

Institutional characteristics and the performance of
emerging horticultural ventures in New Zealand

Preliminary Findings

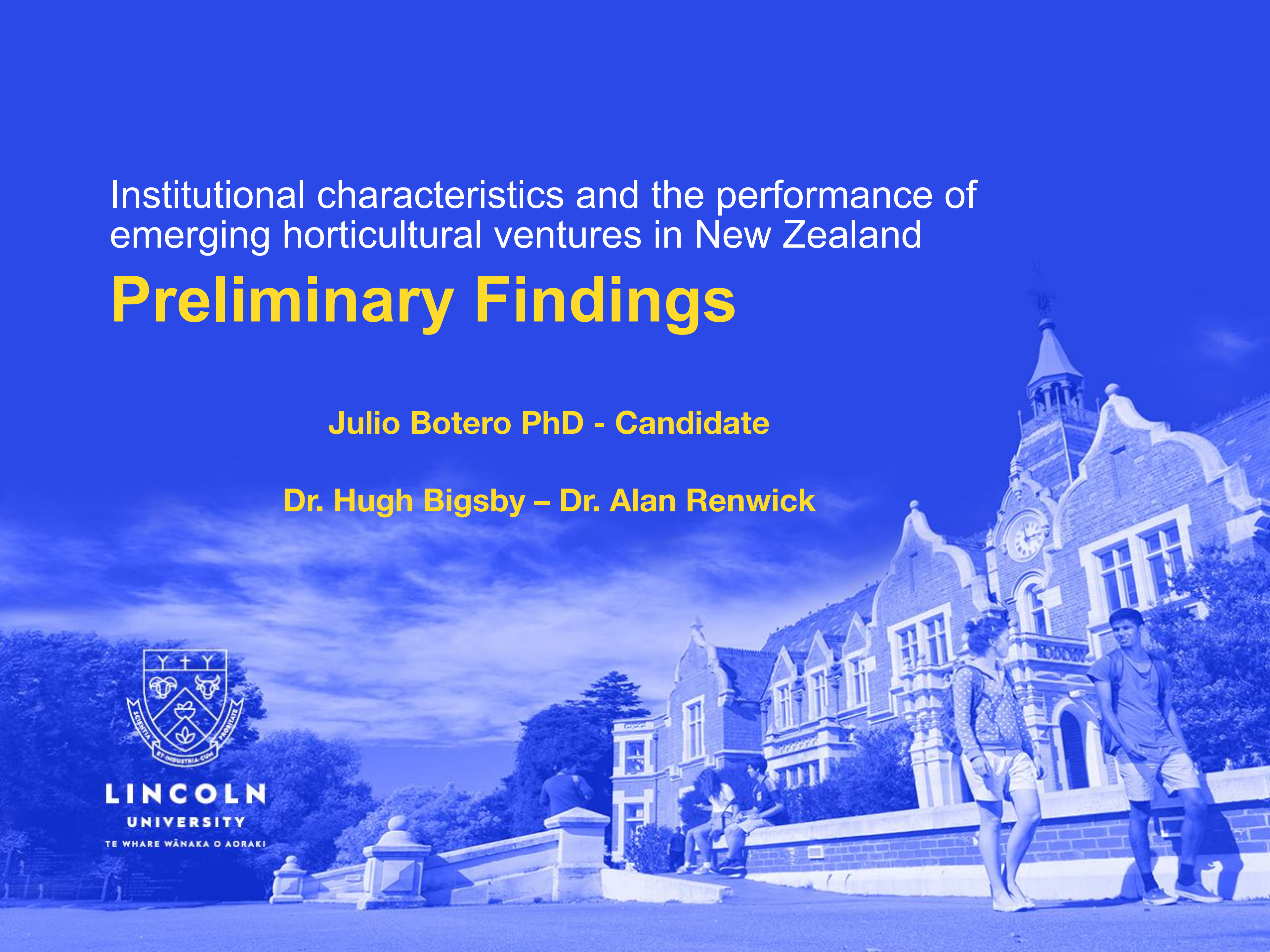
Julio Botero PhD - Candidate

Dr. Hugh Bigsby – Dr. Alan Renwick



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Outline

- Introduction
- Research Problem
- Institutions and firm performance
- Objectives & Methods
- Findings
- Preliminary Conclusions
- Questions



