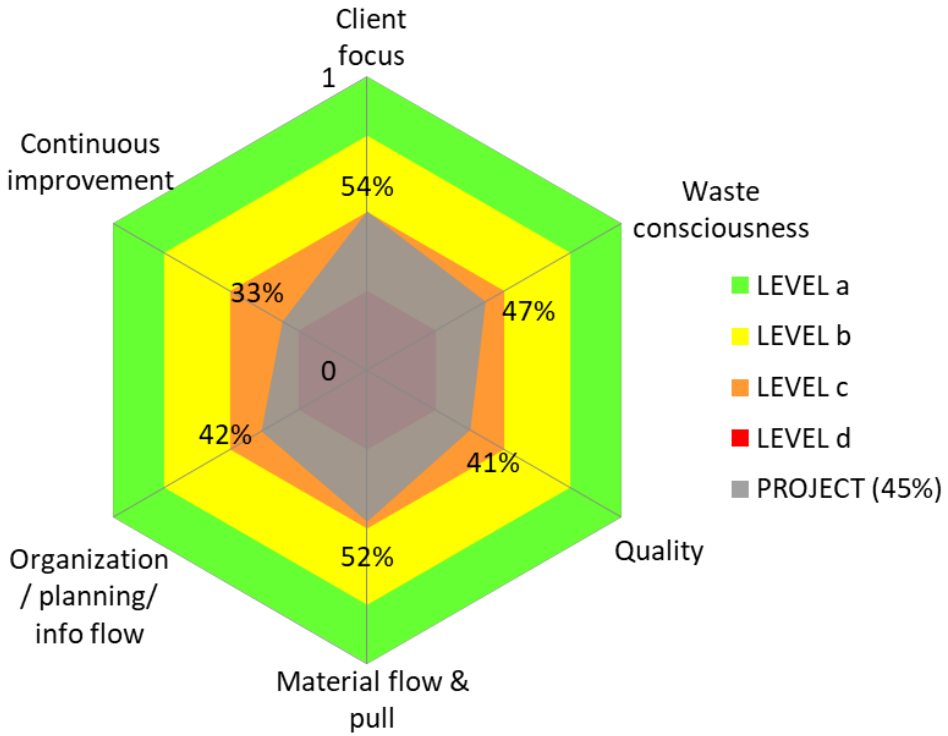
Results

Figure 2 – LCR method



Source: Own elaboration.

Answered by:

- Internal evaluator (engineer)

