Entrepreneurial Behavior in Agri-Food Supply Chains: The Role of Supply Chain Partners

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Introduction

- The global agri-food system is becoming increasing complex and dynamic
  - Increased level of uncertainty
  - Emergence of different types of organizational arrangements
  - Segmented markets and customization
  - Speed of adoption of technological innovations
- These changes place considerable strain on an agribusiness or food manager's decision-making abilities.

However….

- Markets that are characterized by disequilibrium conditions also provide opportunities for entrepreneurship
  - Exploitation of asymmetric information and other market frictions (Hayek, 1945)
  - The discovery of unique profit opportunities (Mises, 1963; Kirzner, 1979, 2000)
  - Innovation (Schumpeter, 1934)

- Entrepreneurship is a process in which firms search for, discover and exploit new profit opportunities by engaging in arbitrage and/or innovation activities (Ross and Westgren, 2005)

Problem Statement

- Entrepreneurial opportunities are not often exploited in isolation
  - In particular, given the structure and length of agri-food supply chains, alliances with existing supply chains actors are often required
- The purpose of this study is to investigate the differences in entrepreneurial performance between firms that discover and exploit new wealth creation opportunities:
  - Within existing supply chains, or
  - By establishing new supply chain

Entrepreneurial Theory

- Entrepreneurial capabilities include: alertness (Kirzner), subjective judgment (Knight, Foss & Klein), dispersal ability (Ross) and uncertainty-bearing (Knight, Cantillon)
  - Alertness
    - Refers to the ability to discover and recognize potential profit opportunities that may not be seen by others

- To create wealth, firms must extract rents from entrepreneurial opportunities
  - Efficiency
    - The rate at which a firm can convert resources into their chosen good or service

Proposition 1: *Ceteris paribus*, the greater the alertness of the firm, the entrepreneurial rent is will generate.

Proposition 2: *Ceteris paribus*, the more efficient a firm is, the more wealth it will create.

Supply Chain Effects

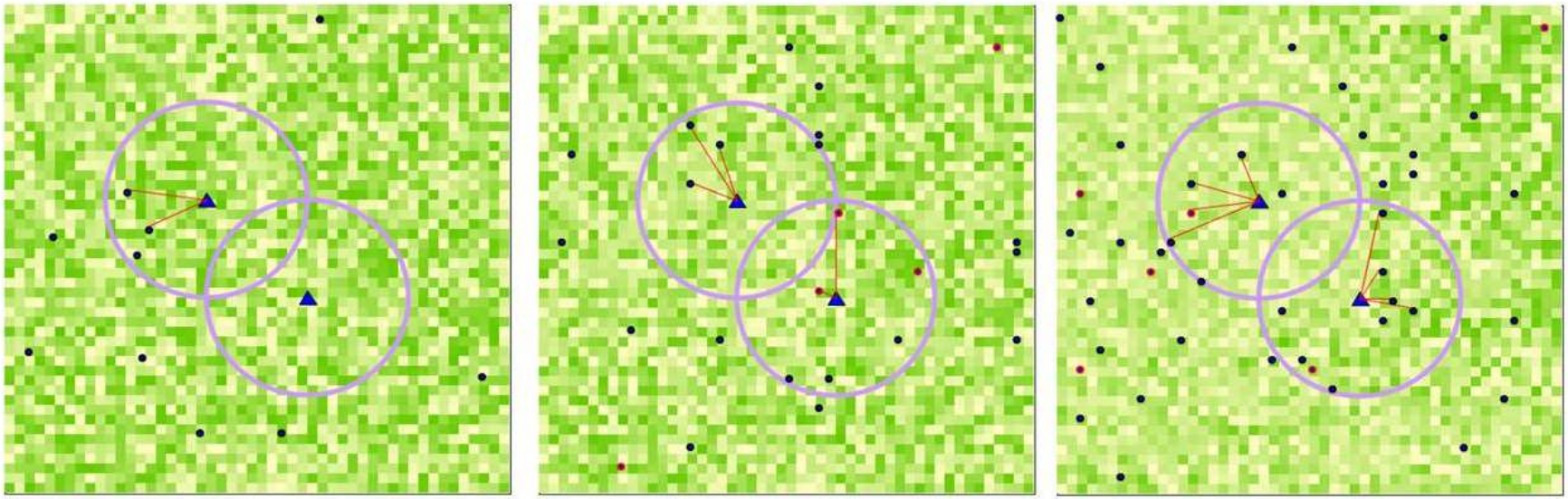
- Aligning with an existing supply chain actor may provide additional value to end users and potentially allow firms to appropriate greater rents from their entrepreneurial activities via (Barney 2002):
  - The exploitation of economies of scale
  - Learning
  - Management of risk and cost sharing
  - Facilitation of collusion
  - Management of uncertainty
- On the other hand, supply chain alliances may result in rent-sharing and agency costs that can reduce the economics returns available to entrepreneurial firms (Barney, 2002)
  - Adverse selection
  - Moral hazard
  - Holdups

Proposition 3: *Ceteris paribus*, the existence of supply chain partners will increase the value of entrepreneurial ventures.

Agent-based Simulation Model Setup (adapted from Ross, 2007)

- Simulation Landscape
  - 50X50 cell strategic landscape
  - Each cell representing an unique strategy and payoff
- Two Agents:
  - Firms (Alertness, Efficiency, Linkability)
  - Supply Chain Partners (Region Size, Attraction, Power)
- Firm Behavior and Adaptation
  - Search and Discovery
  - Rent Extraction
  - Learning (from partners, contacts, and time in niche)
- Interactions
  - Firm-Firm (i.e. competition)
  - Partner-Partner (i.e. competition)
  - Firm-Partner (i.e. cooperation)
- Experimental Design
  - 16 experiments
  - Measurement based on survivability and wealth created

Illustration of Model



T = 0 T = 100 T = 200

Environmental Munificence:

Resource Level

0 100

Key Results

- The results of the simulation experiments largely support the research propositions introduced
  - Wealth and survivability both increased with a firm's level of AL and EF – true for both L and NL firms
  - The ability of firm to align with strategic partners increased wealth and survivability

- Specific supply chain effects
  - Region Size – no effect on perf., -ve effect on # of contacts and yrs in alliance
  - Attraction – -ve effect on perf.
  - Power - +ve effect on perf., for NL firms selection pressure based on EF is reduced, +ve effect on # of contacts (clustering)
  - Learning - +ve effect, greater for L firms

- Unexpected results
  - The presence of existing supply chains decreased need for entrepreneurial capabilities (i.e. alertness) for both linkable and non-linkable firms
    - Compared to BASE model, selection pressure based on EF and AL is reduced for supply chain models

Conclusions

- For agri-food entrepreneurs, aligning with a existing supply chain can significantly increase survivability and enhance performance
  - The exploitation of economies of scale
  - Learning
  - Management of risk and cost sharing
  - Facilitation of collusion
  - Management of uncertainty
- It is apparent that the characteristics that reflect an entrepreneur's ability to link to, and share rents with, supply chain partners requires further investigation
  - In particular, results suggest that the presence of existing supply chains may decrease need for entrepreneurial capabilities – WHY?
  - Does this mean that industries with longer supply chains are likely to have fewer entrepreneurial ventures?