

Integrated modeling of extended agro-food supply chains: A systems approach

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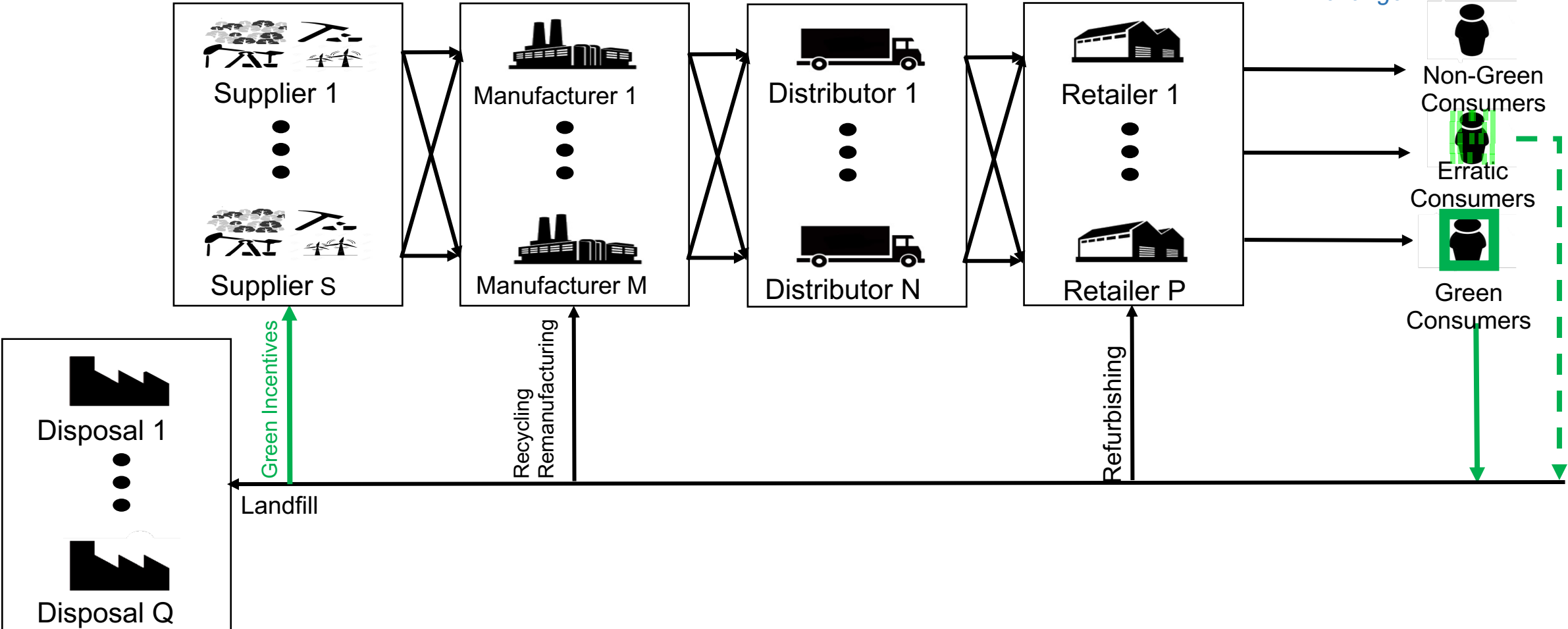
Extended sustainable supply chain (ESSC)