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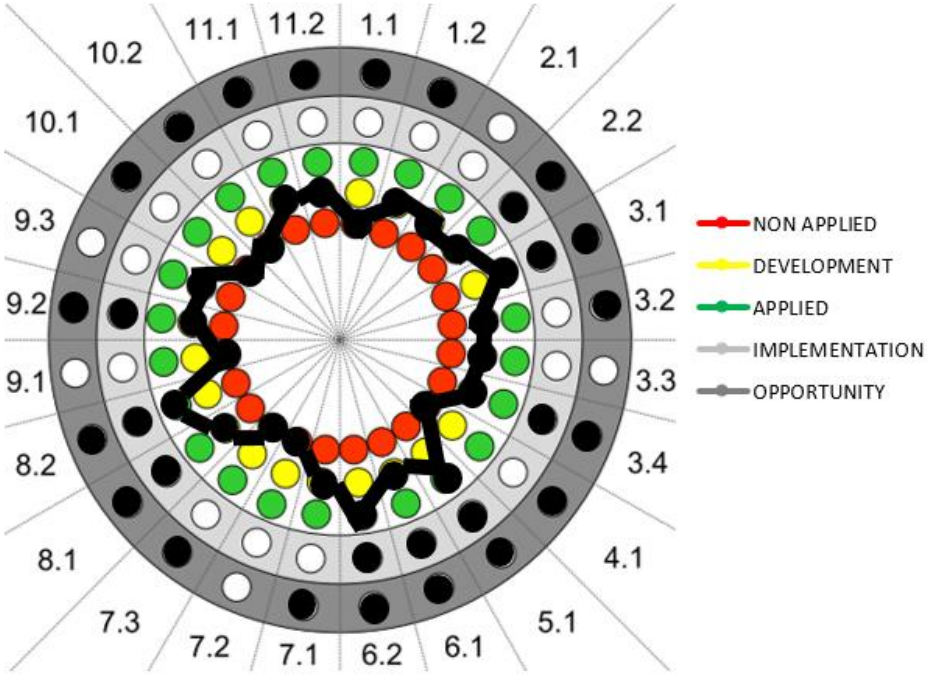
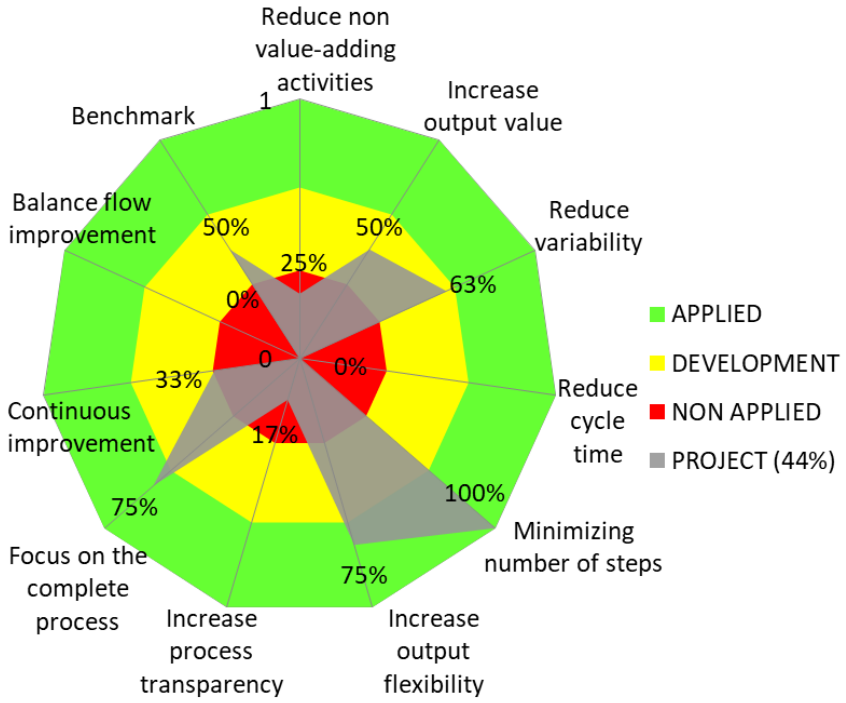
Figure 3 – MDCE original method



Source: Own elaboration.

Figure 4 – MDCE adapted method



Source: Own elaboration.

Answered by:

- Internal evaluator (engineer)