Introduction

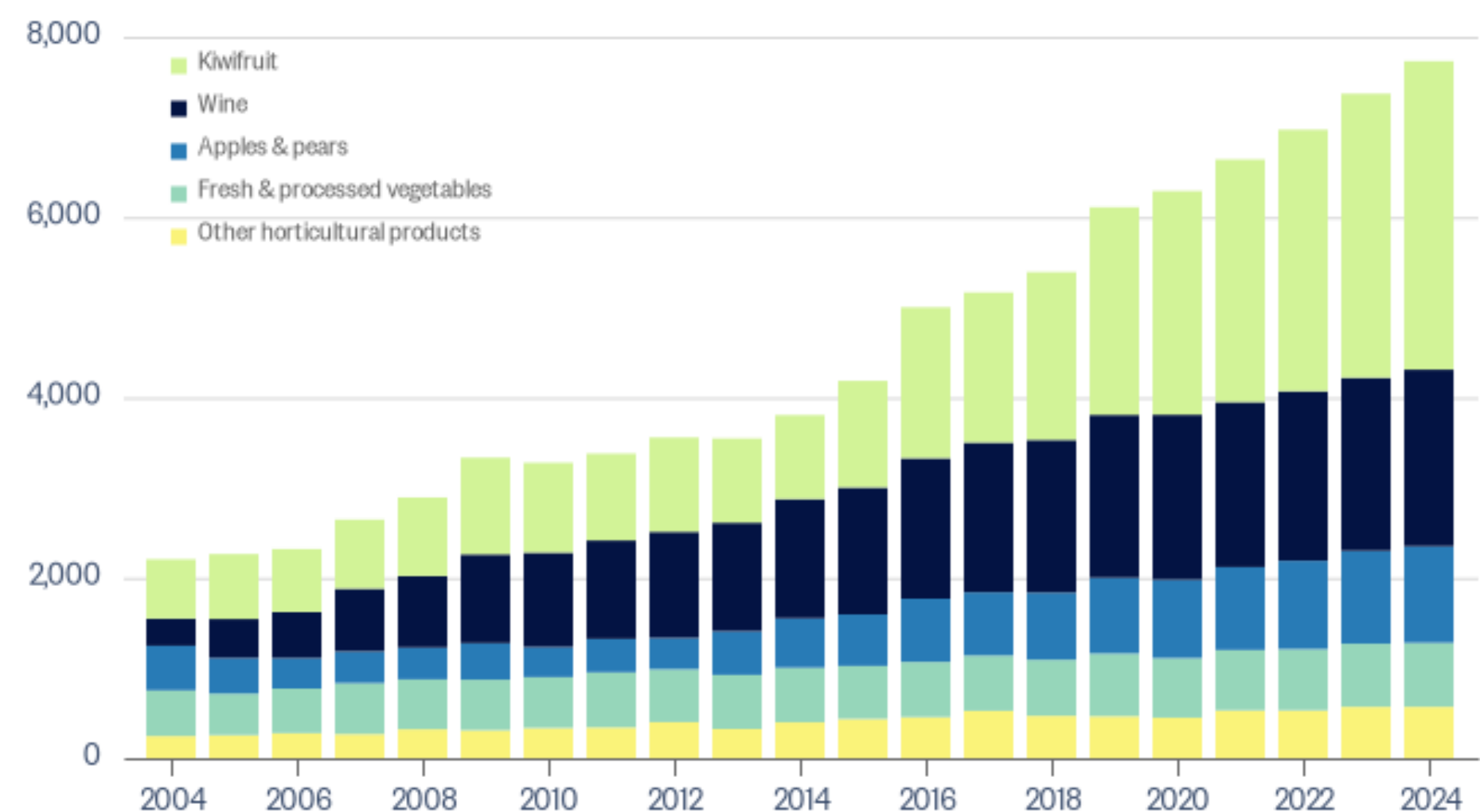
- New Zealand horticulture exports growing rapidly
- Growth concentrated in a few key sectors
- How do you unlock the potential of other horticulture sectors?
- What are the key factors behind export success?

