

Organizational Resilience: What it is and What it isn't? A Conceptual Review

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Abstract

Organizational Resilience (OR) as a construct and as a socioeconomic challenge is gaining uprising attention. Yet, a better understanding of the term in terms of what it is and what it isn't is still far behind. The present study is aimed at revisiting the definitions of OR for elucidating the scope of it. A systematic review of selected journal articles of 30 years (1990-2020) indexed in SSCI was performed. Both identifying and distinguishing facets of definitions were reviewed qualitatively and presented. Findings indicate that OR is a multidimensional construct that possesses several features that distinguish it from other similar constructs. The study concluded that the OR is about an organizational philosophy comprised of diverse competencies to manage challenging environmental events in a continuous and progressive way. Implications suggest that any conceptualization of OR should primarily centre on the long-term continuous process of meeting the challenging environmental occurrences rather than a set of discrete capabilities to respond to a devastating event.

Keywords:- Bouncing Back; Definitions; Organizational Resilience; Review

1. INTRODUCTION

The term resilience is often used for denoting the ability to “bouncing back”. It is rooted in the Latin term “resiliere” which gives the similar meaning of “jumping back” (Klein, Nicholls, & Thomalla, 2003; Paton & Johnston, 2006). Despite the appearance of the term being noted in general use for decades, ecology was the first scientific discipline to adopt the term in building its theoretical construction. Holling (1973) pioneered the use of the resilience concept in the field of ecology. He defined (1973) resilience in the context of ecosystems as their ability to absorb changes and persist. With Holling’s initiative in 1973, the term branched into several areas of studies.

Organizational Resilience (OR) is one of such branches that address how organizations can combat the uninvited environmental uncertainties. Along with the inaugural work of Weick (1993), OR, which thrived in the face of the accelerated presence of disasters in the world of business, gained greater attention from both scholars and professionals (Vogus & Sutcliffe, 2008; Hillmann & Guenther, 2020). For instance, the pandemic situation that arose due to the new COVID 19 virus compelled us to reassess how resilient we are as businesses.

However, the findings of the previous reviews show that the term lacks clarity in terms of interpretation and measurement. For instance, Amann and Jaussaud (2012) claimed that the term lacks clarity despite its popularity as a promising factor for both practitioners and for scholars. Duchek (2020) reported that OR as a core construct lacks consistent understanding. Moreover, Burnard and Bhamra (2011) and Linnenluecke (2017) while assessing the theoretical foundation of the construct noted the interpretational anomalies of the OR definitions which cause them to offer new definitions. Moreover, reviews of the OR presented so far staged have been diverse research agendas. Regardless of the dominance of the construct in the world of empirical studies, these spares in the definition and measurement have reduced the significance of the concept as an applied organizational construct (Amann and Jaussaud 2012; Brand and Jax 2007; Burnard and Bhamra 2011; Linnenluecke 2017). Regardless of the numerous contributions by different authors towards the development of the concept, until recently a uniform definition of OR has not staged (Linnenluecke, 2017; Xiao & Cao, 2017; DesJardine et al. 2017; Hillmann & Guenther, 2020).

For example, OR has been defined as capacity, capability, characteristic, outcome, process,

strategy, approach, philosophy, process, competency attribute, and much more (Hillmann & Guenther, 2020). Resultantly, it is been criticized for ambiguity and inconsistency. Additionally, theoretical support available for empirical studies was found less reliable to adopt (Brand and Jax 2007; Hillmann & Guenther, 2020). Importantly, this has given birth to studies of a different focus. For instance, greater diversity is noted with respect to their research focus among many of the reviewed performed so far. Hillmann and Guenther (2020) pointed the threat towards the significance of the concept for practice and research due to deficiencies associated with the definition and the measurement. On the other hand, OR has become the centre of organizational dialogues with the increased business uncertainties. Likewise, many leading practitioner journals often stage the insights of resilient organizations (Linnenluecke, 2015; DesJardine, Bansal, & Yang, 2017; Hillmann & Guenther, 2020). Despite the immense presence of the term in the empirical inventory, issues of conceptualization are still prevailed (Hillmann & Guenther, 2020). This paper is driven by the aim of revisiting the definitions of OR for elucidating what it is and what it isn't.