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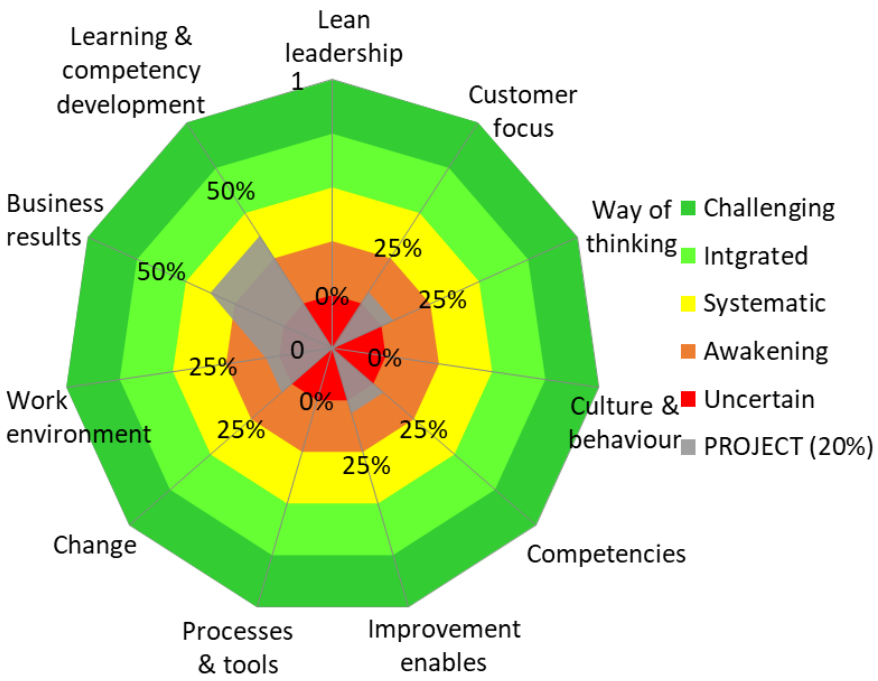
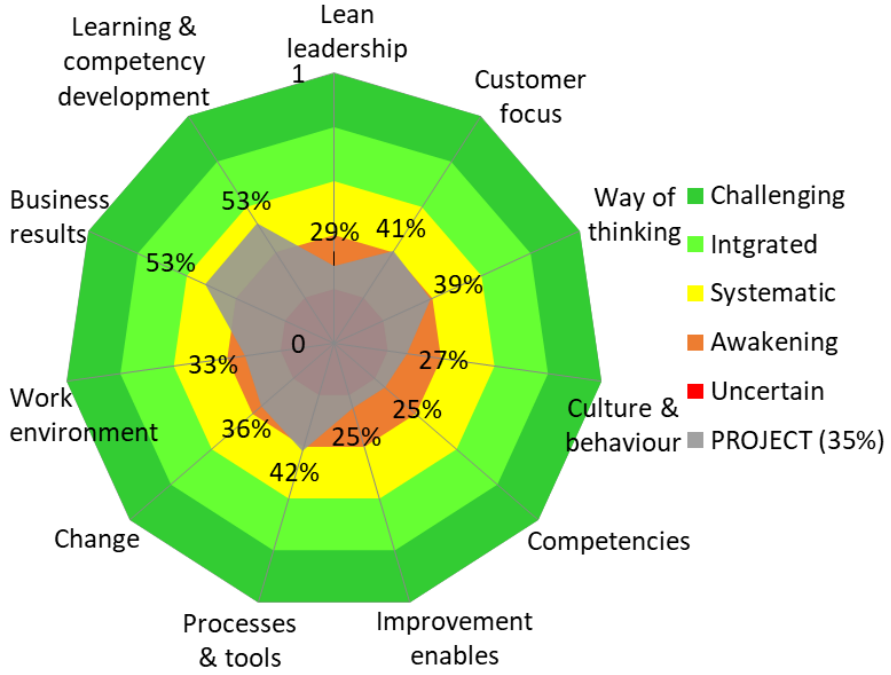
Figure 5 – LCMM original method



Source: Own elaboration.

Figure 6 – LCMM adapted method



Source: Own elaboration.

Answered by:

- External evaluator (researcher)