figure.nz

Export value of the New Zealand horticulture industry by sub-sector

Year ended June 2004–2019, 2020–2024 forecast, NZD millions

Provider: Ministry for Primary Industries

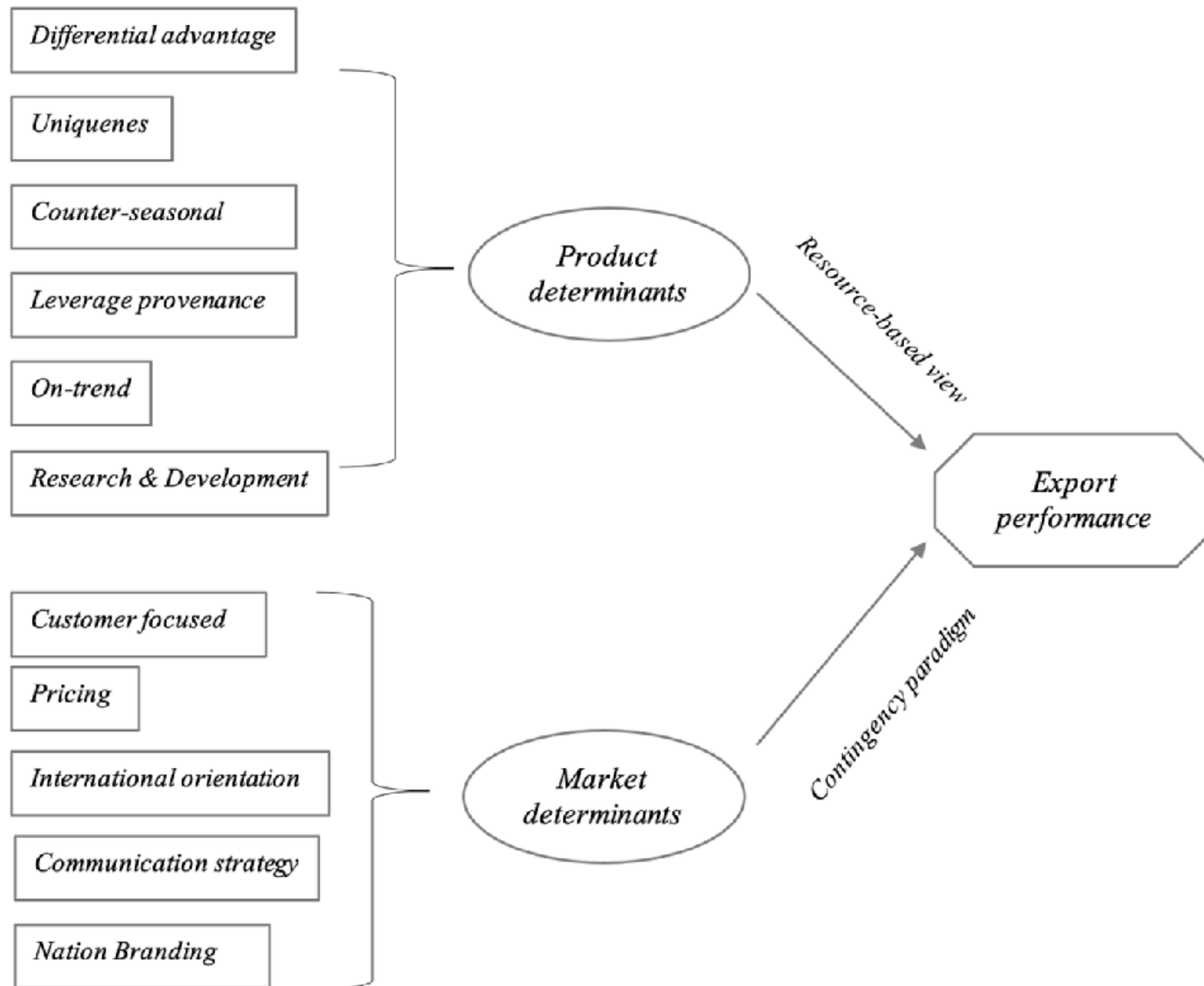


Research Problem

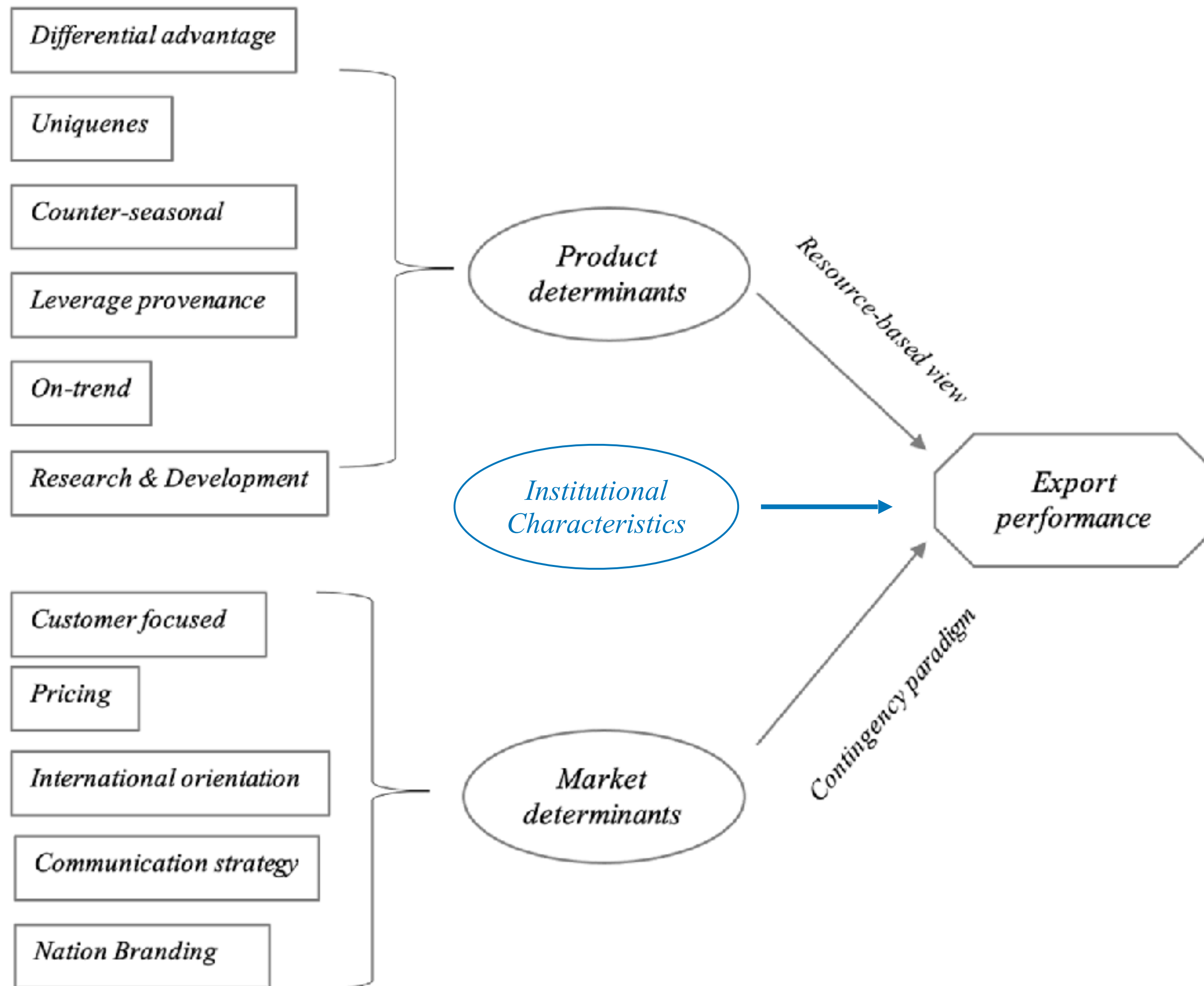


- How do we get other horticultural sectors to experience the remarkable success of kiwifruit and apples?