2. METHODS

A systematic review of the OR literature was performed. Research articles published in SSCI journals were drawn from leading e-databases namely Emerald, JSTOR, OXFORD, EBSCO, Science Direct, and Taylor & Francis. The keywords; "definition of OR", "defining OR", "review of OR", and "reviewing OR" were set as the inclusion criteria where articles of other titles (i.e., OR measures, scales of OR) and non-indexed journal articles with keywords were excluded. In addition to the aforesaid e-databases, the search of articles was performed in online journals of related disciplines. The search resulted in 467 articles (1990 – 2020) including 12 meta-reviews among which 205 articles were considered for the review. The selection of articles considered the scientific merit of the paper and as well the source. Both the identifying and distinguishing facets of definitions were analysed qualitatively (Flynn et al., 1990) by performing a thematic analysis. Tables and narratives presented the analysed data.

3. RESULTS

Table 1 presents the summary of the reviewed definitions.

Table 1: Summary of Definitions

Author/s	Definition	Theme/s
Annarelli & Nonino, (2016)	A capability to face disruptions and unexpected events in advance thanks to the strategic awareness and linked operational management of internal and external shocks.	Capability Uncertainty Adverse events Environment
Banahene et al., (2014)	Organisational resilience is a capability which enables organisations to adjust to perturbation, moderate the effects of risk and uncertainty and take advantage of emergent opportunities.	Capability Uncertainty Adjust
Begin & Chabaud, (2010)	The capacity of organizations to cope with and bounce back from unfavourable changes in their environment.	Capacity Cope Bounce back Adverse events Environment
BSI BS 65000, (2014)	The resilient organisation is able to anticipate, respond and adapt to acute or sudden shocks and chronic or incremental changes so that it survives and prospers into the future.	Anticipate Respond Adapt Incremental Growth Adverse events
De Oliveira, Teixeira, & Werther, (2013)	The continuous renewal of competitive advantages.	Continuous
Duchek et al., (2020)	Resilience means effectively responding to adverse events not only after such events but before and during them as well.	Adverse events Respond
Gibson & Tarrant, (2010)	The outcome is influenced by a dynamic complex combination of environmental factors.	Outcome Environment
Hale & Heijer, (2006)	The characteristic of managing the organisation's activities is to anticipate and circumvent threats to its existence and primary goals.	Characteristic Anticipate Manage
Hillmann & Guenther, (2020)	The organization's ability to restore to the original state even develops a new skill in disruptive conditions.	Ability Bounce back Skill Growth Adverse events

Hollnagel, (2006); Nemeth, et al., (2011)	The essence of resilience is the intrinsic ability of an organisation (system) to maintain or regain a dynamically stable state, which allows it to continue operations after a major mishap and/or in the presence of continuous stress.	Ability Stable Adverse events Continuous
Janellis Pvt Ltd, (2015)	A resilient organization has the ability to intelligently anticipate and manage the change swiftly, has the capacity to learn from challenges and seeks opportunities to enhance its capability to adapt, bounce back faster, smarter and stronger.	Ability Anticipate Manage Capacity Capability Adapt Bounce back Growth
Jiwani & Milley, (2009)	Represent adaptive capabilities of organizations faced with uncertainty in the context of complexity. An organization's ability to absorb strain and preserve or improve functioning, despite the presence of adversity.	Capability Adapt Uncertainty Ability Adverse events
Kahn et al., (2018)	A set of attitudes about desirable actions by organisational representatives, as it is about developing new capabilities.	Attitudes Capabilities Growth
Kendra & Wachtendorf, (2003)	Resilience has been described as a multidimensional, socio-technical phenomenon that addresses how people, as individuals or groups, manage uncertainty.	Multidimensional Socio-technical phenomenon Uncertainty Manage
Lee, Vargo, & Seville, (2013)	A unique blend of cognitive, behavioural, and contextual properties that increase a firm's ability to understand its current situation and to develop customized responses that reflect that understanding.	Cognitive Behavioural Contextual Ability Unique
Lengnick-Hall & Beck, (2003)	A firm's ability to effectively absorb, develop situation-specific responses to, and ultimately engage in transformative activities to capitalize on disruptive surprises that potentially threaten organization survival.	Ability Absorb Adverse events
Lengnick-Hall et al.,	Ability of systems to prevent or adapt to changing conditions in order to	Ability Adapt

