



UiT The Arctic University of Norway

# Organizational resilience

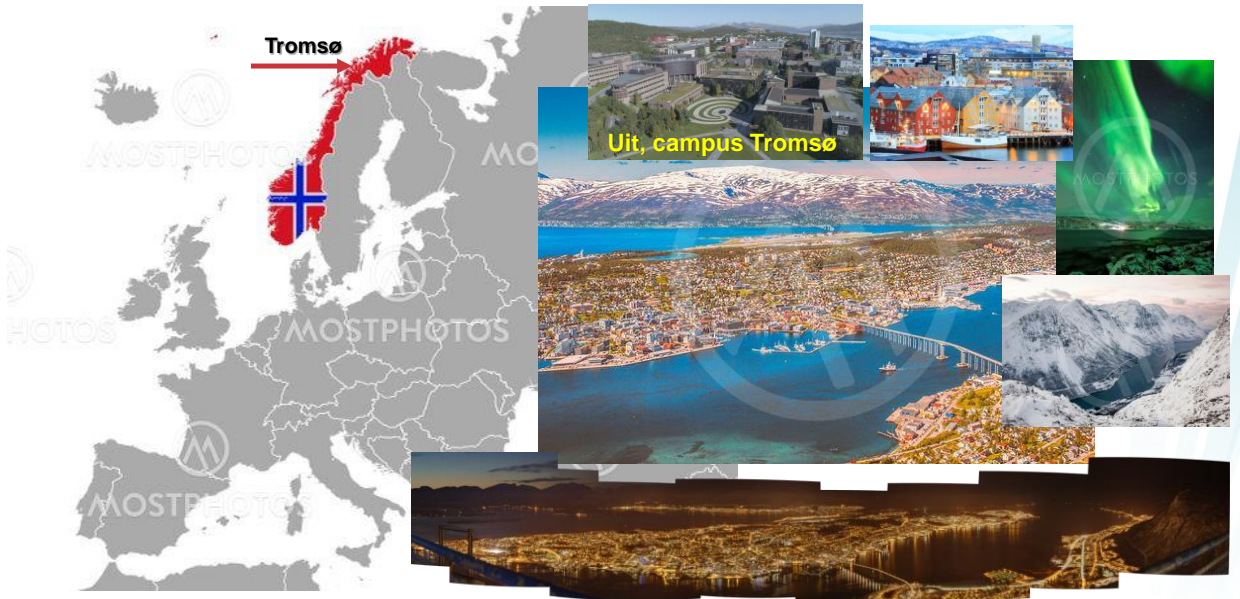
## How can we build it?

DRM online training series (Coventry University)

Maria Sydnes  
28 September 2022

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## UiT the Arctic University of Norway, Tromsø



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## Our aims today

- How are risk and resilience connected?
- How do we understand organizational resilience?
- How can we model organizational resilience?
- Case study: *Lean production: one path to organizational resilience?*

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## «Entry» ticket

1 min, write in chat or just talk ...

***What is the 1st thing that comes to your mind when you think about organizational resilience?***

please mention at least 1 thing 😊.



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Without increased action to build resilience to systemic risk, the United Nations Sustainable Development Goals cannot be achieved.  
UN, Global Assessment Report on Disaster Risk Reduction 2022

“...the new normal”  
for organisations



**How can we address all dimensions of disaster risk?**  
Priority 1: Understanding disaster risk.  
Priority 2: Strengthening disaster risk governance.  
Priority 3: **Investing in disaster risk reduction for resilience.**  
Priority 4: Enhancing disaster preparedness for effective response.  
Sendai Framework on Disaster Risk Reduction 2015–2030

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# Academic status of the concept

Research has grown dramatically in recent decades.