- Pro-Environmental Behavior

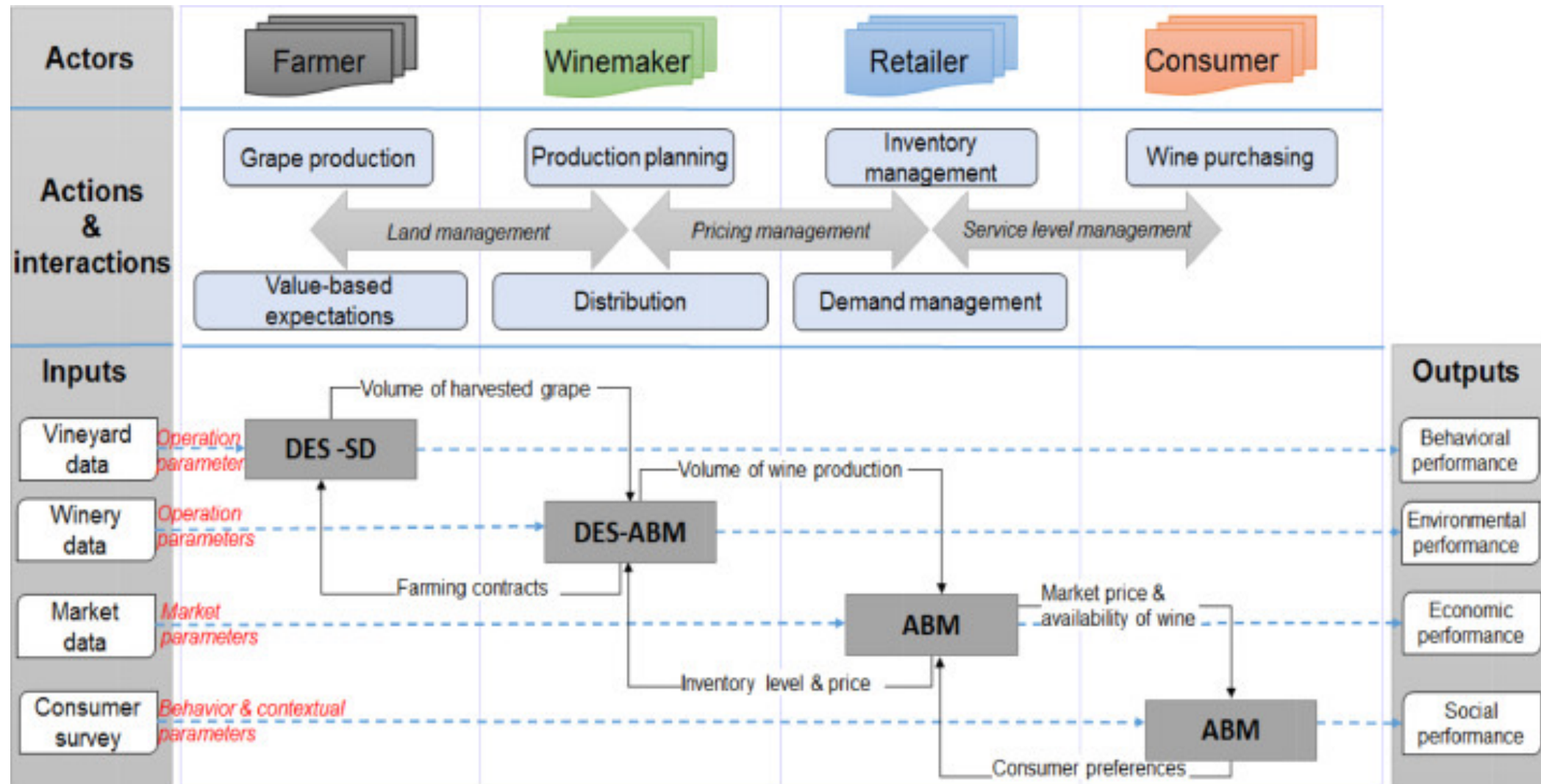
- Environmental behavior factors

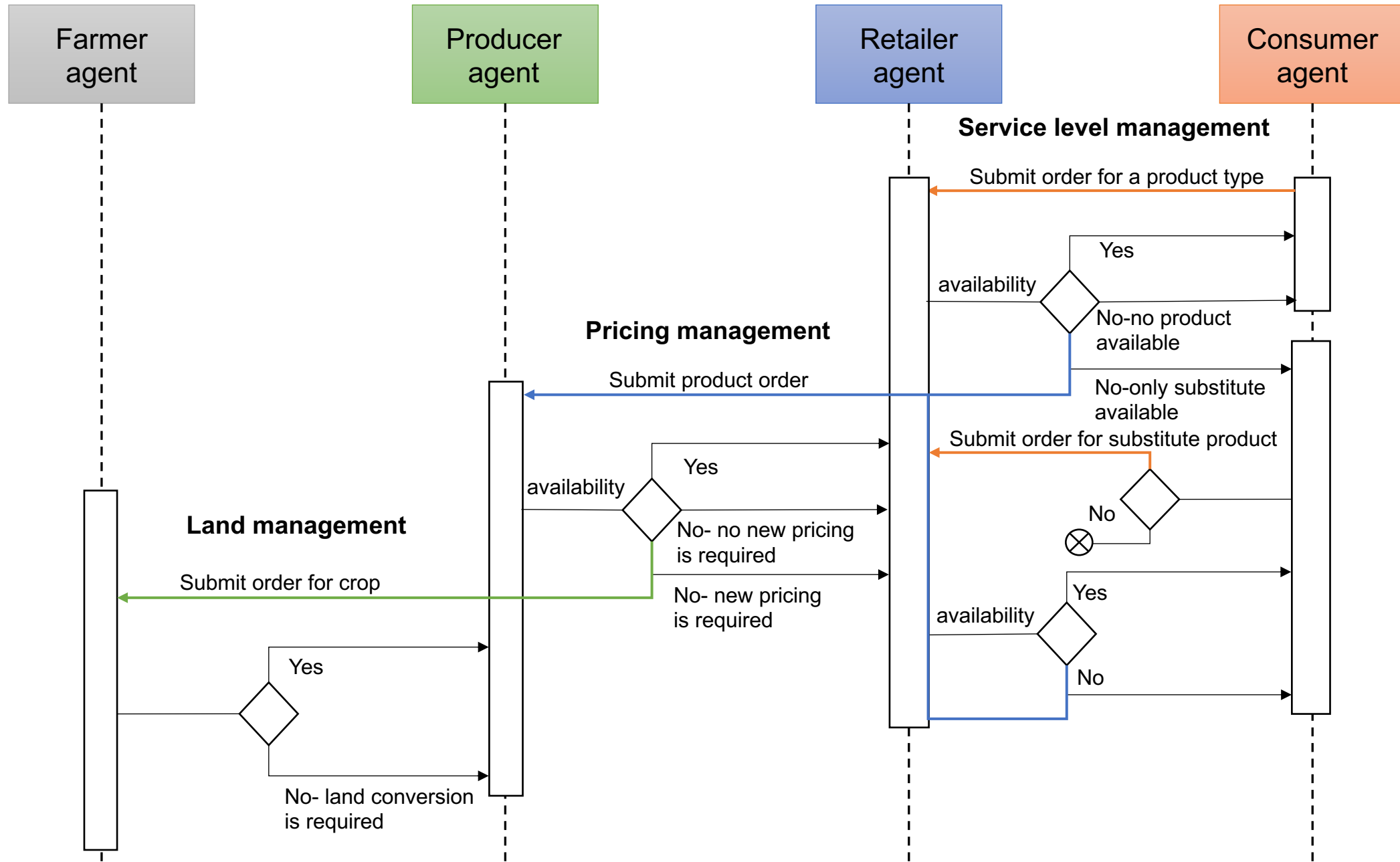
- Strategies for behavior change

- Sustainable Supplier Selection
- Sustainable Process
- Product Recovery
- Waste Management
- Sustainable Product Design
- Sustainable Transportation
- Reverse Logistics
- Sustainable Network Design