(2011)	maintain control.	
Leveson, et al., (2006)	Organizational capacity to absorb the impact and recover from the actual occurrence of an extreme weather event.	Capacity Absorb
Linnenluecke, Griffiths, & Winn (2012)	The capacity to rebound, 'to come back' from adversity, uncertainty, conflict, failure or even positive change.	Capacity Bounce back Adverse event Uncertainty
Luthans, (2002)	The ability of an individual or organisation to expeditiously design and implement positive adaptive behaviours matched to the immediate situation.	Ability Adapt
Mallak, (1998)	Resilience can be a useful capability of Organizations because it offers the ability to deal with emergencies and crises.	Capability Ability Crises
Morales et al., (2019)	It offers the ability to deal with emergencies and crises.	Ability Crises
Patriarca, et al., (2018)	A combination of four cornerstones: monitoring, responding, learning and anticipating.	Monitor Respond Anticipate Learn
Pollock, (2016)	An organisation's strong sensitivity to perturbations on any scale.	Sensitivity Adverse events
Sutcliffe & Vogus (2003) Vogus & Sutcliffe, (2007)	An organizational level phenomenon is the power of organizational units to resume, rebound, bounce back, or positively adjust untoward events.	Organizational level phenomenon Resume Rebound Bounce back Adjust Adverse events
Tengblad & Stefan, (2019)	Organizational resilience is a multidimensional phenomenon that can be understood as traits, processes, capabilities and resources simultaneously.	Multidimensional phenomenon Traits Processes, Capabilities Resources
Tengblad, (2018)	The capacity of a company to over time become a selected variation in the	Capacity Environment

	marketplace.	
Vogus & Sutcliffe, (2007)	The maintenance of positive adjustment under challenging conditions such that the organization emerges from those conditions strengthened and more resourceful.	Adjust Resourceful Growth
Weick & Sutcliffe, (2001)	It comprises coping skills, which materialise when events get outside of normal operational boundaries, and knowledgeable people who can self-organise into ad hoc networks to provide expert problem-solving.	Cope Adverse events Problem -Solving
Weick, (1993)	Resilience in organisations seeks to promote competence, restore efficacy, and encourage growth through the behavioural processes of mindful organizing enacted by front-line employees; therefore, a resilient organisation is one that is able to do this on a sustainable basis.	Restore Growth Competent Behavioural process Mindful
Wildavsky, (1991)	The capacity to cope with uninvited events and bounce back once they occurred while he interpreted anticipation as predicting and preventing potential dangers before the damage.	Capacity Cope Adverse events Bounce back Prevent
Williams et al. (2017)	The process by which an actor (i.e. an individual, organization, or community) builds and uses its capability endowments to interact with the environment in a way that positively adjusts and maintains functioning prior to, during, and following adversity.	Process Capability Environment Adjust Adverse event
Xiao & Cao, (2017)	Organizational resilience is a multi-level construct and influenced by many factors, many levels.	Multi-level construct

Source: Developed by the author (2021)

4. DISCUSSION

Along with Holling's work (1973), ecological definitions of resilience came into the field (Pimm, 1984; Alwang & Siegel,

2001; Walker, et al., 2002; Langemeyer, Madrid-Lopez, Beltran & Mendez, 2021).

Resilience is a multidimensional, socio-technical phenomenon about how individuals or groups manage uncertainty. Thus, it is used in a wide variety of fields including ecology, psychology, supply chain, strategic management and safety engineering (Bhamra, Dani, & Burnard, 2011) which has again led it to be difficult to form a generalized definition and a sound measure (Pollock, 2016). With the increased frequency and intensity of catastrophic events that threaten the survival of businesses, the concept of “organizational resilience” was born. Organizations demonstrate a greater sensitivity to perturbations on any scale. Hence, resilience has become a principal feature of any modern-day organization.

Weick (1993) was the first to attribute the resilience concept to the organizational context. In his work, “The Collapse of Sensemaking in Organizations: The Mann Gulch Disaster”, he revisited the tragedy of 13 men’s death causing the Mann Gulch fire disaster in Montana on August 4, 1949, presented by (Maclean, 1992) in the award-winning book “Young Men and Fire”. There, Weick questioned, “Why do organizations unravel?” and “How can organizations be made more resilient?” (1993, p. 628). He proposed four sources of resilience that make organizations/groups less vulnerable to disruptions. They

are improvisation & bricolage, virtual role systems, the attitude of wisdom, and respectful interaction (Weick, 1993). Along with this foundational application of “resilience” in the organizational context, a branch of the resilience body of knowledge has emerged and evolved besides its presence in numerous other fields.