Traditional Measurement for Export Performance

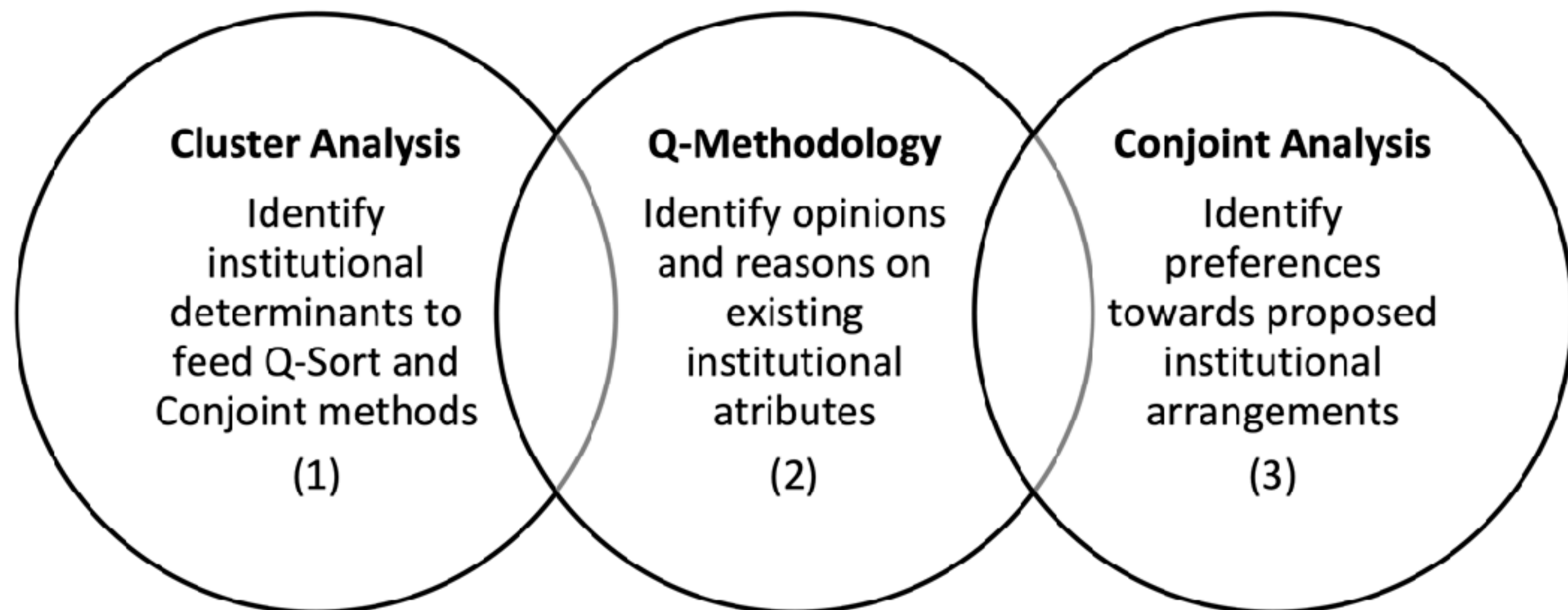


Updated Measurement for Export Performance



Research Objectives & Method

- To understand the contribution of institutional attributes to the performance of emerging horticultural ventures in NZ
- Questions:
 - What are the range of institutional attributes in New Zealand agribusiness, and are they related to export or market performance?
 - What are the preferences of producers towards different institutional attributes?
 - What are the potential institutional structures that link preferences and success?



Sample of the Questionnaire

How is the business structure? (Sole trader, partnership, trust, LLC, Co-op)

Do you belong to the industry body, association, cooperative?

Is there an enforcement mechanism for non-compliance with the established agreements?

Do you keep traceability records in your supply chain? How far?

How is the supply chain structured for your product?

Do you have a supply chain arrangement with anybody else? What is it? What's its legal form? how does it operate? (more than one?) (Partnership) (Alliance) (J.V.)

How would you describe the evolution of your business performance? (sales, revenues, productivity, orders, costs, profits)

Variables measuring institutional attributes & firm performance

Institutional characteristics

Firm Structure

Unregistered
Sole Trader
Partnership
LLC
LAQC
Trust
Coop

Collaboration

Industry body
Industry association
Formal contracts
Strategic Alliance
Joint Venture