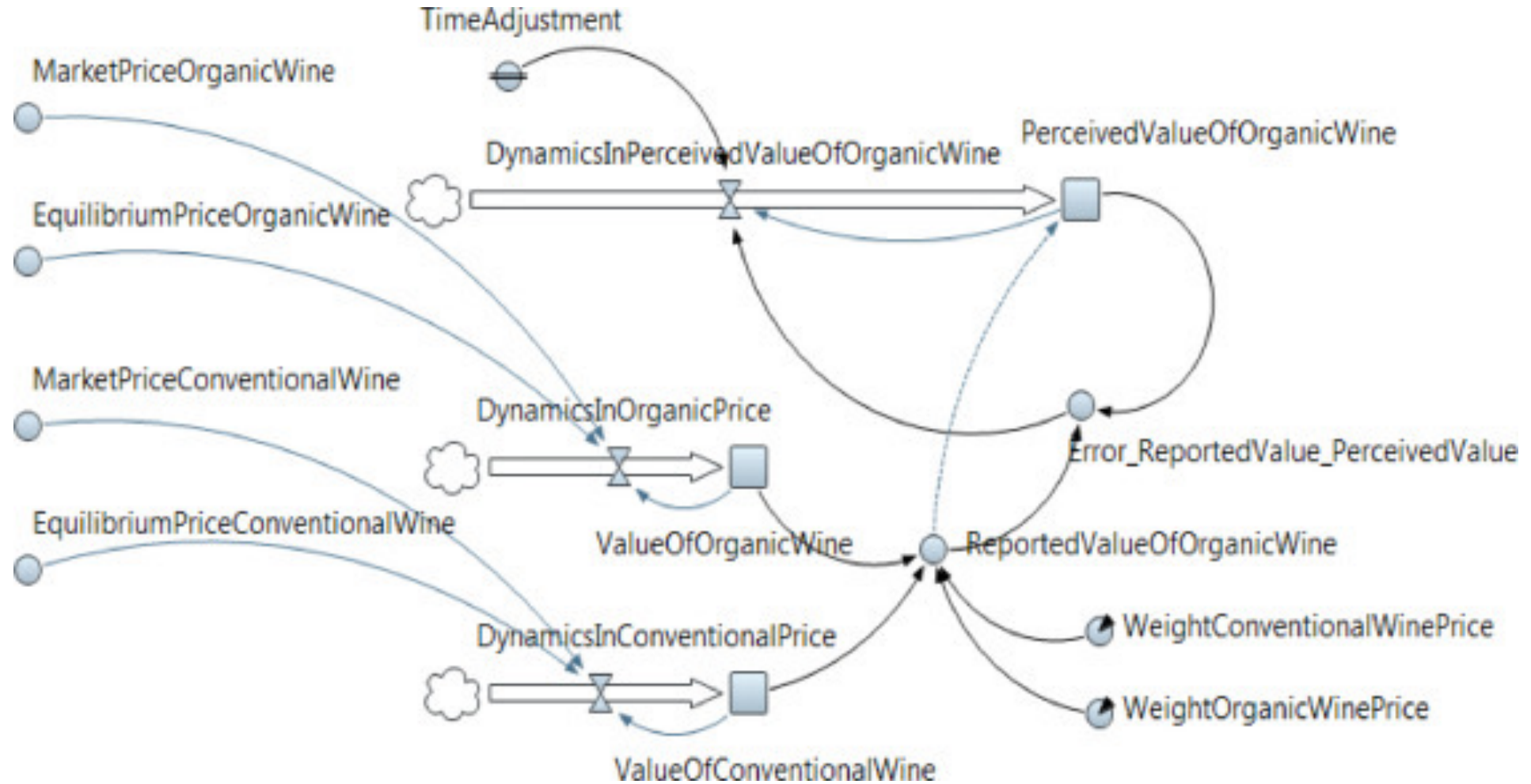


ESSC modeling framework

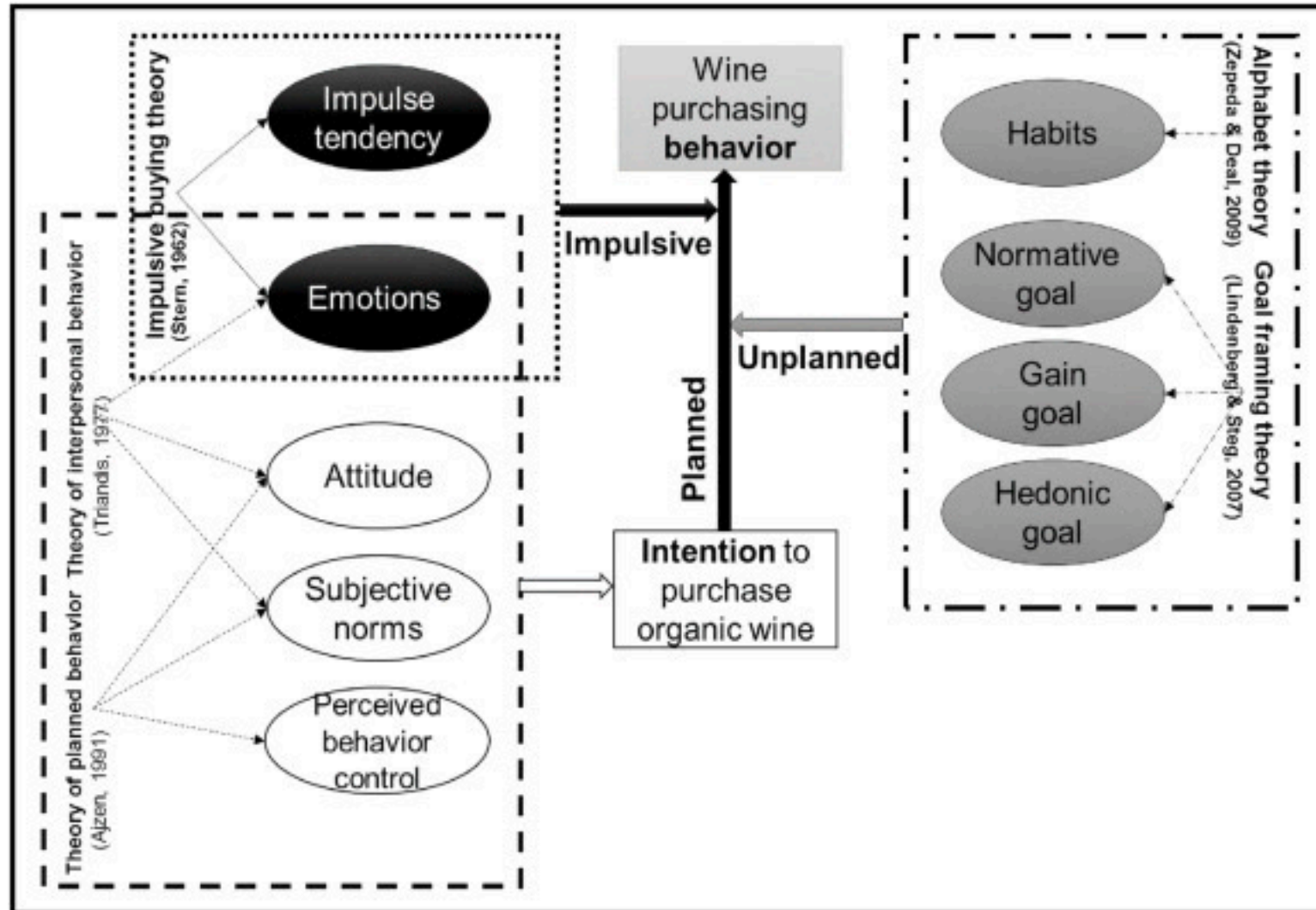




Value-based expectations of farmers