- ✓ Lack of empirical research.
- ✓ Lack of an overarching theoretical framework of OR.
- ✓ No unified definition of the concept.
- ✓ No consistent understanding of
  - ✓ which elements OR contains
  - ✓ what resilient organizations actually do

**The question of how to achieve OR remains unanswered** (Chen et al. 2021).

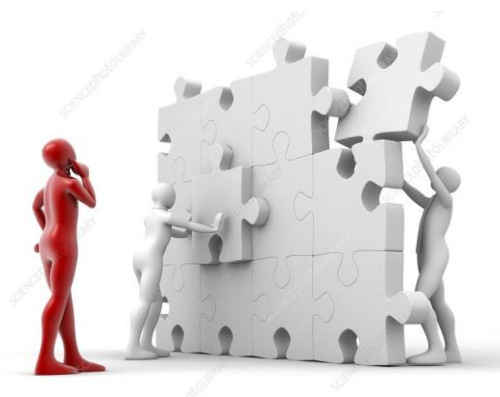
	1985-2000	98
Google Scholar search	2001-2015	3270
	2016-2021	40 100
	After 2022	12 200



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A major organizational challenge is ***how to achieve resilience in practice***

(Boin and Lodge 2016; Duchek 2020; Chen et al. 2021)



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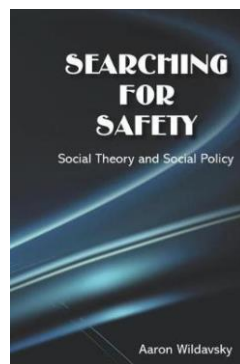
# How do we understand organizational resilience?

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## Resilience: one strategy for decision makers dealing with risk and uncertainty

“**Anticipation** is a mode of control by a central mind; efforts are made to *predict* and *prevent* potential dangers before damage is done...

effective in coping with known threats and problems



Anticipation vs resilience

**Resilience** is the capacity to cope with *unanticipated dangers* after they have become manifest, *learning to bounce back.*“

(Wildavsky 1988, p. 77)

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## OR is about organizational **ability to cope**, i.e. respond

- OR "... is a fundamental quality (...) to **respond productively** to significant change that disrupts the expected pattern of event without engaging in an extended period of regressive behavior" (Horne and Orr, 1998, p. 31).
- OR is "organizational capacity to **absorb the impact** and **recover from** the actual occurrence of an extreme weather event" (Linnenluecke et al., 2012, p. 18).
- Recovery resilience means "**bouncing back** to a state of normalcy" (Boin and Eeten, 2013, p. 431)

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## OR is about organizational **ability to adapt**

- OR is "ability of an organization to **absorb and adapt** in a changing environment" (ISO, 2017).
- OR is "the **maintenance of positive adjustment under challenging conditions** such that the organization emerges from those conditions strengthened and more resourceful" (Vogus and Sutcliffe, 2007, p. 3418).
- OR capacity is an "... ability to **effectively absorb, develop situation-specific responses to, and ultimately engage in transformative activities** to capitalize [i.e. benefit] on disruptive surprises that potentially threaten organization survival" (Lengnick-Hall et al., 2011, p. 244).

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## Resilience implies **more than** a **specific adaptation**

**NB:** competence in one period does not predict later competence in a linear deterministic way; rather competence in one period increases the probability of competence in the next or any kind of unexpected event.

To be resilient is to be **vitaly prepared** for adversity which requires “**improvement in overall capability**, i.e., a generalized capacity to investigate, to learn, and to act, **without knowing in advance what one will be called to act upon**”.

(Wildavsky, 1991: 70)

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## «Reactive» vs «Proactive» resilience

“A society relying on **reactive resilience** approaches the future by **strengthening the status quo and making the present system resistant** to change, whereas one that develops **proactive resilience** accepts the inevitability of change and tries to **create a system that is capable of adapting to new conditions and imperatives**“

(Klein, Nicholls and Thomalla 2003, 39)

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Mindful organizations invest in building experiences with **both of these techniques** because each of them improves distinct aspects of the adaptive capability of the organization

(Wildavsky, 1988).

Rerup, 2001: '**Resilience as rule following and rule breaking**'

1. **Anticipation**: anticipatory organizations **actively try to forecast in order to** determine ways in which they can **avoid** the success and failure trap.
2. **Improvisation**: focus on building skills in order to **cope with the failure or success trap** when the organization experiences these traps despite their anticipatory efforts.

