コメントの返信
Reply to commentator's question
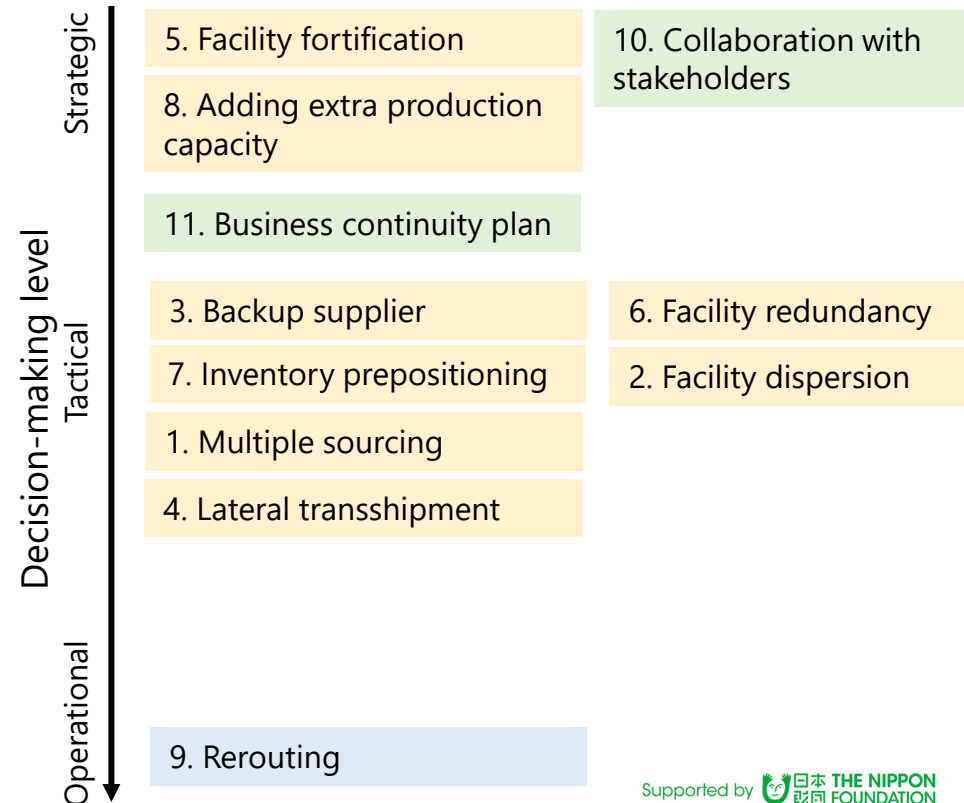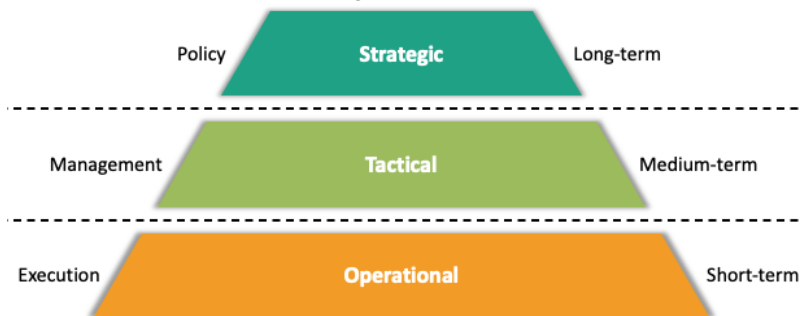
1.今回の調査におけるレジリエンス戦略が, 戦略（Strategy）, 戦術（Tactics）,作戦（Operation）レベルが混在しているのではないか？

I think the resilience strategies in this survey have a mixture of strategic, tactical, and operational levels.

- Originally, I classified the resilience strategies in this study based on whether they target the resilience of nodes, links, or both nodes and links of the SC.

- Some resilience strategies are more long-term others focus on the medium-term or short-term.

If we were to classify based on the decision-making level,

Decision-making level

Decision-making level	Strategic	5. Facility fortification	10. Collaboration with stakeholders
		8. Adding extra production capacity	
		11. Business continuity plan	
	Tactical	3. Backup supplier	6. Facility redundancy
		7. Inventory prepositioning	2. Facility dispersion
		1. Multiple sourcing	
		4. Lateral transshipment	
	Operational	9. Rerouting	

