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Desired compliance or business opportunity: How to frame the ecological transition in farming?

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Overview

- *Thesis*: Ecological transition in farming is framed mainly as **desired compliance** / **adoption** of practices (focus on costs)

- *Anti-thesis*: Strategic and operational fit into farmers' **business model** (focus on value)

LIFT

Low-Input Farming and Territories – Integrating knowledge for improving ecosystem based farming

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Drivers of farmers' up-take of ecological approaches – a conceptual framework with a behavioural focus

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Behavioural factors affecting the adoption of sustainable farming practices: a policy-oriented review

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Abstract

This paper reviews the findings from the last 20 years on the behavioural factors that influence farmers' decisions to adopt environmentally sustainable practices. It also proposes policy options to increase adoption, based on these behavioural factors and embedded in the EU Common Agricultural Policy. Behavioural factors are grouped into three clusters, from more distal to more proximal: (i) dispositional factors; (ii) social factors and (iii) cognitive factors. Overall, the review demonstrates that considering behavioural factors enriches economic analyses of farmer decision-making, and can lead to more realistic and effective agri-environmental policies.

Keywords: environment, sustainability, conservation, farming, agriculture, behavioural sciences, nudge, psychology

JEL classification: D91 Role and Effects of Psychological, Emotional, Social, and Cognitive Factors on Decision Making, Q15 Agriculture and Environment, Q17 Agricultural Policy

1. Introduction

1.1. Context and objectives

Over the last decades, researchers have increasingly studied the factors that influence farmers' adoption of environmentally sustainable practices. Within this literature, there is a burgeoning stream investigating the role of behavioural factors. Previous academic attempts to take stock of the factors influencing farmers' adoption of sustainable practices (Kabii and Horwitz, 2006; Pannell *et al.*, 2006; Knowler and Bradshaw, 2007; Prokopy *et al.*, 2008; Baumgart-Getz, Prokopy and Floress, 2012) did not specifically focus on the role of behavioural factors, often resulting in an incomplete overview and limited theoretical understanding of how and why these factors affect

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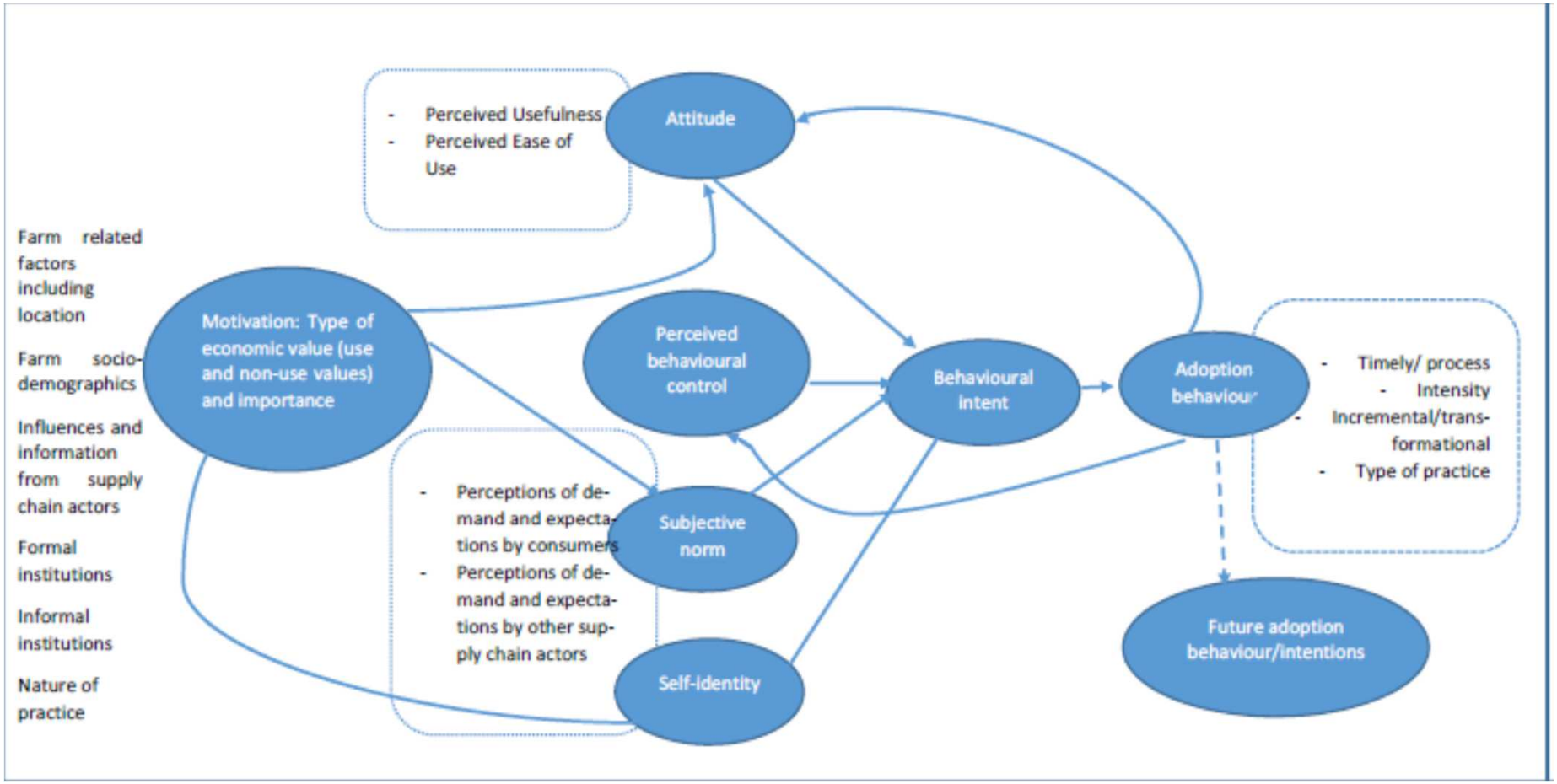
Integrated conceptual framework