about organic farming

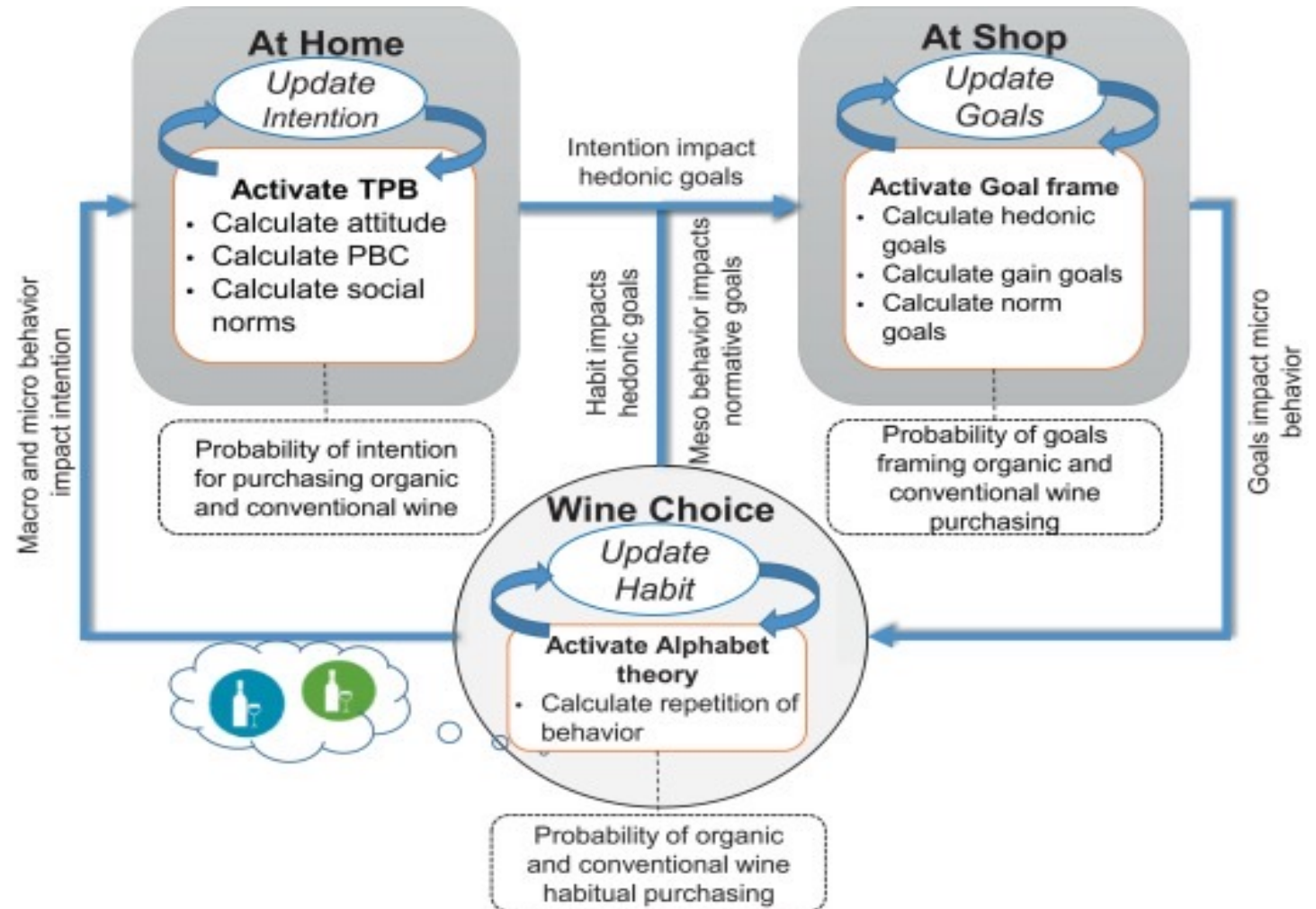


Theoretical framework for food purchasing decisions

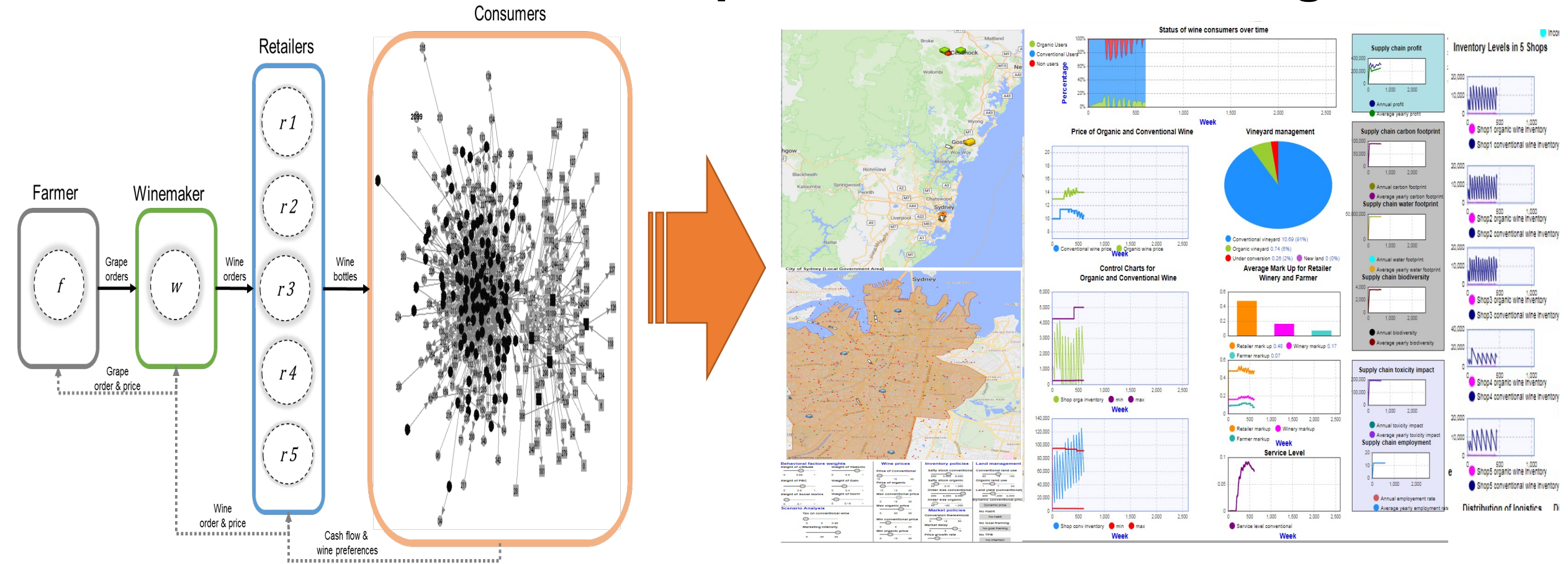


Household wine-related decision-making process

- Socio-demographics
- Behavioral factors
- Shopping and drinking-related patterns