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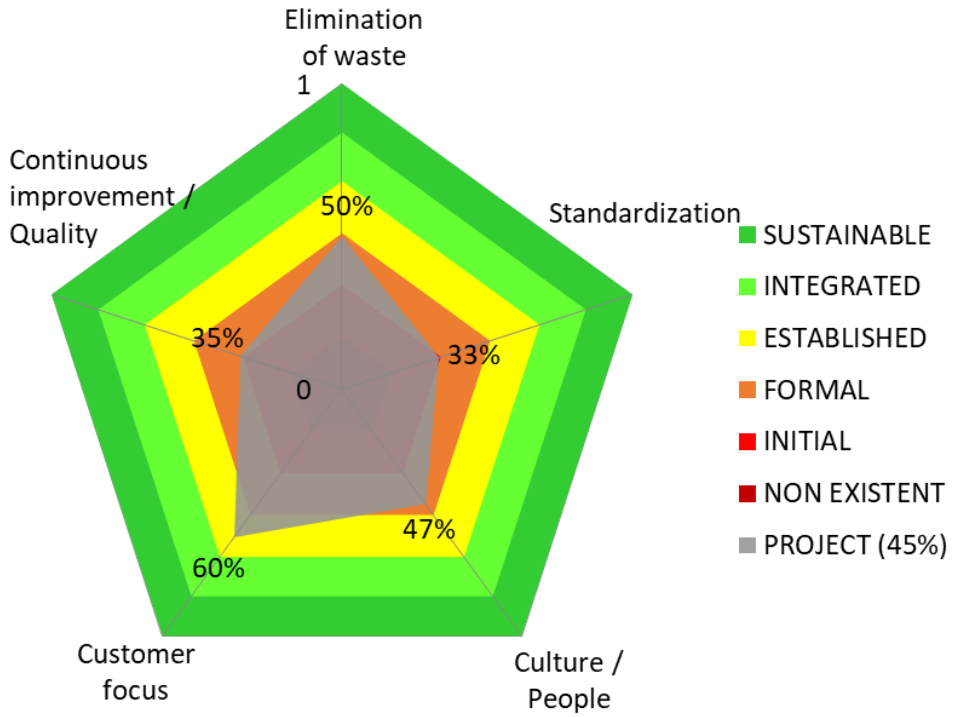
Figure 7 – MMDPLC method



Source: Own elaboration.

Answered by:

- Internal evaluator (engineer)

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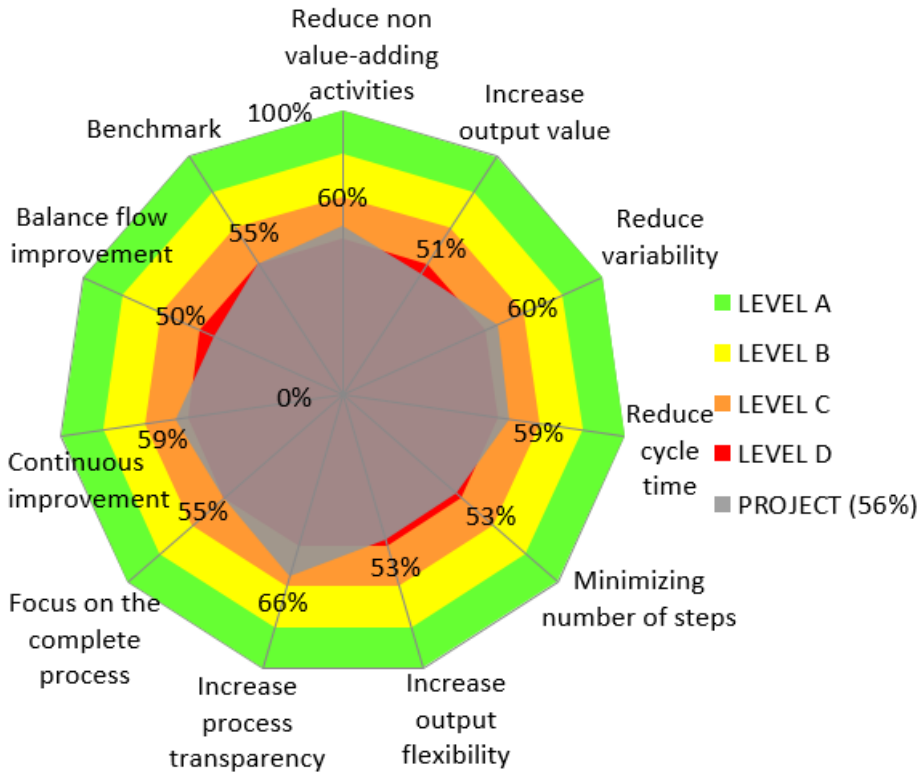
Figure 8 – DOLC method



Source: Own elaboration.

