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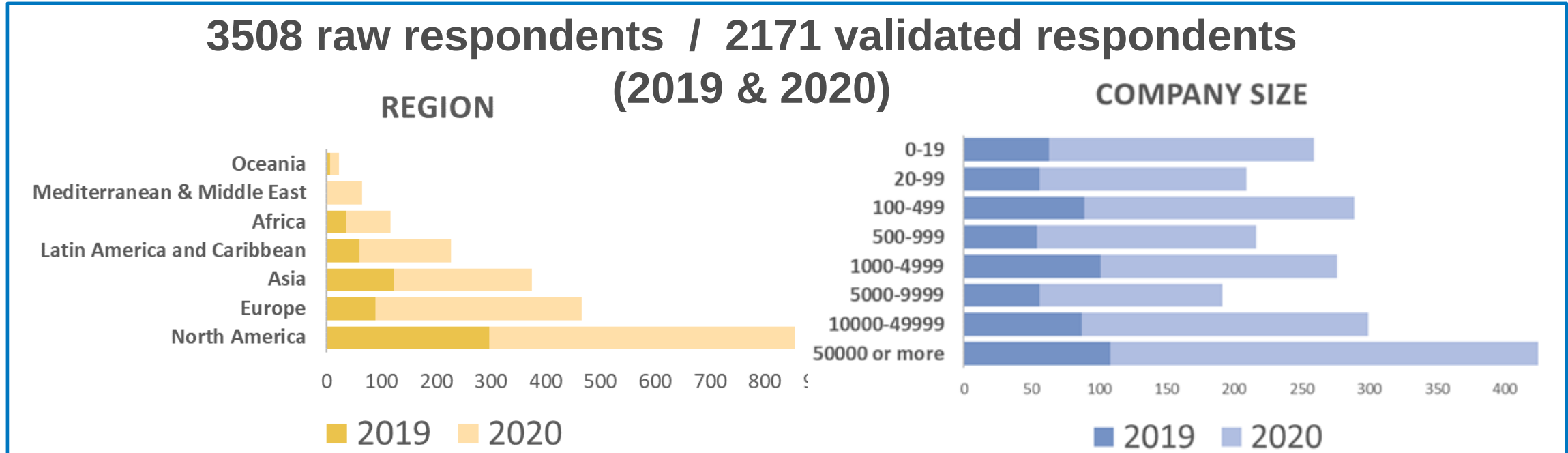
Dynamics of Supply Chain Sustainability

January 2021 Poster Session

Motivation / Background

Supply chain sustainability is growing at a breakneck pace.

- There is a lack of macro understanding on how industries are investing resources, setting goals, addressing pressure sources, publishing disclosure practices and responding to COVID-19.
- It is now vital to decipher how business are changing today to understand implications for the future.



Key Question / Hypothesis

- How have SCS initiatives changed from 2019 to 2020
- What is the COVID-19 impact on SCS commitments?
- Are there industry characteristics that can explain the differences in SCS practices?

Relevant Literature

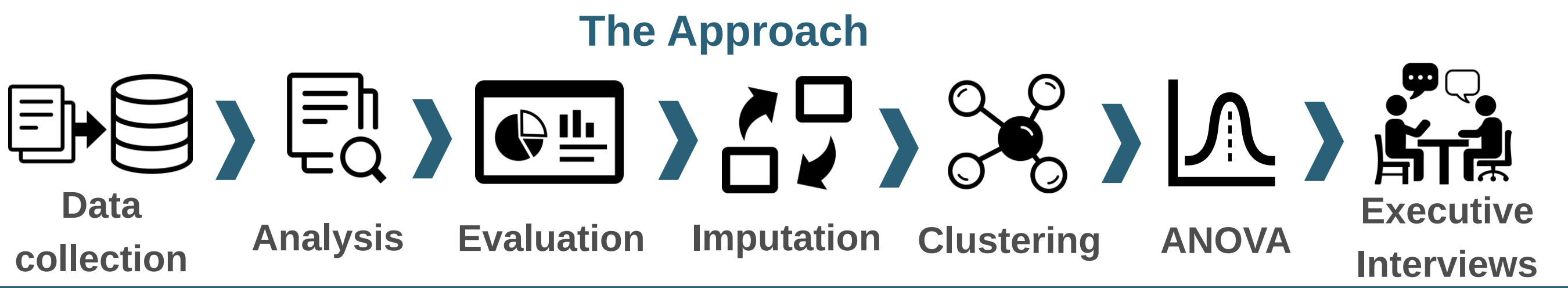
Allegue Lara, L. S., & Barrington, A. (2020). Assessing the State of Supply Chain Sustainability. MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