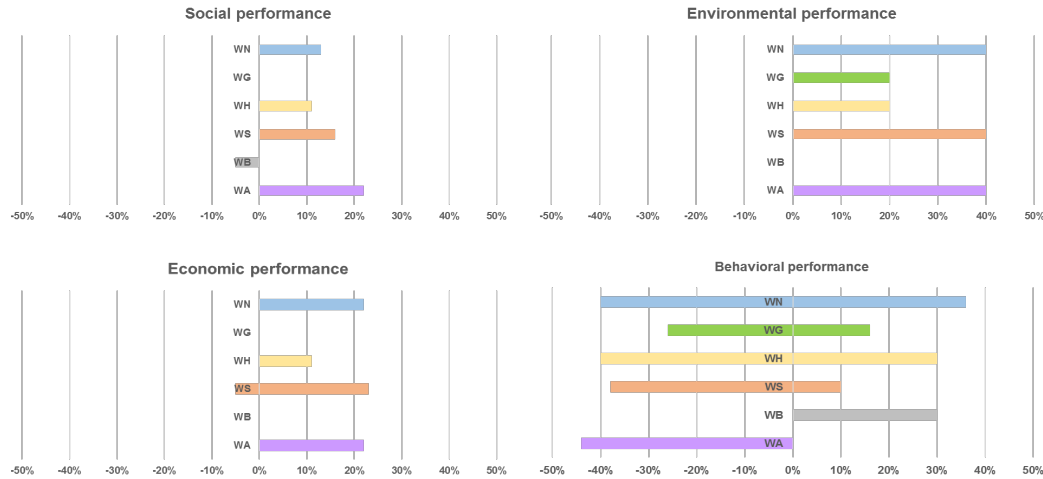


Australian Wine supply chain: a case study where models are used to incorporate behavioral changes