Source: Hansson et al., 2018, LIFT Deliverable 2.1

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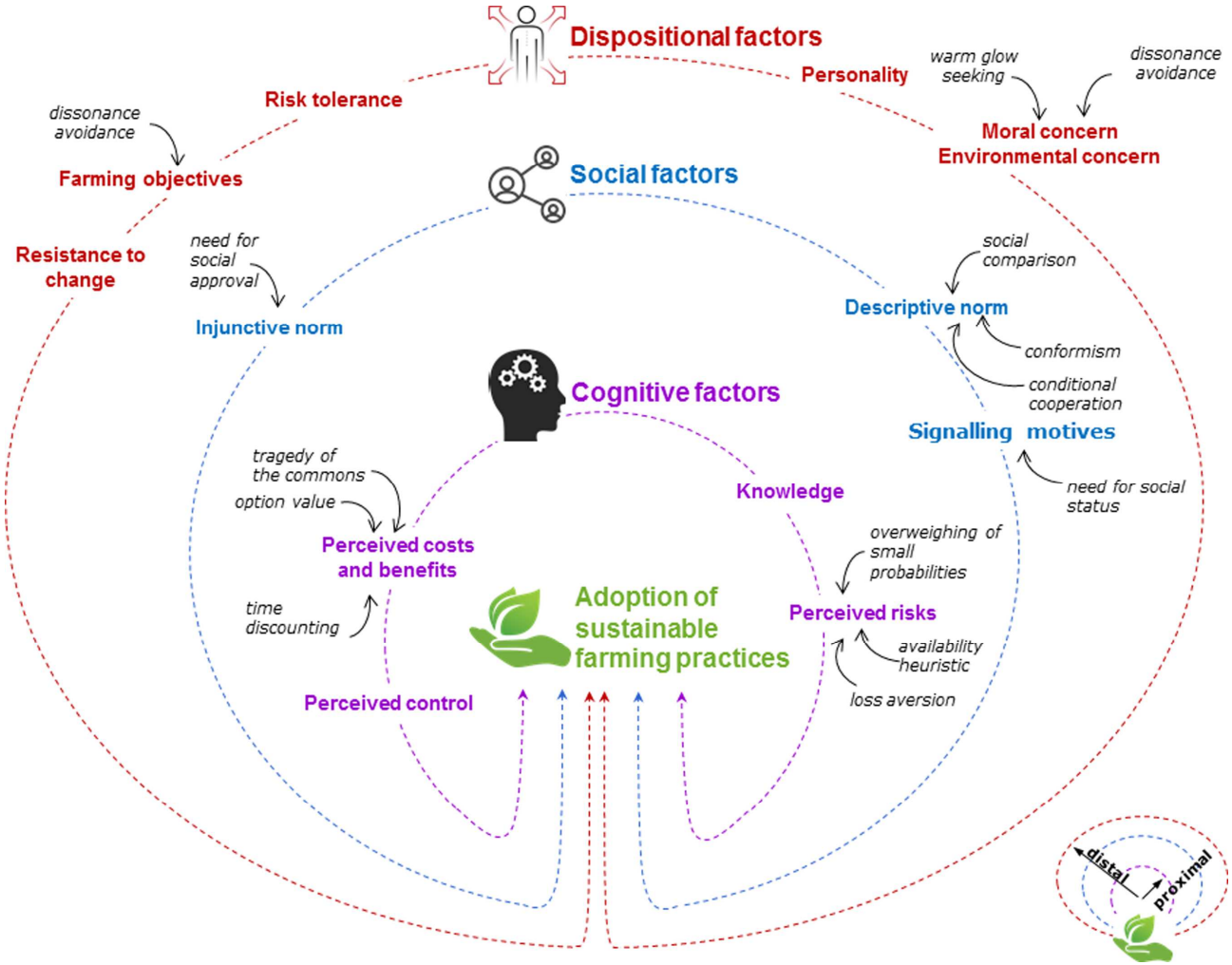
Fig. 1. An integrated framework of behavioural factors affecting farmers' adoption of environmentally sustainable practices