Figure 1: Company size

29 companies

LE

SME

95

5

520 companies

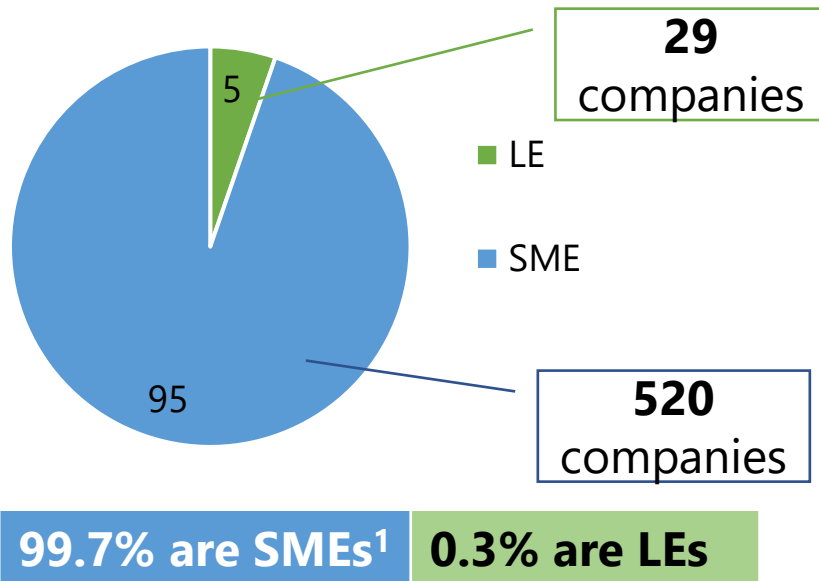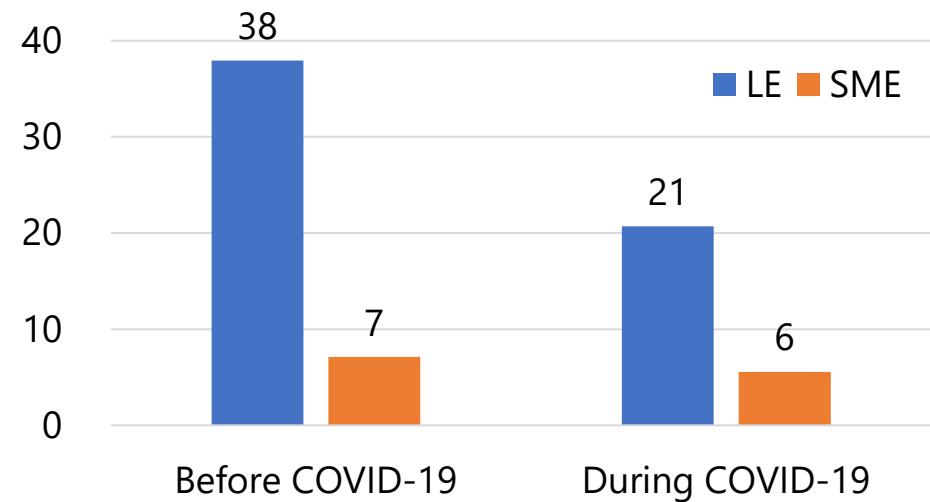**99.7% are SMEs[1]** **0.3% are LEs**

Figure 2: Implementation of resilience strategies by company size

- Although the implementation of resilience strategies is much higher in LEs compared to SMEs, the sample size of LEs is quite small in comparison to SMEs.

- One of the main reasons why company size is not significant in the choice model results.

1. SME Support Japan, https://www.smrj.go.jp/english/about/

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3. ロジットモデル（Choice model）の適合性（Fitness）の検討は？（p.33, p.34）Before, During Covid-19 の適合性の違い？
What is the goodness of fit of the choice(logit) model ?

	Before Covid-19	During Covid-19
Pseudo R^2	0.3912	0.2895

Wald test

	During Covid-19
chi2(6)	19.67
Prob > chi2 =	0.0032**

Based on these results we can conclude that the model correctly estimates the choice of companies to implement or not implement resilience strategies.