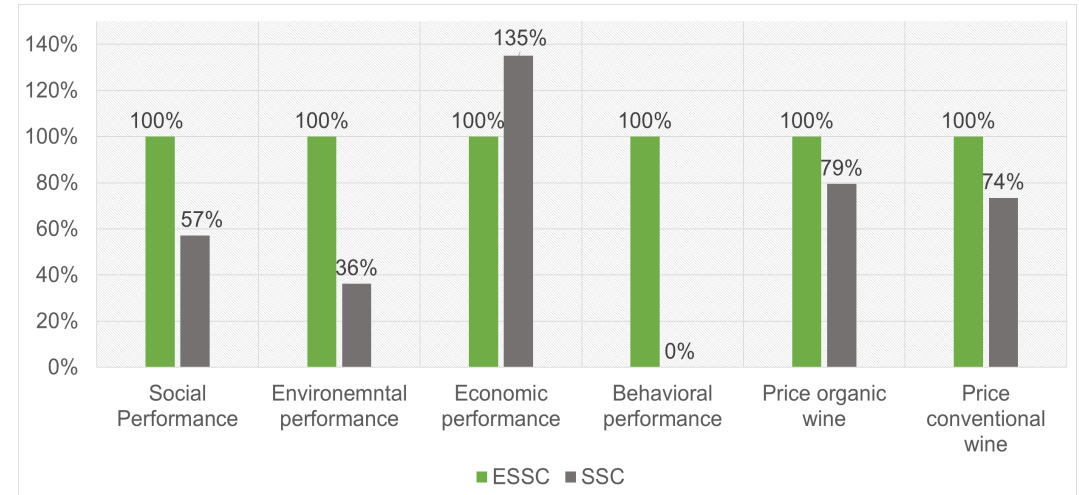


Model calibration, validation, sensitivity analysis

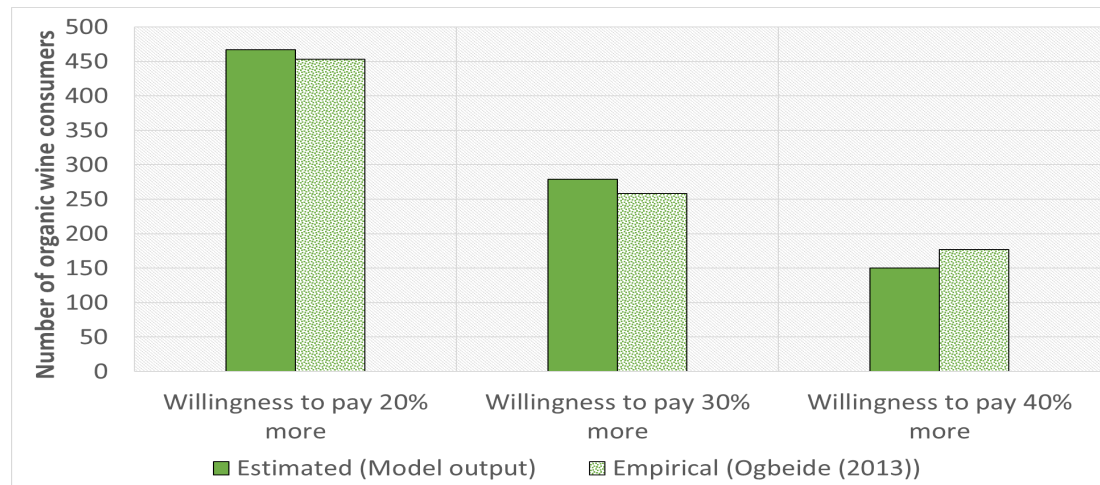
Local sensitivity analysis



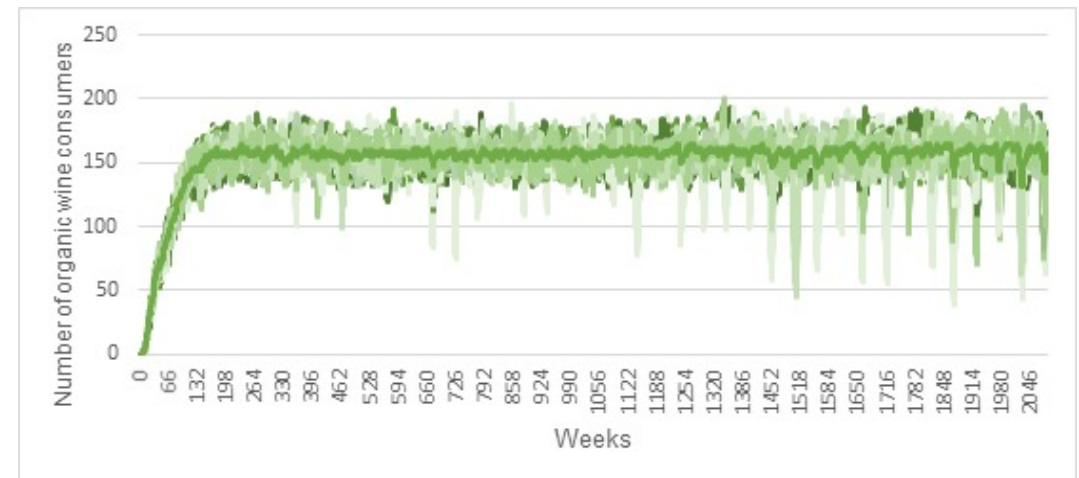
Structural sensitivity analysis



Validation



Baseline

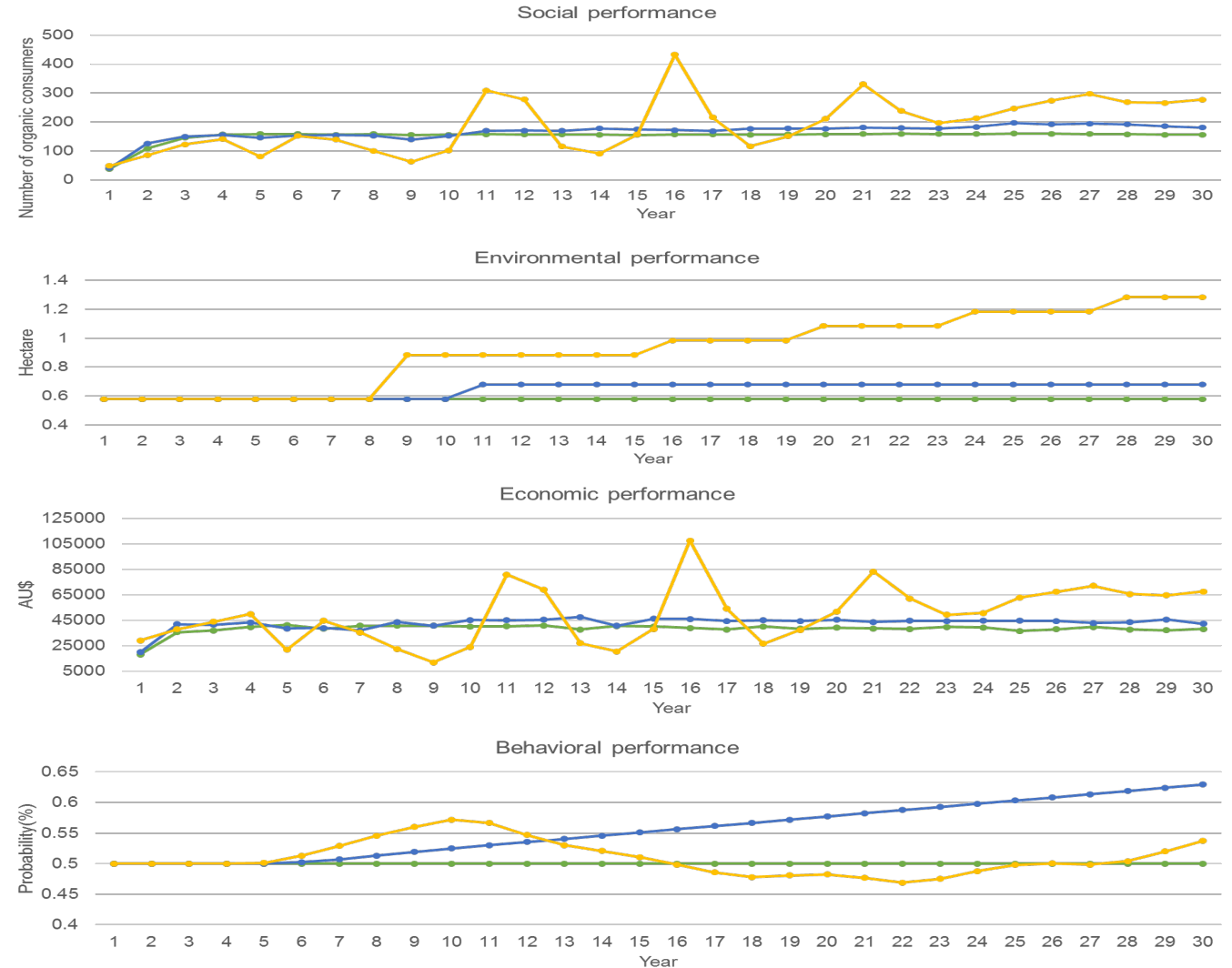


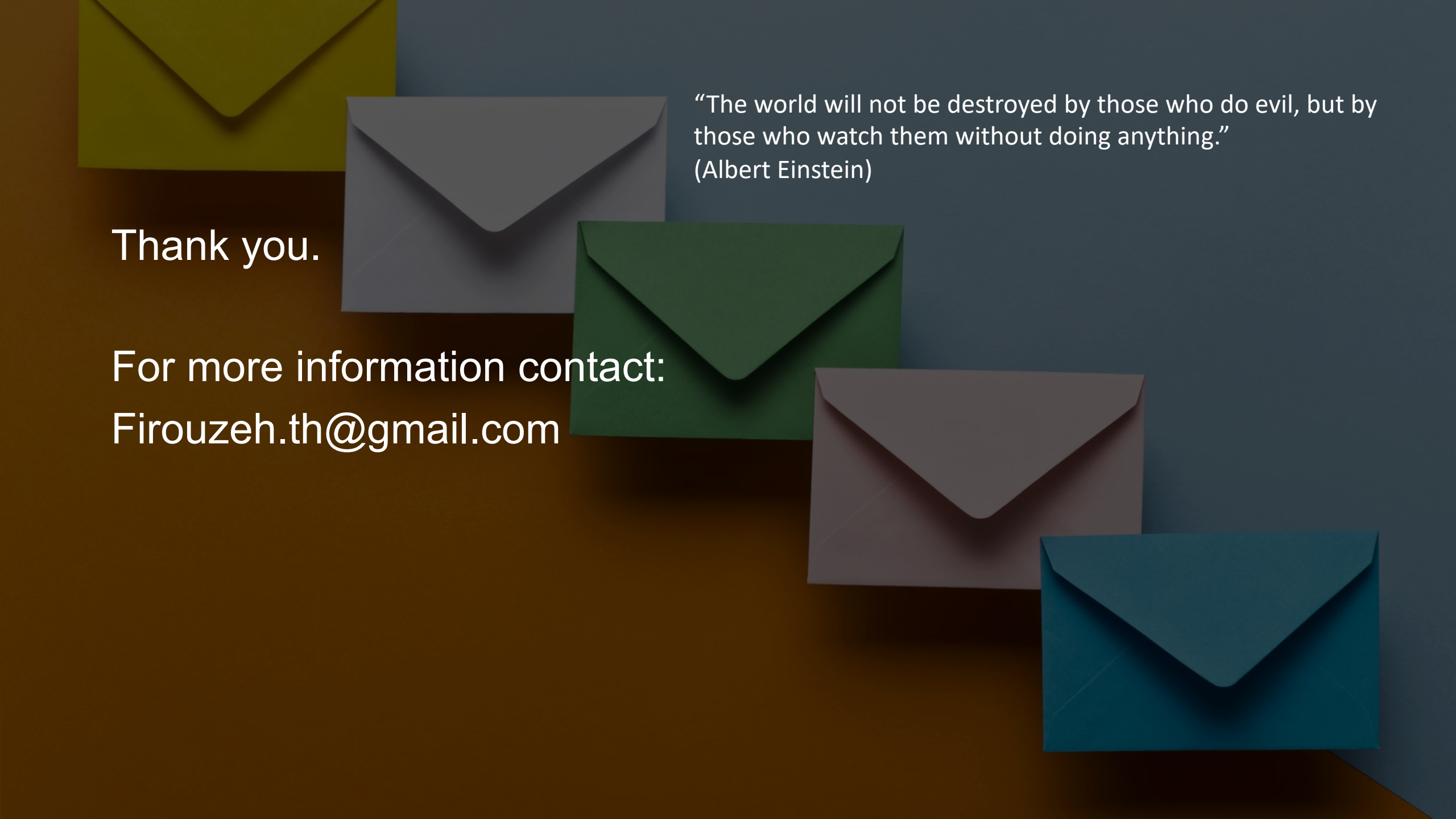
Scenario results

Scenario 1: There is a 20% increase in the number of middle and high-income consumers.

Scenario 2: The effect of neighborhood-level characteristics on the wine preference of consumers is restricted.

Wine Australia “The health and well-being trend was happening in Australia prior to the pandemic, as many consumers looked at lower alcohol, lower sugar and more organic products. But 2021 has seen this trend skyrocket, with Australia’s peak organic certifying body, Australian Certified Organic (ACO), revealing the scale of the growth recently.”





“The world will not be destroyed by those who do evil, but by those who watch them without doing anything.”
(Albert Einstein)

Thank you.

For more information contact:
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