OR was initially viewed in the term of coping skill of an organization. Weick, Sutcliffe, & Obstfeld (1999) procreated the said idea by theorizing that the OR comprises coping skills, which materialise when events get outside of normal operational boundaries, and knowledgeable people who can self-organise into ad-hoc networks to provide expert problem-solving. Resilient was then better understood by practitioners as the organizational capacity to withhold a negative event without damaging its ability to remain in the business.

Sutcliffe & Vogus (2003) viewed OR as a phenomenon at the organizational level that empowers organizational units to resume, rebound, bounce back, or positively adjust untoward events. This interpretation is mostly in line with the general understanding of what “resilient” is. Yet, the modern conceptualization of the term denotes not only bouncing back but also growing or becoming even better after facing a disaster as proposed by Kendra &

Wachtendorf (2003). They interpreted OR as a set of attitudes about desirable actions by organisational representatives, as it is about developing new capabilities. It is believed that the learning gained by facing untoward events expands the capacities of the organization by means of developing new capabilities. Luthans (2002) also came with a similar interpretation of OR, as the capacity to rebound, 'to come back from adversity, uncertainty, conflict, failure or even positive change's. Hence, being resilient means becoming even stronger and more capable than ever after confronting a devastating event.

Linnenluecke and Griffiths (2012) interpreted OR as a process containing three stages namely; anticipation, coping, and adaptation. They develop the Relative OR Scale to assess the OR (Figure 1). Achieving success in dealing with challenging events is usually progressive and incremental. Hence, treating OR as a process is virtually meaningful. In the meantime, some authors have viewed OR as both a dynamic process and an outcome of strategies (Cascio, 2009; Pollock, 2016). Pollock stated that an organization's strong sensitivity to perturbations on any scale is OR. This interpretation is unique among the others as it holds dual views of organizational resilience; a process and an outcome. However, they haven't

distinguished when and where the OR is supposed to perform the different roles; process or outcome.

Banahene, Anvuur, & Dainty (2014) stated OR as a capability that enables organizations to adjust to perturbation, moderate the effects of risk and uncertainty and take advantage of emergent opportunities. Furthermore, it was noted that the existing literature identified OR principally in relation to stable and permanent organizations. However, projects of temporary, cross-functional, and dispersed nature were not well represented in the present body of OR literature. They argued that the characteristics of project organizing, diversity in resilience definitions and dependent nature of resilience make the application of OR in project organising challenging (Banahene, Anvuur, & Dainty, 2014). Similarly, British Standards Institution (BSI) (2014) viewed OR as being adaptable, competitive, agile, and robust. Both definitions had counted on the organization's flexibility in dealing with crisis situations. However, the BSI's definition meant this to be a long-lasting ability with a passion for competitiveness.

In 2013, Lee, Vargo, & Seville defined OR as a multidimensional, socio-technical phenomenon that addresses how people, as individuals, or groups, manage uncertainty. Weick & Sutcliffe's (2001) view on OR

shows greater compatibility with Lee, Vargo, & Seville's (2013) understanding of the same. For them, OR is likely to be achievable only when it is backed by strong leadership (Lee, Vargo, & Seville, 2013) and great leaders with stronger resilient capacities would pull back their organizations from disasters and make them survive and thrive. Similarly, Weick et al. (1999) identified the need for knowledgeable people to aid the organization in finding the recovery plans.

Researchers view organizational resilience as a relatively new field

of research and practice. It is being applied to understand the adaptive capacities of organizations faced with unexpected events and uncertainties in the context of complexity (Jiwani & Milley, 2009). This heavily applies in crisis and emergency management. In this context, resilience helps organizations to achieve their objectives and fulfill their core purpose. The resilient organization can anticipate, respond and adapt to acute or sudden shocks and chronic or incremental changes so that it survives and prospers into the future (BSI, 2014).