Answered by:
- Designer (internal);
- Engineer (internal);
- Worker (internal);
- Director (internal);
- Client (external).

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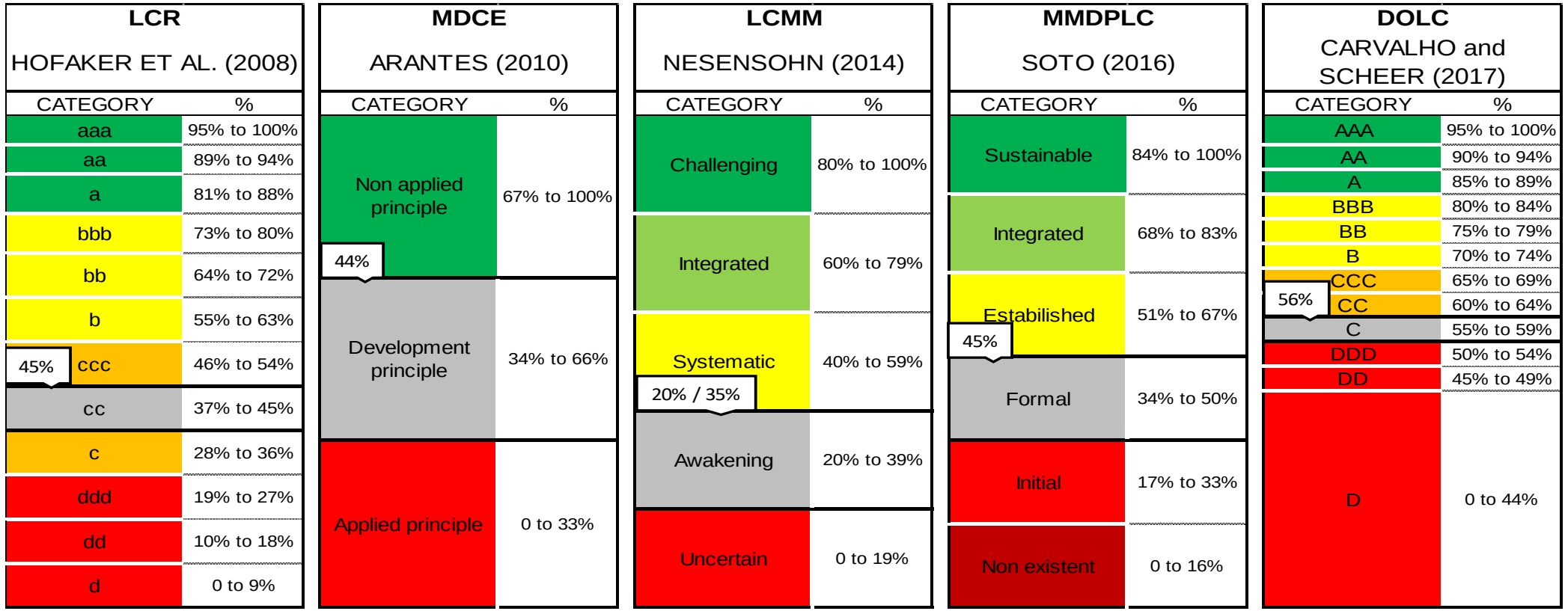
Discussion

Figure 9 – Comparison between the ranking scale of the five models



Source: Own elaboration.

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Conclusion

- LCMM were the suited MM for this case study;
- This MM provide guidance to companies at any point in LC journey;
- Has hard ascending levels since use the lowest statement score to evaluate the related attribute;
- We propose use the range of attributes to evaluate the attribute;
- For future work: develop a decision-making process to adjust weights to company principles and apply LCMM in others construction firms.

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THANK YOU!

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