Bateman, A. (2020). What Does Covid-19 Mean for Supply Chain Sustainability? <https://medium.com/mitsupplychain/what-does-covid-19-mean-for-supply-chain-sustainability-614d9aae0a9f>

Elkington, J. (1998). Partnerships from cannibals with forks: The triple bottom line of 21st-century business. *Environmental Quality Management*, 8(1), 37–51.

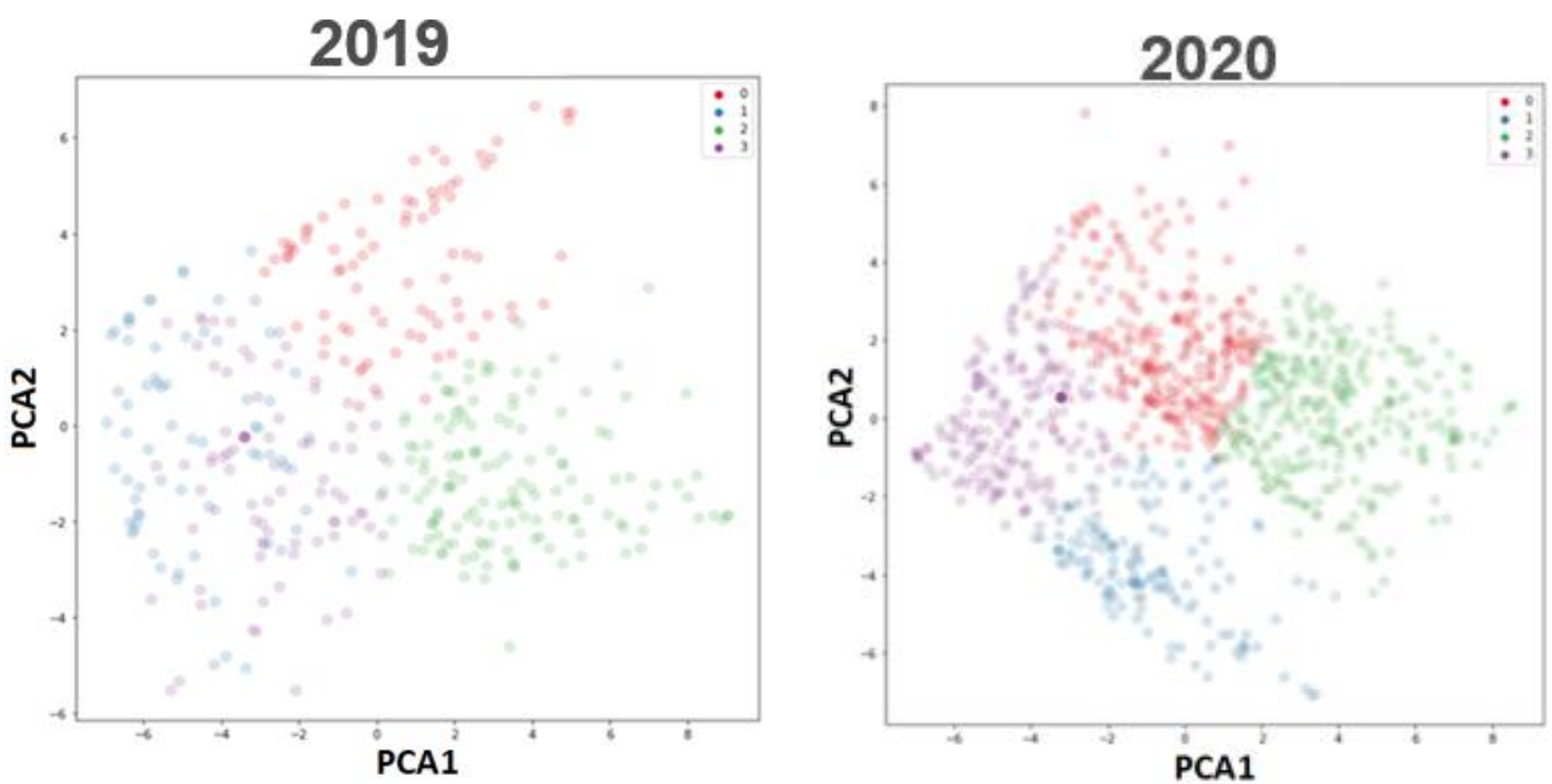


Methodology



K-Means Clustering
 2019 & 2020 Survey

Visualized with
 PCA 1 / PCA 2



Initial Results

Topic	2020		2021		2020		2021		2020		2021		2020		2021	
	Leader	High Effort	Standard	Compliant	Dreamer	Low Effort	Leader	High Effort	Standard	Compliant	Dreamer	Low Effort	Leader	High Effort	Standard	Compliant
Goals	Climate change mitigation	4.1	4.1	4.0	3.6	3.7	3.5	3.3	2.3	2.9	2.6	1.4	1.9	1.9	1.9	1.9
	Energy savings/renewable energy	4.2	4.3	4.3	4.1	3.4	3.8	2.7	2.8	2.9	3.3	1.9	2.0	2.0	2.0	2.0
	Water conservation	3.9	4.1	4.0	3.6	2.9	3.0	2.0	1.0	2.7	2.8	1.3	1.5	1.5	1.5	1.5
	End of life management/supply chain circularity	4.2	4.0	3.9	3.5	3.4	3.0	2.0	1.5	3.0	2.6	1.6	1.5	1.5	1.5	1.5
	Natural resource & biodiversity conservation	3.8	4.0	3.4	3.6	2.9	2.9	2.3	1.1	2.1	2.3	1.4	1.5	1.5	1.5	1.5
	Employee welfare & safety	4.4	4.6	4.3	4.4	3.9	4.1	1.0	2.3	3.1	3.7	1.4	1.7	1.4	1.7	1.4
	Human rights protection	4.5	4.6	4.1	4.4	3.8	3.6	1.7	2.1	2.9	3.1	1.7	1.4	1.7	1.4	1.4
	Local community impact	4.5	4.5	4.1	4.3	3.7	3.5	1.0	2.1	2.7	2.9	1.7	1.4	1.7	1.4	1.4