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Resilience is produced by both **«exploiting»** old certainties (rules) and by **«exploring»** new alternatives.

(March 1991 cited by Rerup 2001)

\* NB "**organisational ambidexterity**" refers to organization's ability to align and be efficient in its management of today's business demands while simultaneously be adaptive to changes in the environment (Duncan, 1976). It is about the ability of an organization to both explore and exploit. Ambidexterity leads to higher performance but at the same time it emphasises that the tension between two distinct capabilities is a key challenge.

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## OR is about organizational ability **to anticipate**

- R is the “**capacity to cope with unanticipated dangers** after they have become manifest, learning to bounce back” (Wildavsky, 1991, p. 77).
- OR potential “is **more than mere survival**; it involves **identifying potential risks** and **taking proactive steps** (...) to ensure that an organization thrives in the face of adversity” (Somers, 2013, p. 13).
- **Precursor resilience** “**prevents budding problems** from escalating into a full-blown crisis or breakdown” (Boin and Eeten, 2013, p. 431).
- R is “the incremental capacity of an organization to **anticipate and adjust** to the environment” (Ortiz-de-Mandojana and Bansal, 2015, p. 6)

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**Stop and think**



***Do you see any  
immediate challenges  
associated with this  
strategy?***

“Anticipation can create a false sense of security and can compromise the coping ability of the organization” (Rerup, 2001).

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Regardless of how mindful a social system is, it will **never be able to imagine, simulate, anticipate, and prepare** for every error or contingency in advance (March, 1976).

## Stop and think

### How to solve this dilemma?

“ ... the uncertainties are so substantial that **we cannot tell in advance** which, if any, among a multitude of hypothesized dangers will actually turn out to be real ones. ...How, then, with the best will and the brightest thinkers in the world, can we know in advance which dangers will really come about?” (Wildavsky 1988, p. 77).

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## Organizations should build **resilience potential**

- ✓ Anticipation capabilities help to identify potential risks and take proactive steps against them.
- ✓ Anticipation capabilities lead to the development of a **resilience potential**—that means “**resilience that is not presently evident or realized**” (Somers 2009, p. 13).
- ✓ However, organizations must also possess **coping capabilities** to realize their resilience potential. Resilient organizations must possess proactive capabilities (**resilience potential**) and reactive capabilities (**resilience realization**).

Researchers have also used the terms **capacity for resilience** (i.e. factors that increase the probability for resilience to be demonstrated) and **demonstration of resilience** (i.e. the actual demonstration of positive adaptation).

Britt and Sawhney (2020)

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## Putting together the three abilities ...

OR is “an organization’s ability

- to **anticipate** potential threats,
- to **cope** effectively with adverse events, and
- to **adapt** to changing conditions”

(Duchek, 2019, p. 6)



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*Stop and think*



*How do we distinguish resilient organizations from less resilient ones?*

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# Resilience is an **outcome**

When organizations perform well during crisis or bounce back from interruptions (e.g., Horne and Orr 1998).

**The most frequently mentioned attributes that may enhance OR include:**

- ✓ general resources, i. e. adequate resources, redundancy, positive relationships;
- ✓ collective behaviors;
- ✓ specific organizational strategies or processes

**One of the first and most important conceptualizations: Weick, 1993, The Collapse of Sensemaking in Organizations: The Mann Gulch Disaster:** identified 4 potential courses of R: improvisation and bricolage, virtual role systems, an attitude of wisdom, and respectful interaction. These four principles facilitate collective sensemaking and, therefore, can help to avoid dramatic consequences from unexpected events.