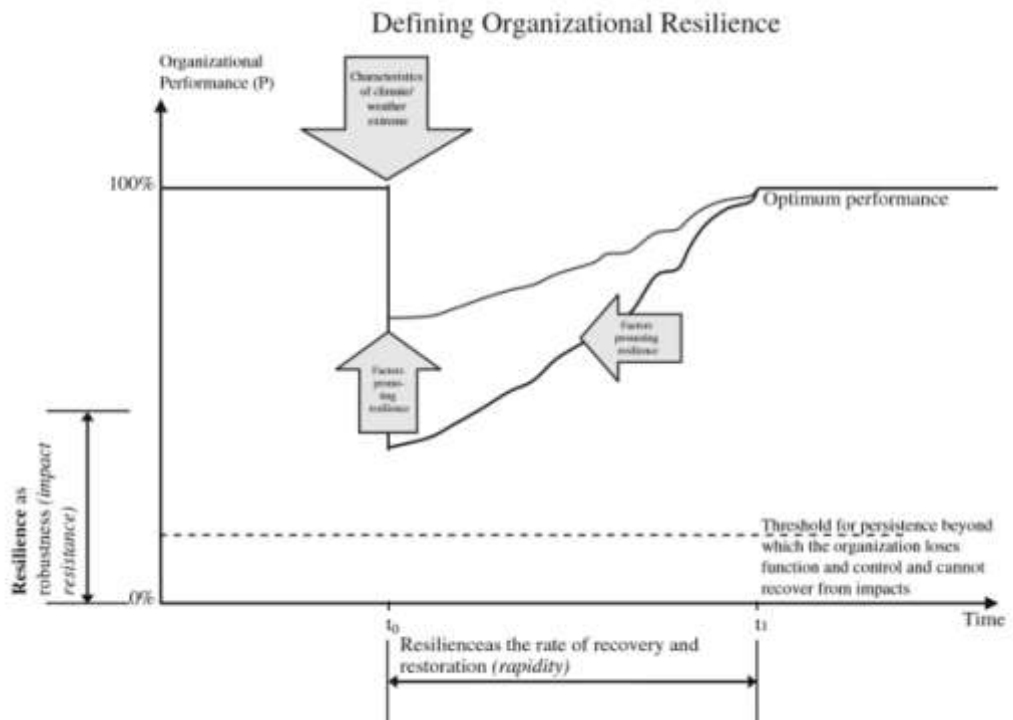


Figure 1: Defining Organizational Resilience

Source: Linnenluecke, M.K., & Griffiths, A. (2012). Assessing organizational resilience to climate and weather extremes: complexities and methodological pathways. *Climatic Change*, 113, 933–947. <https://doi.org/10.1007/s10584-011-0380-6>

Many definitions in general stress resilience as a means of recovering from disasters. Therein, adaptive capacity is an essential component of resilience because it reflects the learning aspect of the organization in response to crises (Carpenter & al, 2001). Organizations that are not learning from the crises will remain crisis-prone. In contrast, crisis-prepared organizations keep learning and become adaptive to crises. Crisis orientation of organizations thus can be used in grouping organizations based on their adaptive capacity (Pauchant & Mitroff, 1992). Additionally, organizations can be placed in a continuum between crisis-prone and crisis-prepared, based on their adaptive capacity, which is a predominant requirement to be resilient (Pollock, 2016). Consequently, many authors found adaptive capacity as a lead predictor of organizational resilience (Garvin, 2000; Smith & Elliott, 2007; Pollock, 2016).

Resilient organizations are crisis-prepared. They learn from their own crises and as well from the experience of others. These learnings assist them in avoiding failures. They, on the other hand, sharpen the organization's proactiveness (Smith & Elliott, 2007). Therefore, resilient

organizations can be branded as "crisis-prepared". For this reason, nuclear power plants and aircraft carriers are often referred to as high resilient organizations. But many organizations today are less resilient and lacking the ability to withstand disruptions (Pollock, 2016). This may attribute to the excessive rate of failures in the business field despite several helping arms.

While distinguishing reactive resilience and proactive resilience, Somers (2009) noted that it is often followed by an event or crisis. Others who acknowledged the reactive nature of the OR are Mallak (1998) and Hollnagel (2006). Mallk (1998; 148) described resilience as 'the ability of an individual or organization to expeditiously design and implement positive adaptive behaviors matched to the immediate situation". Parallely, Hollnagel (2006; 13) showed OR as an intrinsic ability of an organization (system) to maintain or regain a dynamically stable state, which allows it to continue operations after a major mishap and/or in the presence of continuous stress. In 2011, Hollnagel and others suggested four dimensions of OR, namely, anticipation, monitor, respond and learn (Figure 2).

