Builders engagement with energy retrofit and training: Capabilities, Opportunities and Motivation

Analysis of three datasets

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Part of data shared here collected by Aaron Flannagan whilst I was at University Centre North Lincolnshire, North Lindsey College, Scunthorpe

Presenting research conducted by myself, plus:

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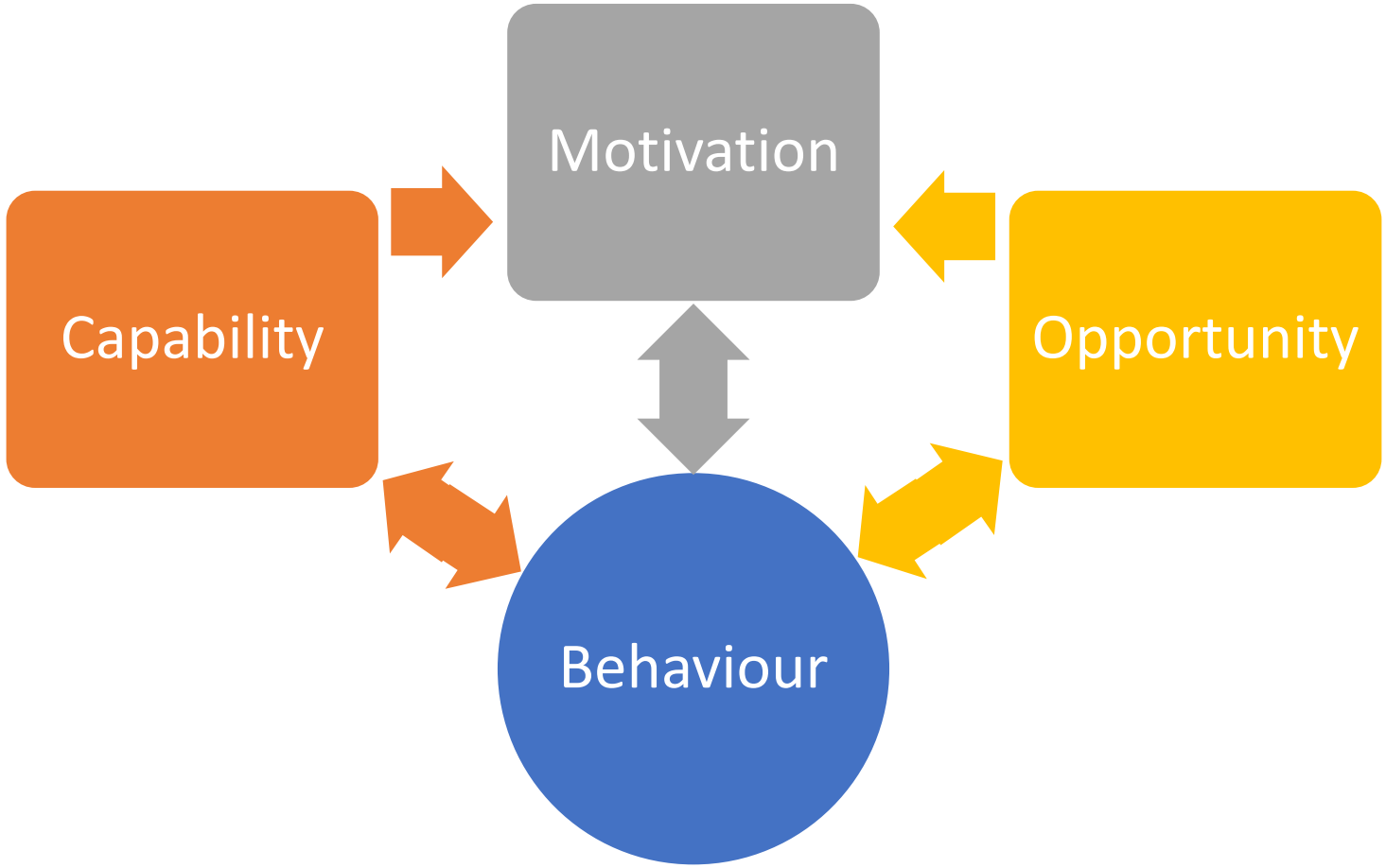
Energy retrofit and builders: Background

- Creating capability deliver retrofit at scale is an enormous undertaking
- Energy efficiency is not typically a primary objective of repair and maintenance work
- Micro-enterprises represent 92% (more than 300, 000) of UK construction firms (ONS 2018), (77% of the total construction workforce, BEIS 2019).
- Retrofit activities shape and are shaped by a system of policies, programmes and agents
- Practitioners delivering retrofit are often overlooked in policy

Simpson, K., Murtagh, N., Owen, A., 2021. Domestic retrofit: understanding capabilities of micro-enterprise building practitioners. Buildings and Cities 2, 449–466.. doi:10.5334/bc.106

Murtagh, N., Owen, A.M., Simpson, K., 2021. What motivates building repair-maintenance practitioners to include or avoid energy efficiency measures? Evidence from three studies in the United Kingdom. Energy Research & Social Science 73, 101943.. doi:10.1016/j.erss.2021.101943