Supply Chain Integration

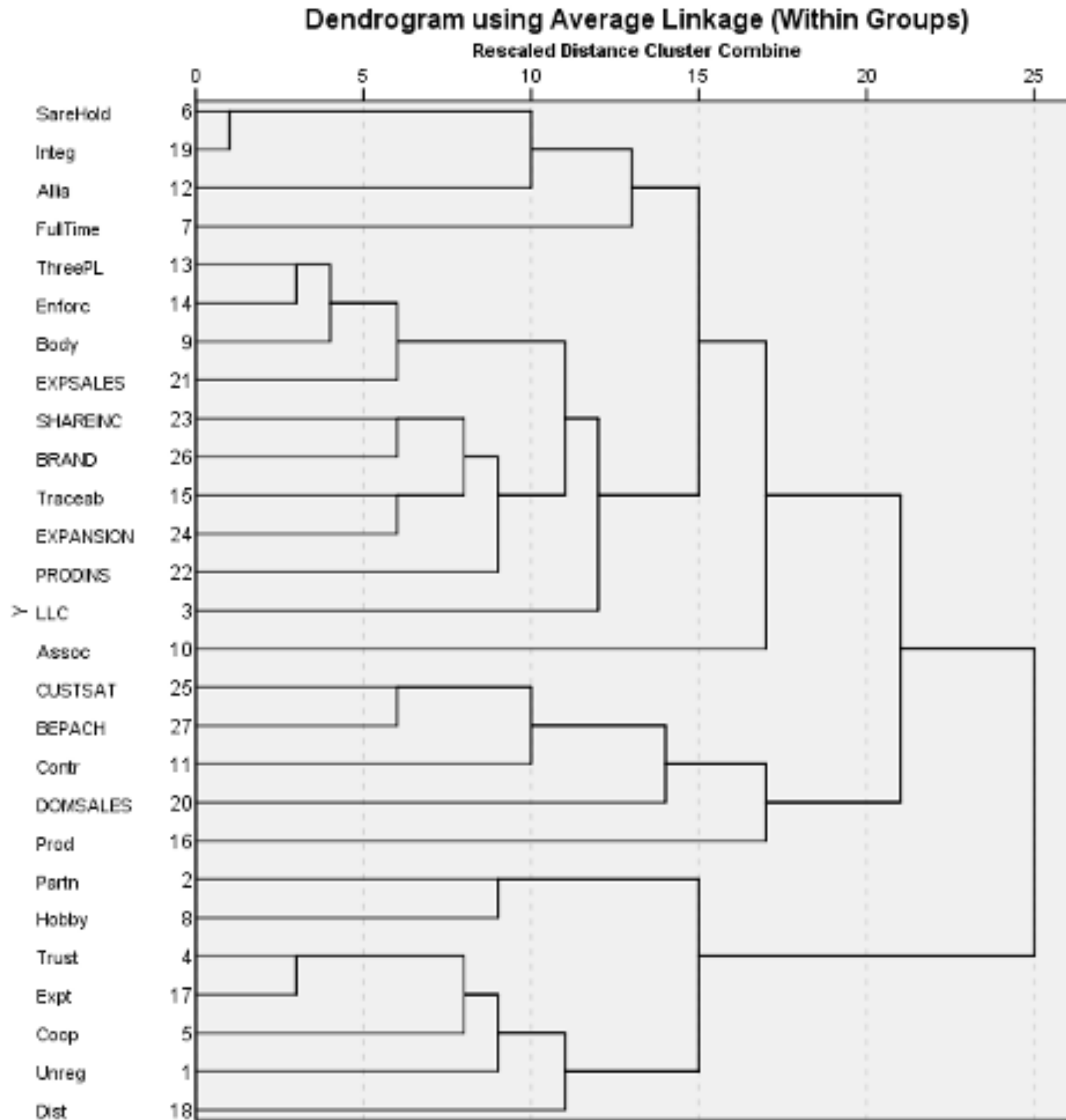
Production
Transformation
Exporter
Distribution
Integrated
Quality Assurance
Traceability

Performance indicators

Domestic sales did grow
Export sales did grow
Productivity increased
Market share increased
Ongoing expansion projects
Customer satisfaction
Company has a brand
BEP not yet achieved



Clustering by institutional attributes & firm performance



Clustering by institutional attributes & firm performance

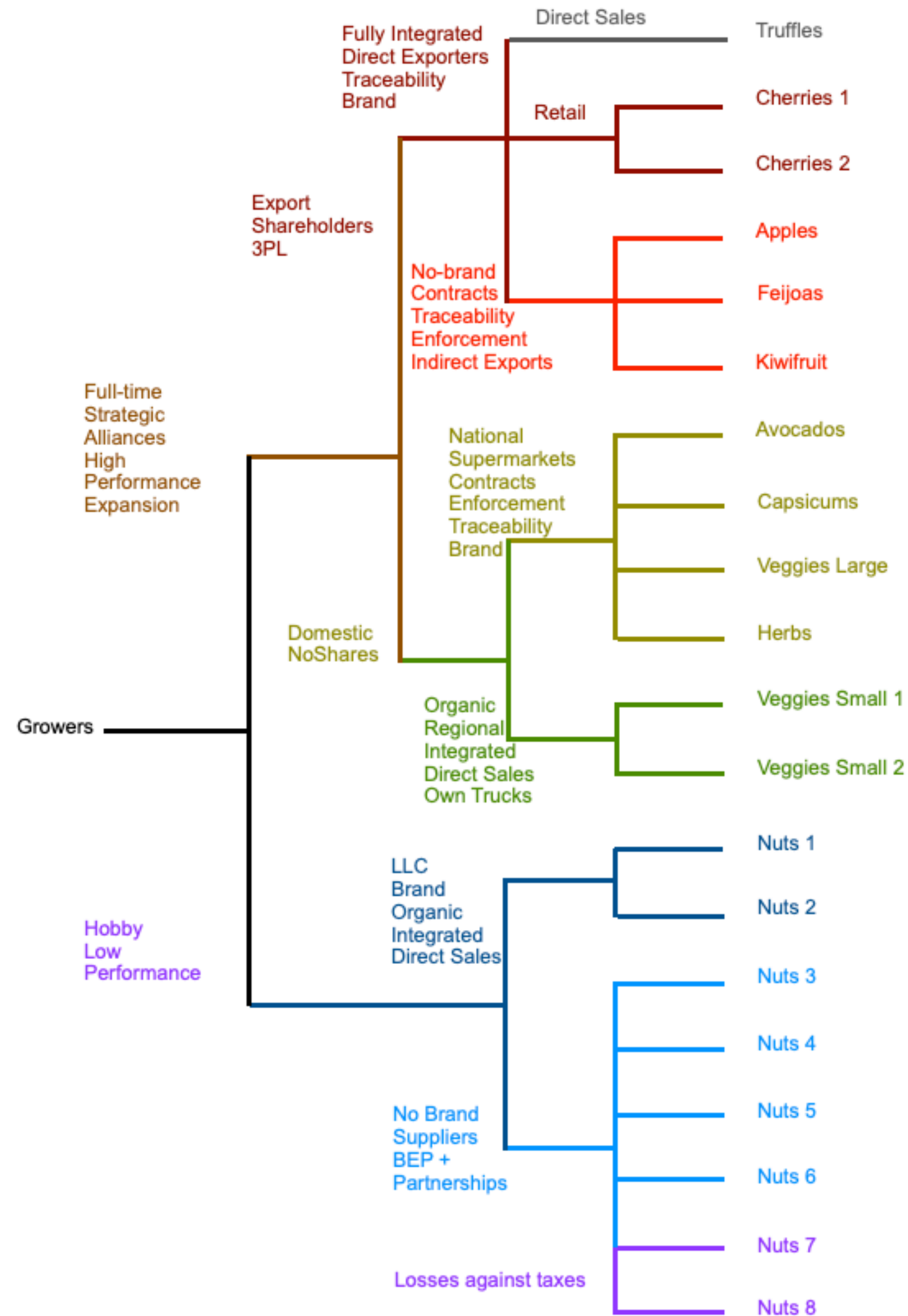
Ward's linkage and agglomeration schedule