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What do behavioural studies teach us?

Dessart et al. (2019) show that

- “extraversion, openness to new experiences, risk seeking, moral and environmental concern, as well as lifestyle farming objectives are associated with higher adoption of sustainable practices.”
- “Conversely, being resistant to change and moved by economic objectives makes farmers reluctant to convert.”

They state that “ a more long-term strategy, […], entails increasing farmers’ environmental concerns and promoting conservation as a farming objective, as well as boosting consumers’ willingness to pay for environmentally friendly food.”

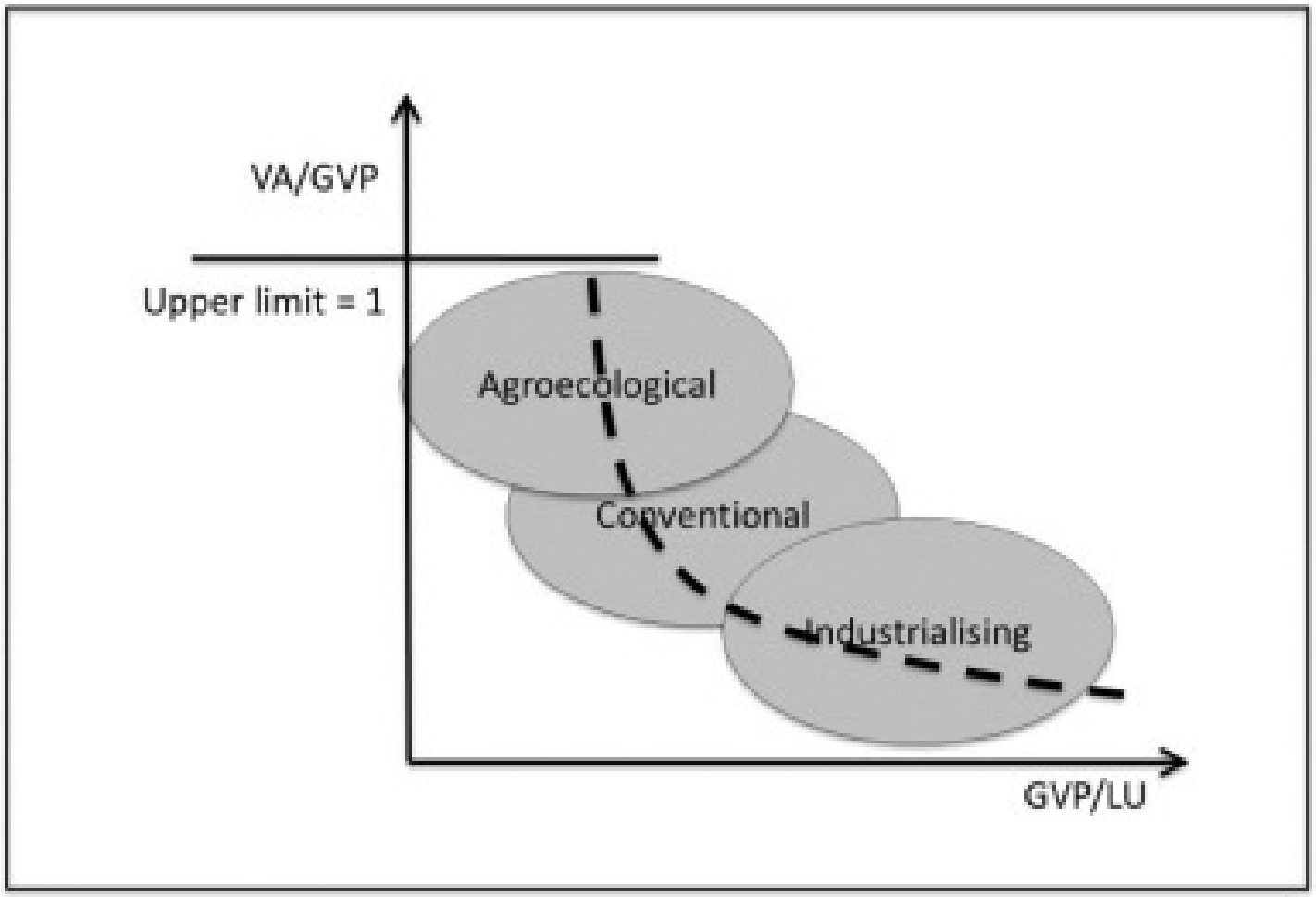
What do behavioural studies teach us?