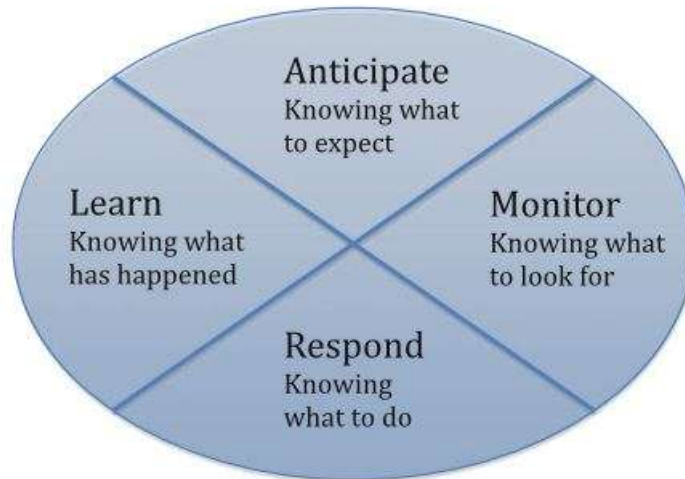


Figure 2: Four Dimensions of Organizational Resilience

Source: Hollnagel, E., Paries, J., David, D. W., & Wreathall, J. (Eds.) (2011). Resilience engineering in practice: A guidebook. Farnham, Surrey, UK: Ashgate.

A resilient socio-technical system possesses the abilities to Respond, to Monitor, to Anticipate, and to Learn (RMAL Model). The ability to respond is being able to respond to variations (both regular and irregular) by implementing predefined actions or altering the present functions. The ability to monitor is being vigilant of possible effects on the system's performance. Next, the ability to learn is being able to learn from experiences, (correspond to double-loop learning concept by Argyris & Schon (1974) as cited by Hollnagel, (2015, p. 4). The ability to anticipate is the capacity to foresee the future in terms of possible challenges and opportunities (Hollnagel, 2015).

An organization equipped with these abilities can better analyze and solve problems in a structured and practical way (Tengblad, 2018; Tengblad & Oudhuis, 2019; Torgeir, Stian, Ragnar, & Andrew, 2019). Additionally, those organizations would function well in the future as a result of learning gained from past experiences. Tengblad & Oudhuis (2019) argued that the OR is not only a capability but also a philosophy that spelled out how organizations can face adverse, complex, and uncertain events in a responsible and proactive way. Hence, it may even arise even prior to the disaster. They define OR as;

A resilient company or organization uses its financial,

technical, and social resources: 1. to develop long-term skills and competences and 2. in an efficient, reliable and flexible manner 3. in order to manage challenges and exploit opportunities (N & N, p. 8; as cited in Tengblad & Oudhuis (2019, p.3)).

The line of sequential activities suggested here is from a process; the OR thus resembles a process rather than capacity. Both Hollnagel's (2006) and Mallk's (1998) definitions emphasized the reactive nature of OR. Having armed with flexibility, first-rate communication, and the ability to mobile resources are thus considered as the critical success factors of the effective reactive action plan. They also support the process-based nature of the OR. Inconsistently, others interpreted it as the ability to foresee the crisis before its occurrence and the ability to cope with it if it happens to meet with the crisis. Leveson, et al. (2006) describe their proactive-flamed OR as the ability of systems to prevent or adapt to changing conditions in order to maintain control. As for them, resilient organizations should be capable of early detecting and avoiding unfavorable conditions and adapting them during their real-time occurrence and keep responding even after the disruption. This explains the continuous cause of an organization that must be maintained throughout its life

span. Therefore, regarded as managerially effective and operationally challenging. In the same tone, Hale and Heijer defined OR as "the characteristic of managing the organization's activities to anticipate and circumvent threats to its existence and primary goals" (2006; p. 35). Hence, to be resilient, organizations should develop their anticipating ability and adaptive capacity. The two approaches were seen distinctively (Wildavsky, 1991) and as well complementarily (Comfort, Sungu, Johnson, & Dunn, 2001; Kendra & Wachtendorf, 2003; Boin & Lagadec, 2000). Wildavsky (1991) viewed resilience as the capacity to cope with uninvited events and bounce back once they occurred while he interpreted anticipation as predicting and preventing potential dangers before the damage. He posited that the strategies of anticipation work best against known problems, whereas strategies of resilience work best against unknown ones. Each strategy is appropriate to specific conditions. Resilience strategies are appropriate when there is greater uncertainty and anticipation strategies apply best when the environment is in a steady-state and predictable mode.