Stage	Cluster Combined		Coefficients	Stage Cluster First Appears		Clusters
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
20	11	20	0.483	14	0	7
21	1	2	0.533	16	11	6
22	3	6	0.542	18	19	5
23	11	16	0.600	20	0	4
24	3	10	0.613	22	0	3
25	3	11	0.749	24	23	2
26	1	3	0.907	21	25	1

	Unreg	Partn	Trust	Coop	Hobby	Expt	Dist	Assoc	LLC	SareHol	FullTime	Body	Allia	ThreePL	Enforc	Traceab	Integ	Contr	Prod
	1	1	1	1	1	1	1												
EXPSALES								2	2	2	2	2	2	2	2	2	2		
PRODINS								2	2	2	2	2	2	2	2	2	2		
SHAREINC								2	2	2	2	2	2	2	2	2	2		
BRAND								2	2	2	2	2	2	2	2	2	2		
EXPANSION								2	2	2	2	2	2	2	2	2	2		
DOMSALES																		3	3
CUSTSAT																		3	3
BEPACH																		3	3



Clustering by institutional attributes & firm performance in CASES



Preliminary Findings

- **Cluster 1.**
- Growers of high-value and highly perishable products (truffles and cherries).
- High performing businesses.
- They are integrated businesses in New Zealand relying on key customers overseas.
- They mentioned they prefer to run an integrated business to avoid working with unreliable suppliers.
- Part of their success is due to building strategic alliances with key distributors in high-value foreign markets.

Preliminary Findings

- **Cluster 1.**
- Export suppliers of apples, pears, feijoas, and kiwifruit.
- Positive business performance.
- They have a long history and a strong relationship with the exporter;
- They all mentioned they don't imagine doing business differently.
- They have long term supply contracts.
- All of their production is sold to the exporter.

Preliminary Findings

- **Cluster 2.**
- Large-scale veggie growers.
- Positive business performance.
- These businesses are successful because of the scale.
- They are constantly negotiating supply contracts with the two supermarket chains in New Zealand.
- Some of them have wholly owned, and some partly own packing operations..

Preliminary Findings

- **Cluster 2.**
- Small-scale veggie growers.
- Average business performance.
- They are niche growers, focused on organic production, and not interested in upscaling their operations.
- Because of their size, they are fully integrated, from seedlings to the final customer.
- They are selling their produce in farmer markets and exploring online customer engagement.