	Supplier diversity, equity & inclusion	4.1	4.3	3.9	4.0	3.2	3.2	1.7	1.8	2.6	2.6	1.7	1.5	1.7	1.5	1.5
	Fair pay/fair trade	4.5	4.4	3.9	4.3	3.4	3.3	1.0	2.0	2.6	2.8	1.3	1.4	1.3	1.4	1.4
Investment	Climate change mitigation	4.1	4.0	3.8	3.5	3.4	3.2	2.8	2.5	2.6	2.0	1.9	1.6	1.9	1.6	1.6
	Energy savings/renewable energy	4.2	4.2	4.1	4.0	3.1	3.6	3.0	3.0	2.0	2.5	2.1	2.2	2.1	2.2	2.2
	Water conservation	4.0	3.9	3.7	3.4	2.5	2.8	2.4	2.2	1.8	2.2	1.7	1.6	1.7	1.6	1.6
	End of life management/supply chain circularity	4.1	4.0	3.6	3.3	2.9	2.9	2.6	2.3	2.2	2.1	1.8	1.6	1.8	1.6	1.6
	Natural resource & biodiversity conservation	4.0	3.9	3.3	3.4	2.6	2.6	2.3	2.3	1.6	1.7	1.3	1.4	1.3	1.4	1.4
	Employee welfare & safety	4.4	4.4	3.9	4.2	3.4	3.7	3.4	3.5	2.3	2.9	2.2	2.4	2.2	2.4	2.4
	Human rights protection	3.9	4.2	3.4	3.7	2.8	2.8	2.3	2.7	1.3	2.0	1.3	1.5	1.3	1.5	1.5
	Local community impact	4.3	4.0	3.8	3.8	3.2	3.1	3.0	2.9	2.0	2.2	2.1	1.9	2.0	2.1	1.9
	Supplier diversity, equity & inclusion	3.9	3.9	3.4	3.6	2.6	2.8	2.5	2.9	1.7	1.8	1.7	1.8	1.7	1.8	1.8
	Fair pay/fair trade	4.2	4.0	3.4	3.7	2.8	2.8	2.7	2.8	2.0	2.1	1.4	1.8	1.4	1.8	1.8
Pressure	End consumers	4.0	3.9	2.6	2.1	3.1	3.2	2.5	3.1	2.7	2.5	2.5	2.2	2.4	2.2	2.4
	Corporate buyers	3.8	3.7	2.2	1.4	3.0	3.1	3.3	2.9	2.0	2.4	2.1	1.9	2.0	2.1	1.9
	Investors	4.1	3.9	1.9	1.7	3.1	3.4	2.6	2.8	2.5	2.3	1.4	1.7	1.4	1.7	1.7
	Current and prospective employees	3.9	3.9	1.8	2.1	3.1	3.1	3.1	2.8	2.4	2.2	1.8	2.1	1.8	2.1	2.1
	Company executives	4.5	4.3	2.7	2.3	3.5	3.6	3.2	2.8	3.0	2.7	1.6	1.8	1.6	1.8	1.8