The OR was defined with a closer link with environmental interactions by Williams, Gruber, Sutcliffe, Shepherd, & Zhao in 2017. They stated OR as the

process by which an actor (i.e., an individual, organization, or community) builds and uses its capability endowments to interact with the environment in a way that positively adjusts and maintains functioning prior to, during, and following adversity (p. 742). Resilient organizations should emphasize organizational learning as organizational learning gained from their own experience and others' experiences help to generate greater organizational resilience (Smith & Elliott, 2007). In the organizational literature, it is cited as an essential

organizational competence for modern organizations that describes one of the most important inherent characteristics that cause that business success (Naswall, Kuntz, Hodliffe, & Malinen, 2013; Britt, Shen, SinClair, Grssman, & Klieger, 2016). Tengblad (2018) simply defined OR as the capacity of a company to over time become a selected vibration in the marketplace. While proposing the new REC model of OR, he identified Reliability, Efficiency, and Change capacity as the main qualities of a resilient organization (Figure 3).



Figure 3: REC Model of Organizational Resilience

Source: Tengblad, S. (2018). Organizational Resilience: Theoretical Framework. In S. Tengblad, & M.Oudhuis, The resilience framework: Organizing for sustained viability (pp.19-38). Springer Nature Singapore Pte Ltd.

In REC model, reliability refers to the operational safety, sound risk management, product &

service quality, and quality of customer care. Efficiency measures how productive the

organization is in creating value for its stakeholders. Next, the change capacity refers to the flexibility and innovation potentiality of the organization. These three then are proposed to use as the key predictors of OR. Yet, the author held that the proper balance between three qualities might vary from organization to organization, industry to industry, and over time (Tengblad, 2018, p. 35). The REC model well addresses the organizational level capabilities

to become resilient basically at the present level. The “resiliency” as a system property is always coupled with an ability of a system to foresee the future based on existing trends and prepare itself to meet the challenges on its way (Hollnagel, 2006; Hollnagel, Paries, David, & Wreathall, 2011). Yet, the REC focus on the current state of performance doesn’t explicitly reflect the organization’s ability to anticipate and prepare for a possible future challenging event.

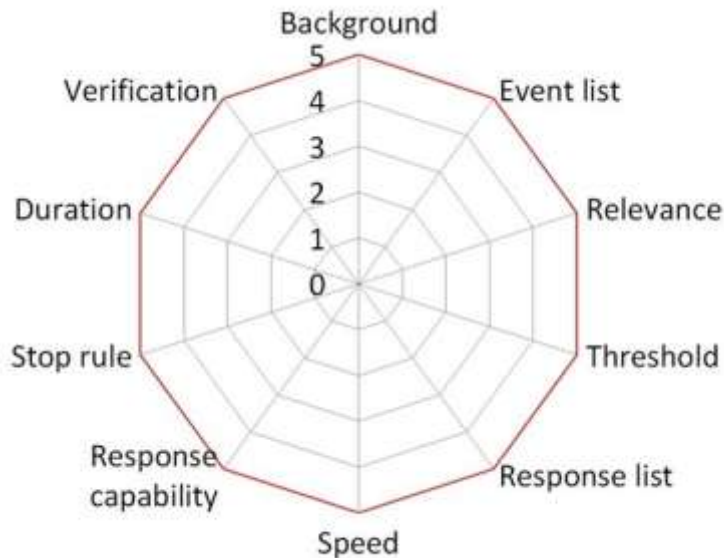


Figure 4: RAG Model of Organizational Resilience

Source: Chuang S, Ou J-C, Hollnagel E, Hou S-K (2020) Measurement of resilience potential - development of a resilience assessment grid for emergency departments. *PLoS ONE* 15(9): e0239472. <https://doi.org/10.1371/journal.pone.0239472>

In par with the four-dimensional RMLA model of Hollnagel et al. (2011), he came with RAG –

Resilience Analysis Grid in 2014 (Figure 4) which can assess the resilience systems (i.e. an

organization or an individual). They correspond to the stages of RMLA model (Hollnagel, et al., 2011) namely; Respond, Monitor, Learn and Anticipate (Figure 2). RAG intends to measure the resilience performance of a system, which, indeed, as for him, is not a quality of a system but the ability to succeed under varying conditions. Hollnagel (2015) expressed this in his work of RAG in 2015, as;

.....the ability of systems to succeed under varying conditions The purpose of the rather roundabout definition given above is to avoid statements such as 'a system is resilient if ...', since this narrows resilience to a specific quality. (Or even worse, that 'a system has resilience if.....) (Hollnagel, 2015, p.1).

In 2019, Hollnagel emphasized the same notion in his work of "Invisible trade-offs and visible consequences" by stressing the importance of developing the resilience culture within the organization.