4. 目的変数は（0，1）変数ではなく，レジリエンス戦略/策定の効用値（0～100%）などにすると，戦略/策定を定量的に評価が可能になるのでは？

I think quantitative evaluation becomes possible if the objective variable is not binary variable(0,1). For example, I think you can make it something like a utility value(0～100%).
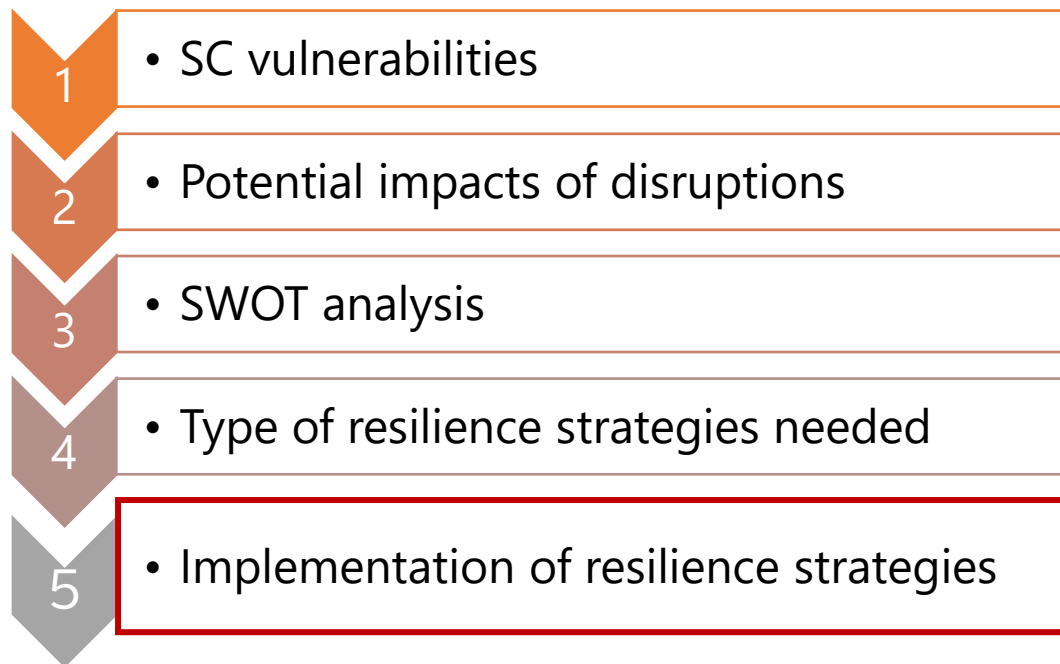
Part of future work.

5. 強靭なSCの設計には，どのようなSC全体の取組みが必要とるか？戦略（Strategy），戦術（Tactics），作戦（Operation）ごとに.

In your opinion, what kind of overall SC efforts are needed for a robust and resilient SC? Please answer at the level of strategy, tactics, and operation.

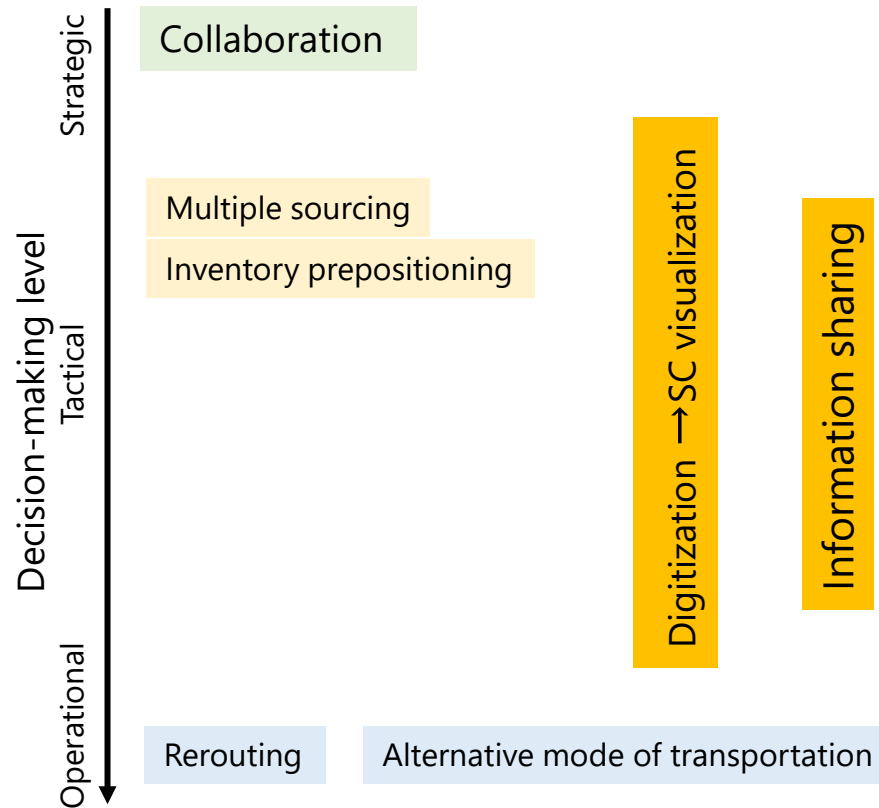Creating a strong or resilient SC is a quite important yet daunting task.

To create a resilient SC, the following action would be necessary.

1	• SC vulnerabilities
2	• Potential impacts of disruptions
3	• SWOT analysis
4	• Type of resilience strategies needed
5	• Implementation of resilience strategies

Companies that implemented resilience strategies before COVID-19 and responded to the question, **85% stated that they benefitted from it**.

In your opinion, what kind of overall SC efforts are needed for a robust and resilient SC? Please answer at the level of strategy, tactics and operation.

Overall, to be more robust and resilient, companies should focus on being agile.

Thank you very much for your time and attention.

ご清聴ありがとうございました。