Preliminary Findings

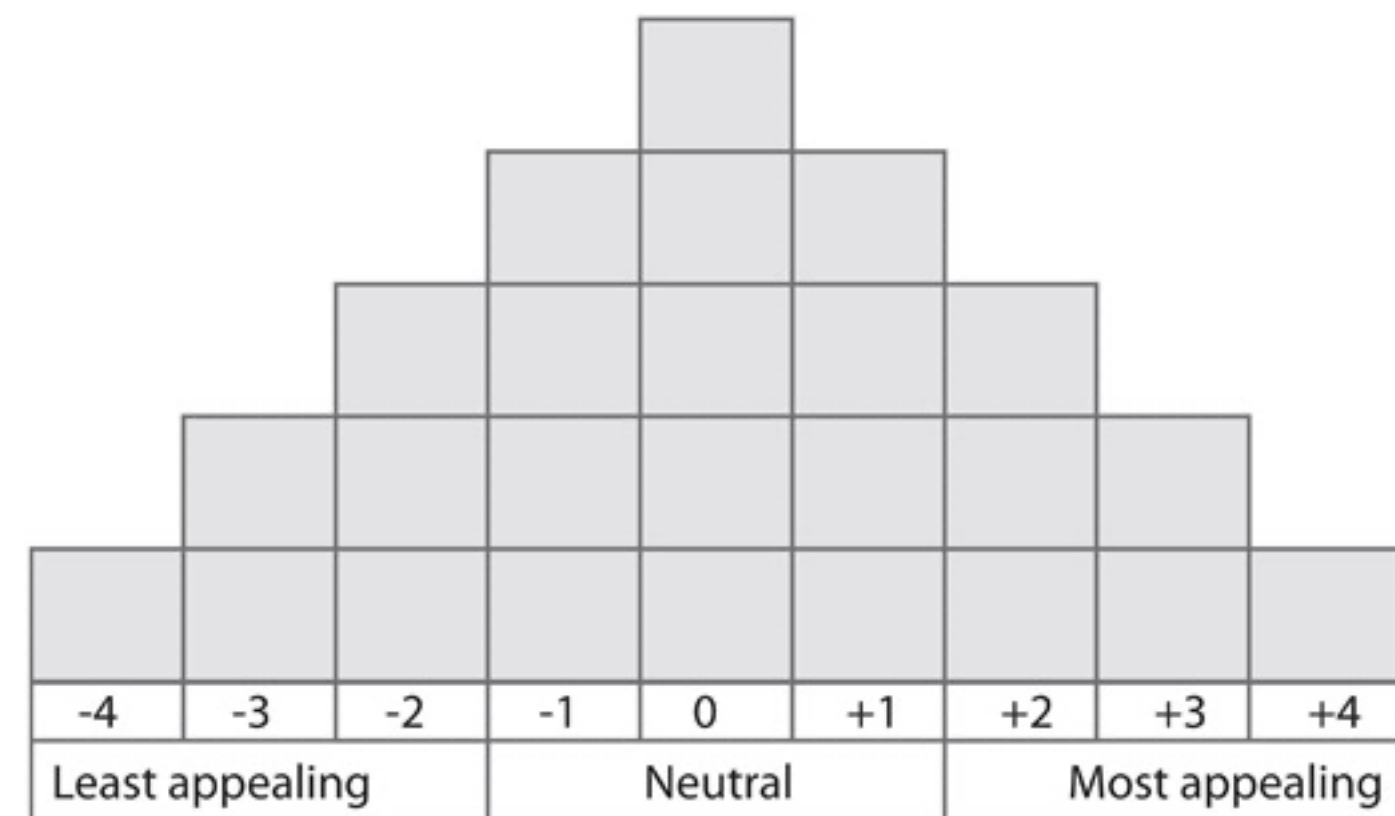
- **Cluster 3.**
- Hobby and part-time nut growers.
- Poor business performance.
- Most of them are transitioning from city full-time jobs to a farming lifestyle, and the plan is to get an additional income for when they retire.
- They don't want to deal with developing marketing campaigns, finding customers or bothering with sales..
- They prefer to supply a local nut processor.
- Some are still developing their orchards, so they have not yet reached the break-even point.

Stage 2

- The second question of the research is: What are the preferences of growers towards different institutional attributes?
- Once the clusters were organised, we extracted each group's essential characteristics in cards and re-wrote them as statements.
- To understand the preferences of growers, we asked them to sort the statements in a Q-grid based on their preferences in terms of organisational arrangements.
- For this research stage, we invited growers to participate in an online Q-sorting activity. Eighty growers received our communication, and half of them agreed to participate in the survey;
- After a preliminary filter, we obtained twenty-two completed questionnaires:

Q-Method Statements & Q-Grid

- Working with a network of strategic allies gives me access to new markets.
- Sharing the decision-making process gives me additional support to face what the marketplace.
- When there are clear enforcement mechanisms, business works better.
- Industry bodies are an additional cost that my business must finance.
- Working with a network of partners limits my business independence.



Q-Method

Principal Component Analysis (PCA)

Significant factor loading when $p < 0.05$

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
Eigenvalues	9.92484	2.11265	1.83182	1.644	1.20258	0.93482	0.7469	0.68894
% Explained Variance	45	10	8	7	5	4	3	3
Cumulative % Expln Var	45	55	63	71	76	80	84	87
Humphrey's Rule	0.76061	0.44301	0.30604	0.27038	0.19758	0.19059	0.16042	0.12479
Standard Error	0.2132	0.2132	0.2132	0.2132	0.2132	0.2132	0.2132	0.2132

If we follow the Humphrey's Rule: factors should be retained if they have a value greater than twice the standard error, we will have 2 factors.

Factor	Actual EV	Mean EV for Random Data	95th Percentile EV for Random Data
Factor 1	9.92484	3.22001	3.64673
Factor 2	2.11265	2.74066	3.04529
Factor 3	1.83182	2.38303	2.63061
Factor 4	1.644	2.09172	2.2972
Factor 5	1.20258	1.83623	2.01514
Factor 6	0.93482	1.61498	1.7852
Factor 7	0.7469	1.40801	1.56941
Factor 8	0.68894	1.23187	1.37379