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“Good outcomes are not enough to define resilience”

(Sutcliffe and Vogus 2003, p. 108)

**Stop and think**



**How does  
conceptualizing OR as  
and outcome limit us?**

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“Organizational resilience is **not a static attribute** that organizations either do or do not possess. It is a **path-dependent, latent set of capabilities** that organizations develop by noticing and correcting for maladaptive tendencies that help them to cope with unexpected circumstances”

(Ortiz-de-Mandojana and Bansal, 2016, p. 1617)

**Stop and think**  
**What does this imply for our discussion?**



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## Resilience is also a **process**

Process approaches are **based on different definitions** of OR and they therefore vary in the type and number of suggested process stages.

- Provide important **insights into the resilience construct**.
- Define discrete **elements of the resilience process** and thus contribute to opening the black box between resilience resources (inputs) and resilience outcomes (outputs).
- Recognize the **dynamic nature of resilience** and thus provide a foundation for studying the **long-term development** of organizational resilience.

***An overarching process framework that highlights individual elements of the different resilience phases is lacking within this approach.***

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## Resilience is further a set of **organizational capabilities**

- Offer important insight into **how resilience may be achieved** in practice.
- Provide insight into the **internal workings** of resilience and conditions for its development.
  - ✓ operational and strategic capabilities
  - ✓ general capabilities (eg. cognitive, behavioral, contextual) and organizational routines that trigger OR

Resilience capacity “*is derived from a set of specific organizational capabilities, routines, practices, and processes by which a firm conceptually orients itself, acts to move forward, and creates a setting of diversity and adjustable integration*” (Lengnick-Hall et al., 2011, p. 245).

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## ***How can we model organizational resilience?***

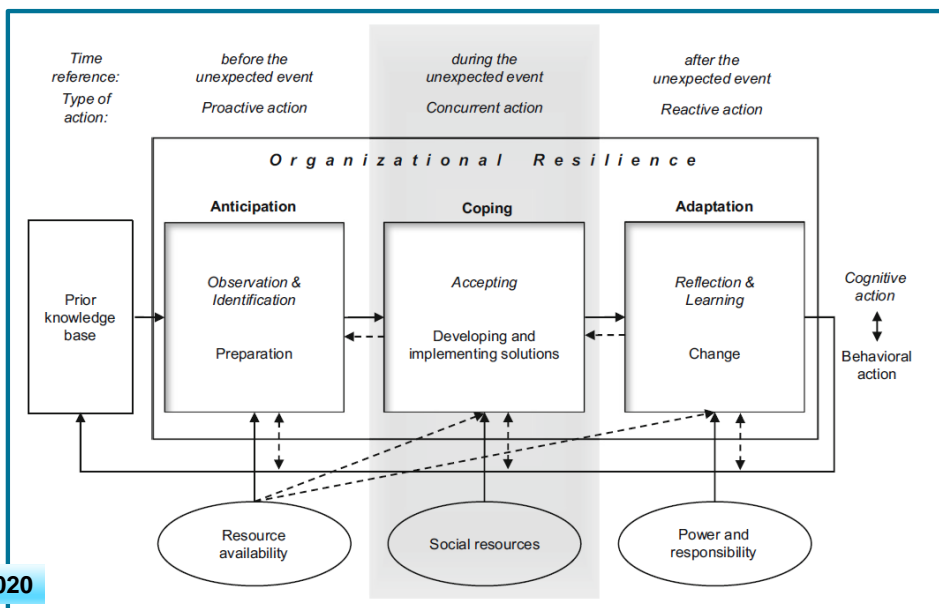
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# Why is it difficult to measure OR?

- Resilience is **relative**, **emerging** and **changing** in line with specific circumstances and challenges: it is a **path-dependent** organizational feature that grows and develops over time (Boin, Comfort, and Demchak 2010 ; Sutcliffe and Vogus 2003; Gittell et al., 2006 ; Giustiniano et al, 2018, p. 130).
- OR is **dynamic** (Lengnick-Hall and Beck, 2005 ), i.e. OR is not something that organizations have; it is **something that they express or fail to express over time**.
- Resilience is **often latent** in organization before the actual need for it arises (Somers, 2009).
- OR is a “sustained target movement” (Suryaningtyas D., et al. 2019). Construction of OR is “a **never-ending story**” (Giustiniano et al., 2018, p. 124).
- OR cannot always be measured directly, as its benefits may take a long time to become evident.