Behavioural studies have attention for

- perceived costs and benefits and risk
- perceived control
- role of supply chain actors (directly) and final consumers (indirectly)
- (type of practice?)

But they miss a **managerial** approach:

- strategic and operational fit
- change of business model **in addition to** change of practice



VA = value added
GVP = Gross Value of Production
LU = Labour unit

Source: van der Ploeg et al. (2019), The economic potential of agroecology: Empirical evidence from Europe, Journal of Rural Studies 71, 46-61

Strategic differences between agro-ecology and industrial agriculture

1. Higher reliance on internal resources (less expenses)
2. Less specialised (more diversified output)
3. Higher focus on use-efficiency of internal resources through synergies
4. Centrality of labour in farming (technical efficiency increases are generated instead of bought)
5. Alliances among farmers and with consumers eading to better prices

Source: van der Ploeg et al. (2019)

Business models

A **business model** addresses how value is created, captured and delivered:

- Customer value proposition (**value creation**)
- Profit formula (**value capture**): revenues & costs
- Key resources required to deliver the value proposition + key operational and managerial processes to deliver value in a consistent way (**value delivery**)

Business model components

1. How do we create value? (factors related to the offering)
2. Who do we create value for? (market factors)
3. What is our source of competence? (internal capability factors)
4. How do we competitively position ourselves? (competitive strategy factors)
5. How do we make money? (economic factors)
6. What are our time, scope, and size ambitions? (personal/investor factors)

Source: Morris et al. (2005), The entrepreneur's business model: toward a unified perspective, Journal of Business Research, 58, 726-735

	Conventional farm	CSA farm	Missing
Component 1: Offering	Standardized product, sorted and packaged Narrow and shallow lines Internal manufacturing Indirect multichannel distribution	Limited customized product mix On-farm experience Broad lines with medium depth Internal manufacturing Direct distribution	Broader product mix (staple food)
Component 2: Market	B2B International Wholesaler Broad market Transactional	B2C Local Final consumer Niche market Relational	B2B2C Regional Broad market
Component 3: Internal capability	Production system	Production system/ internal resources	Supply chain management
Component 4: Competitive strategy	Low cost	Intimate customer relationship	Innovation leadership
Component 5: Economics	Spot market High operating leverage High volume Low margin	Prepaid membership fees Low operating leverage Low volume Medium margin	Labour cost
Component 6: Purpose	Income	Subsistence	

Internal barriers for CEBM

Learning from Circular Economy Business Models (CEBM)

- **Financial**
  - Lack of financial resources
  - High up-front investment costs
  - Higher costs related to CEBM (e.g. collection)
  - Unclear financial business case
- **Organizational**
  - Administrative burden
  - Organization of reverse infrastructures
  - More complex management and planning processes
- **Knowledge and technology**
  - Lack of technical know how and expertise
  - Lack of information/data

Source: Based on Vermunt et al., 2019, J. Cleaner Production

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External barriers for CEBM

- **Supply chain**
  - Lack of partners and low availability of materials
  - Higher dependence on external parties
  - Lack of info exchange between supply chain actors
  - Conflicting interests between actors in the supply chain
  - Bad re-use practices/reluctance of third parties

- **Market**
  - Low virgin material prices
  - Lack of consumer interest/ non-acceptance of CEBM
  - Resistance from stakeholders with vested interests in linear economy

Source: Based on Vermunt et al., 2019, J. Cleaner Production

External barriers

- **Hard instutions**
  - Ineffective recycling or waste policies
  - Incentives that promote material consumption over services (e.g. VAT)
  - Specific current accounting rules and management systems that are inappropriate for CEBM
  - Lack of standards and guidelines for repurposed products

- **Soft institutions**
  - Lack of awareness and sense of urgency within society

Source: Based on Vermunt et al., 2019, J. Cleaner Production

Concluding remarks

- Behavioural factors matter for ecological transition, but they are very context-specific
- Change in agricultural practice needs to go hand in hand with change in business model
- Attention mainly on internal value delivery model (higher reliance on internal resources) and less on value creation and capture (including supply chain management)

More information

- LIFT: www.lift-h2020.eu
- SUREFARM: surefarmproject.eu
- FOX: www.fox-foodprocessinginabox.eu/