Use of Bio-based Building Materials

Perceptions of Swedish Architects, Contractors, and developers

Emilia Markström, Anders Bystedt, Magnus Fredriksson, Dick Sandberg
Probability, drivers, barriers
Semi-structured interviews

- architects
- developers
- contractors
Semi-structured interviews

Theory of Planned Behaviour

Innovation Theories

architects

contractors

developers
intention

perceived behavioural control

expected behaviour
TPB

- attitude
- subjective norm
- perceived behavioural control
- expected behaviour
expected behaviour

attitude

subjective norm

perceived behavioural control
“It is nice to have at least some part of the exterior made in wood since it provides a warmth.”

(Architect)
expected behaviour

attitude
subjective norm
perceived behavioural control

A C
expected behaviour

attitude

subjective norm

perceived behavioural control

A  C  D
expected behaviour

attitude

subjective norm

perceived behavioural control

A  C  D
“Today, one is more willing to use bio-based materials than before but there also exists a resistance.”

(Developer)
expected behaviour

attitude

subjective norm

perceived behavioural control

A C D
expected behaviour

attitude
subjective norm
perceived behavioural control

A  C  D
Barriers
Barriers

tradition in building with concrete
new and not tested
Barriers

tradition in building with concrete
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bad examples
lack of knowledge
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too costly
maintenance
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to short service-life
mould and moisture damage
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cracks and settlements
hard to obtain an airtight structure
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shortage of construction workers
local plan
insurance issues
Drivers
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faster construction
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- faster construction
- social benefits
- green building certification
- political pressure
Drivers

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- green building certification
- political pressure
- lack of labour
conclusions
<table>
<thead>
<tr>
<th>expected behaviour</th>
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<tr>
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**Barriers**

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- bad examples
- lack of knowledge
- too costly
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- to short service-life
- mould and moisture damage
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- cracks and settlements
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**Drivers**

- faster construction
- social benefits
- green building certification
- political pressure
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conclusions

1. Probability = low
conclusions

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2. Key barriers:
   - culture and habits
   - material properties
Conclusions

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2. Key barriers:
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   - material properties

3. Key drivers:
   - environmental performance
conclusions

1. Probability = low

2. Key barriers:
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   - material properties

3. Key drivers:
   - environmental performance

4. Barriers tend to outweigh the drivers
thanks