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## A capability-based conceptualization of OR

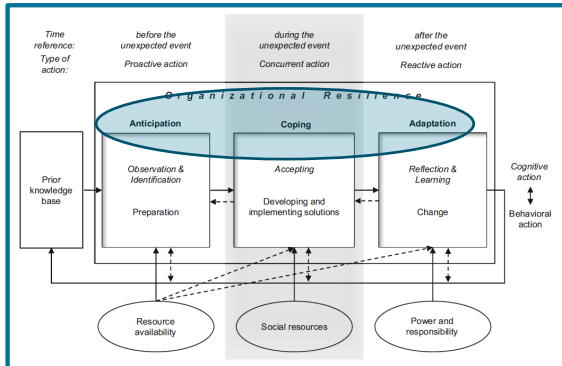


Duchek, 2020

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# A capability-based conceptualization of OR

## the three resilience stages



Duchek, 2020

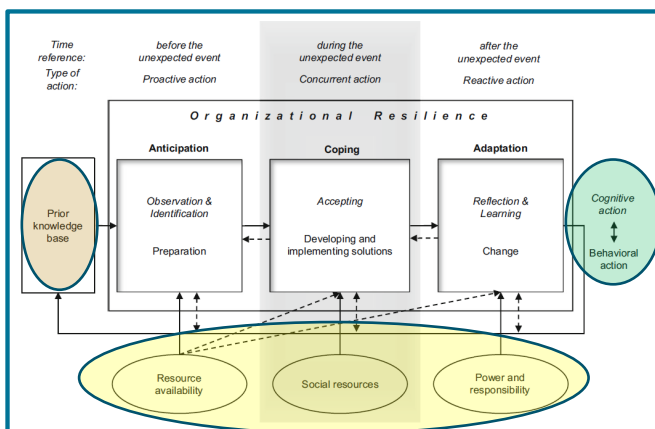
- ✓ builds on the 'resilience-as-a-process' perspective and combines it with the idea of resilience as a unique blend of organizational capabilities and routines;
- ✓ illustrates the main stages of the resilience process and points to underlying capabilities that together constitute OR;
- ✓ resilient organizations respond not only to the past (reactive action) or to current issues (concurrent action), but also to the future (anticipatory action);
- ✓ **anticipation**, **coping**, and **adaptation** are the three resilience stages.
- ✓ the three stages of the resilient process are based on organizational capabilities;

**OR is a meta-capability consisting of a set of organizational capabilities/routines that allow for a successful accomplishment of the three resilience stages.**

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# A capability-based conceptualization of OR

## capabilities, antecedents and contextual factors



- ✓ the three resilience stages cannot be clearly separated. They show some overlaps and build on each other;
- ✓ organizations need to develop capabilities of all three resilience stages that together form the meta-capability of OR;
- ✓ successful completion of the three stages always depends on an interplay between cognitive and behavioral capabilities and actions;
- ✓ contextual factors (**drivers**: resources, social capital, and power and **antecedents**: knowledge base) are important to the successful accomplishment of the three resilience stages as well as the development of resilience capabilities.

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## Case study

### Lean production: one path to organizational resilience?

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### Lean production: one path to organizational resilience?

**RQ addressed:** *In what ways does lean production influence organizational resilience?*

- ✓ an exploratory in-depth single-case study of a production department in a large international company, Nordic aerospace and defence industry context;
- ✓ data collection methods include participant observations, in-depth interviews, content analysis of company archives, and survey data.
- ✓ **Aim:** to empirically investigate how OR can be achieved, by investigating the potential for LP to improve OR.