Q-Method

Hyperplane percent by factor

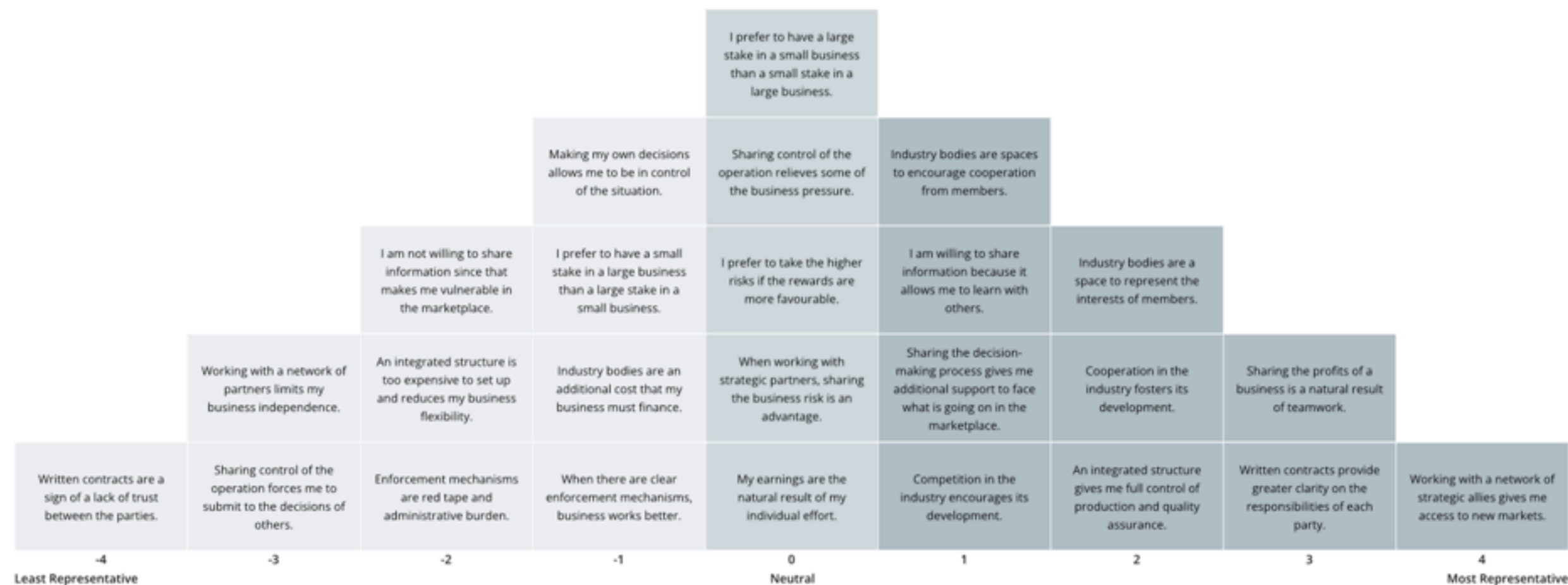
Factor	Hyperplane Count	Hyperplane Percentage
Factor 1	0	0%
Factor 2	2	9.09%
Total	2	4.55%

Factor Score correlations

	Factor 1	Factor 2
Factor 1	1	0.58436
Factor 2	0.58436	1

Factor Characteristics

	Factor 1	Factor 2
No. of Variables	14	7
Avg. Rel. Coef.	0.8	0.8
Composite Reliability	0.98246	0.96552
S.E of Factor Z-Scores	0.13245	0.1857



Q-Method Findings

- After processing the data, we found two interesting patterns.
- On the one hand, farmers with more experience in different ownership structures and governance practices are more engaged with other growers and the industry body; they also described their performance as above average. They believe that working alongside other growers might result in better business opportunities.

Industry bodies are a space to represent the interests of members		
Cooperation in the industry fosters its development.	Sharing the profits of a business is a natural result of teamwork.	
An integrated structure gives me full control of production and quality assurance.	Written contracts provide greater clarity on the responsibilities of each party.	Working with a network of strategic allies gives me access to new markets.
+2	+3	+4

Figure 3. Right corner of the Q-Sort activity for factor 1

Q-Method Findings

- On the other hand, growers with less or null experience with ownership structures or governance practices preferred individualistic statements.
- Consistently, they described their performance as below average.
- Interestingly, they have mentioned they prefer to be cautious when working with other growers and only sharing information after signing non-disclosure agreements or when they might get access to additional info.

Making my own decisions allows me to be in control of the situation.		
Working with a network of strategic allies gives me access to new markets.	Industry bodies are a space to represent the interests of members.	
Industry bodies are spaces to encourage cooperation from members.	Cooperation in the industry fosters its development.	I am willing to share information because it allows me to learn with others.
+2	+3	+4

Figure 4. Right corner of the Q-Sort activity for factor 2

Preliminary Conclusions

- The formalisation degree increases with the scale of the operation.
- Informal contracts are the most common arrangements in emerging ventures.
- Capital, land cost, regulations, and certifications are significant challenges for emerging businesses.
- Partnerships begin to arise when businesses grow.
- Labour, weather, long-term returns, and logistics are common challenges for all-size growers.
- Governance and accountability are vital for the performance of a cooperative structure.
- Trust relationships are key determinants in all stages of business development.



Preliminary Recommendations

- Working together makes a huge difference.
 - Combined production delivers the benefits of Scale.
 - More power in the marketplace.
 - Better negotiations both down and upstream in the SC.
 - Reduction to risk exposure.
 - Shared profits / losses.
 - Single point for marketing of the produce.
 - Allow growers to focus in production.
- Coordination and Trust are key for enhancing business performance.

Comments & Questions



LINCOLN
UNIVERSITY

TE WHARE WĀNAKA O AORAKI

Julio Botero PhD - Candidate

julio.botero@lincolnuni.ac.nz

Dr. Hugh Bigsby – Dr. Alan Renwick