	NGOs and other third parties	4.2	3.9	1.4	1.7	3.1	3.2	2.4	2.6	2.1	1.7	1.7	1.5	1.7	1.5	1.5
	Industry associations	4.0	3.9	1.8	1.6	3.0	3.1	2.9	2.3	2.3	2.0	1.5	1.8	1.5	1.8	1.8
	Governments & international governing bodies	4.4	4.2	2.3	2.4	3.2	3.5	2.6	3.0	2.7	2.6	1.6	2.1	1.6	2.1	2.1
	Mass media	4.2	4.0	1.8	1.4	2.9	3.2	2.6	2.7	2.4	2.0	1.8	1.8	1.8	1.8	1.8
	Local communities	4.2	3.9	2.4	1.7	2.9	3.0	2.0	2.7	2.1	1.8	1.8	1.9	1.8	1.9	1.9
Disclosures	Website	4.5	4.5	3.9	3.8	4.2	4.3	3.7	3.1	3.1	3.3	2.3	2.4	2.3	2.4	2.4
	Press releases	4.4	4.2	3.4	3.4	4.0	3.8	2.7	2.7	2.7	2.7	1.7	1.5	1.7	1.5	1.5
	Reporting organization	3.8	3.5	2.8	2.8	2.8	2.7	2.2	1.8	1.8	1.8	1.8	1.6	1.8	1.6	1.6
	Company Sustainability/CSR report	4.1	4.2	3.2	3.4	3.6	3.6	2.8	2.3	2.3	2.9	2.0	1.5	2.0	1.5	1.5
Third-party case study		3.7	3.0	3.0	2.4	2.7	2.0	2.7	2.0	2.1	1.7	1.4	1.6	1.4	1.6	1.6

Clustering revealed 6 unique groupings (2019 & 2020) of industries with differing mixes of sustainability initiatives.

Plan to validate findings with upcoming executive interviews to confirm results and develop deeper insights.

Expected Contribution

- Provides insights into the changes of global supply chain sustainability from 2019 to 2020.
- Identify groupings of businesses that could help firms develop future strategy through insights into new trends, and industry level adoptions.
- Help shine light into the future of sustainable supply chain commitments in response to COVID-19.

Jason Pang