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- 'the standard manufacturing mode of the 21st century' (Rinehart et al. 1997, 2)
- both a manufacturing philosophy (Bhasin and Burcher 2006) and a managerial practice widely adopted by organizations around the world to **optimize organizational effectiveness and business performance** (Ghobadian et al. 2020) and **enhance competitiveness** (Galeazzo and Furlan 2018).
- 'an integrated socio-technical system whose **main objective** is to **eliminate waste...**' (i.e. any activity that does not add value from the customer's perspective) (Shah and Ward 2007, 791).
- permeates all elements of a socio-technical system aimed at 'using less of everything' – including human effort, manufacturing space, investment in tools and engineering working hours – to develop a new product (Jasti and Kodali 2015, 867).
- may promote resilient organizational performance (Birkie 2016; Lotfi and Saghiri 2018; Saurin et al. 2017; Soliman et al. 2018, Habibi Rad et al. 2022)

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## Lean tools examined

### Lean boards

- visual boards displaying statistical process and safety information, often with simple graphical representations
- physical boards are deemed preferable to digital ones - to avoid information overload and because all team members should have full input and control over their own board

### Lean board meetings

- ensure they evolve as useful tools and that their content is maintained. These meetings also facilitate important communication among the participants

### One-point lessons

- educational training tools aimed at improving quality through systematizing and sharing of information about quality problems that have occurred
- Written down and shared on the lean board

### The 5-whys analysis

- asks 'why' questions five times to identify the root cause of a problem
- it 'usually has a lot of depth and breadth' and is a 'corrective as well as preventive action'

### 5S

- *Sort*: organize and store things in order
- *Set*: label where to store things, always storing things where they belong
- *Shine*: keep the workplace clean and neat
- *Standardize*: document the work methods and use them; and finally
- *Sustain* means to make a habit of continuous improvement procedures

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## Lean practices' contributions to the stages of organizational resilience and their underlying capabilities (authors' compilation)

OR stages and underlying capabilities		Anticipation		Coping		Adaptation	
		To observe internal and external developments	To identify critical developments and potential threats	To prepare for unexpected events	To accept a problem and develop and implement solutions	Reflection and learning	To change organization(s)
Lean Practices							
Lean meetings	Team	X	<b>X</b>	X	X	X	X
	Department	X	<b>X</b>		X	X	X
	Lean board	X	X				X
	HSE reports		X				
Lean tools	One-point lessons	X		(-X)		X	
	5S			X	X		
	The 5-whys	X	X	X		X	
Lean culture		X	X	X	X	X	X

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## We conclude ...

- ... that various lean practices have the potential to lead to the development of organizational capabilities that foster the three stages of OR: anticipation, coping and adaptation.
- **The key contribution of our study** to the research conversation on lean effects (Antony et al. 2021) and dynamics between the two paradigms (Habibi Rad et al. 2021) is in that it **offers a more nuanced picture of how lean affects OR.**

While lean contributes to all resilience stages, our data clearly demonstrates that it also has its limitations and not all lean practices will equally enhance OR.

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## Concluding remarks

- The concept of OR is complex and multidimensional and is still at its infancy.
- OR builds on the multi-faceted capabilities that an organization develops into routines and are influenced by a unique interaction and combination of strategic and operational factors.
- OR is **relative**. Organizations can only be more or less resilient; there is no absolute measure, definitive goal or single approach to enhance OR.
- OR is dynamic and has active nature.
- Resilience vs related constructs.

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## Resilience vs related constructs

- **Flexibility**: ability to rapidly adjust to environmental changes (Golden and Powell 2000)
- **Agility**: ability quickly to recognize opportunities, change direction, and avoid collisions (McCann 2004, p. 47)
- **Robustness**: ability of a system to maintain functions despite disruptions (Kitano 2004).
- **Reliability vs Resilience**: 'reliability' refers to a continuous strategy of protective shielding designed to create reliable systems, whereas 'resilience' is the ability of a system to absorb and bounce back if the protective shielding fails (Warrick 1982, 209).

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## «Exit» ticket

1 min, in chat ...

**What are your key lessons learned after this lecture?**

✓ please mention at least 1 thing 😊.



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## Literature

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***Thank you for your  
attention!!!***