Capability-Opportunity-Motivation-Behaviour



Michie, S., Van Stralen, M.M., West, R., 2011. The behaviour change wheel: A new method for characterising and designing behaviour change interventions. Implementation Science 6, 42.. doi:10.1186/1748-5908-6-42

Sample of interview participants (2015-2018)

Three studies (2015-2018) aiming to understand builder perspectives on energy retrofit

Business detail	Category	Number of participants
Company size	Sole trader	15
	1-10 employees	12
Trades (core business, though many work across trade boundaries)	General builder	8
	Heating engineer/plumber	4
	Electrician	4
	Bricklayer	3
	Plasterer/decorator	2
	Joiner	2
	Other	4
TOTAL	Participants	27

**Plus 2 x '11-25 employees' and 2 x '+50employees' for motivation paper (Murtagh et al., 2021)*

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Insights: Capabilities

Cluster (and category)	Theme	Prevalence
Knowledge	**Knowing and knowing how**	**High**
	Ability to access knowledge	Medium
	Ability to work across trade boundaries	Medium
	Ability to keep learning and developing	Low
Business management	**Manage and co-ordinate people and resources**	**High**
	Develop and manage positive client relationships	Medium
Individual characteristics	Problem solving	Medium
	Resilience	Low

**prevalence is the number of interviews coded:* High (over 20), Medium (between 10 and 20), Low (nine or fewer)

Capabilities

Knowing and knowing how (high)

My dad is 75, he still works for the company. His skills are the fact that he's got unbelievable experience, he's built everything it's possible to build and any detail he can look at and say 'do it like this.' His experience is unparalleled really and my brother, Steve, runs the site side of things, he's just very kind out of the box thinking, he can get round any problem. (Kal)

Insights: Opportunities

Cluster	Theme	Category
State action	Building regulations and standards	M
	National policy grants and education	M
Customer and market demand	Specific customer demand	M
	Customer knowledge	L
	Market demand	M
Technology diffusion	Technology feasibility	M
	Compatibility with existing building systems	L
	Compatibility with work structure	L
Networks and industry relationships	Knowledge (or lack of)	M
	Networks and trade associations	M
	Local availability of products	L
	Peer and professional	L
Business management	Reputation	M
	Education and training	L
	Access to finance	L

prevalence is the number of interviews coded:* **High (over 20), **M**edium (between 10 and 20), **L**ow (nine or fewer)

Opportunities

National policy grants and education (Medium)

“None of those products [energy-efficiency] work unless you have the education, and the informing of the household and the contractor” [Craig].

Insights: Motivation

Cluster	Theme	Category
Motivation for work-in-general	**Pride in outcome**	**H**
	Variety	M
	Challenges	M
	Working independently	M
	A viable business	**H**
	Positive working relationships	**H**
	Customer satisfaction	**H**
	Waste of materials	L
Motivation for energy efficiency	Personal commitment to energy efficiency	M
	Co-benefits of energy-efficiency	L
Demotivations for energy efficiency	Perception of increased cost	M
	Lack of confidence in technical standards	M
	Habit, custom and practice in construction	M
	Perceived burden of compliance	M

prevalence is the number of interviews coded:* **High (over 20), **M**edium (between 10 and 20), **L**ow (nine or fewer)

Motivation

Pride in the outcome (High)

“I like seeing things done properly” [Eddie].

“I am foolishly keen on doing it the right way” [Mark]

“You do things two ways, you either do them right, or you do them again” [Vinnie]

Motivation

A viable business, positive working relationships and customer satisfaction (all high)

“If you’ve built a company up for that amount of time, it doesn’t really become just about money ... it sometimes becomes about the guys that have been working with you for that period of time, keeping them going.” [Charlie]

“We’re not only doing construction, we’re trying to build a relationship with people”

De-motivations

Lack of confidence in technical standards (Medium)

If the building inspector said 'I want to see air bricks' and all that, I put them in, but they were blanked off behind because an oak framed house, by its general nature, will shrink and it will leak here anyway... so you've got to ignore him 'cos there's plenty of draughts that will blow in there eventually." [Barry]

Summary

- Policy must work from existing practitioner capability to accelerate capacity
- Practitioner knowledge is developed over generations
- Practitioners minimise risk by avoiding unfamiliar technologies and practices
- Practitioners develop capability on-site, experientially
- Need to understand the building as an integrated system.

Actions

- Policy needs to recognise the essential role micro-enterprise practitioners play

- Opportunities are needed to develop retrofit capability through:
  - peer-to-peer learning
  - knowledge-sharing between older and younger practitioners
  - influential sector networks

So, what next?

- Informed the CLC National Retrofit Strategy
- Engaged the Environmental Audit Committee (Sustainability of the built environment publications)
- Developing open-access co-design toolkit to engage householders ad practitioners –builders and householders invited for the trial!

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Thank you for listening!

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On behalf of

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