High Reliable Organizations (HRO) is an analogous concept of managing crises and ensuring system safety, in which a culture of reliability is promoted to prevent operational failures (Porte, 1996). They are known to operate nearly error-free in extremely challenging and uncertain environments, where complex procedures, technology,

and guidelines are used to manage complex systems and conditions (Enya, Pillay, & Dempsey, 2018). Industries with a high level of risk profile such as construction in which the fatality rate is very high, gas & oil refining, aircraft, and nuclear industries often regarded as HRO and expected to function at an exceptionally high level with little or no accidents.

The theory of HRO once originated at the Berkeley campus of the University of California and has been studied by many organizational scholars to assess its application over a wide range of high-risk organizations. Karl E. Weick of the University of California (1980s) together with his team investigated the behaviour of organizations that operate in highly hazardous environments and came out with a set of traits they share commonly (Weick, 1987). Weick et al. later related the concept of collective mindfulness as an approach to ensure a safe culture at HROs (Enya, Pillay, & Dempsey, 2018). They identified a set of traits that explain the behaviour of HROs. They are;

1. Preoccupation with failure,
2. Reluctance to simplify,
3. Sensitivity to operations,
4. Commitment to resilience, and
5. Deference to expertise (Weick & Sutcliffe, 2001).

Four cornerstones of OR were used by Patriarca, Gravio, Costantino, & Falenami (2018)

to develop a semi-quantitative framework of OR based on which the resilient profiles can be generated. They put resilience at the organizational level as the combination of these four cornerstones: monitoring, responding, learning and anticipating (Patriarca, et al., 2018, p.266). The outcome was a modified model of OR based on the Resilient Analysis Grid (RAG) of Hollnagel's (2011). The proposed construct of Patriarca et al. (2018) holds greater similarities with Hollnagel's work and extends it up an Analytical Hierarchy Process in which weaknesses and strengths of the organizational resilient profiles can be spotted. Additionally, the new model allows managers to target the resiliency phase by phase rather than an incremental uptake.

The diversity is the organizational context that has accounted as an essential component of innovation propensity, decision effectiveness, anticipating ability etc. Its theoretical connection with OR has been questioned by Duchek, Raetze, & Scheuch (2020) and proposed a framework for resilience-enhancing diversity management. They emphasised the role of diversity in enhancing the resilient capabilities of the organizations throughout the three-stages process of OR (Anticipation, Coping and adaptation).

In 2019, Morales, Martinez, Gomez, Lopez, & Arguelles developed a model of resilience in which factors of OR were tested. With the support of existing theoretical sources and empirical evidences of 159 Mexican manufacturing organizations, they concluded adaptation capacity as the first-order antecedent of OR, whereas adaptation capacity was determined by resilient leadership, organizational capacity & management, and organizational culture. Additionally, they offered the individual level contributors for OR, namely, awareness cognition, organizational learning, and psychological alignment. Yet, the tested model only incorporated organizational level antecedents and thus included into the final model. Among the existing theoretical frames, this is the only model which used a single first-order factor to predict the OR. That was adaptation capacity, whereas this was engaged in many of the models as adaptive capacity (Hale & Heijer, 2006; Malik & Nilakant, 2011).

Resilient organization has the ability to intelligently anticipate and manage swiftly, has the capacity to learn from challenges and seeks opportunities to enhance its capability to adapt, bounce back faster, smartest and stronger (Janellis Pvt Ltd, 2015, p. 1). Four groups of OR indicators were proposed as

benchmarking indicators specifically, risk, readiness, response and assurance. The interpretations of the four main themes of OR reported by Janellis in 2015 are relatively identical to Hollnagel et al.'s (2011) classification of attributes of a resilient sociotechnical system; monitor, to anticipate, to respond and to learn. Nevertheless, empirical support was not presented for the benchmark OR indicators.

Vogus & Sutcliffe (2007) stated OR as an organizational level phenomenon as the power of organizational units to resume, rebound, bounce back, or positively adjust untoward events. They have defined OR as the maintenance of positive adjustment under challenging conditions such that the organization emerges from those conditions strengthened and more resourceful (p. 3418). Many emphases the enhanced capabilities of organizations in the forms of experience, learning, and knowledge.... etc. after confronting catastrophic events. OR, hence is more than a specific adaptation and often involve capacity building of the organizations.

Kahn et al., (2018) defined OR as an organization's ability to absorb strain and preserve or improve functioning, despite the presence of adversity. this modest definition simply put the current and future abilities of an

organization to bypass the troublesome events. They used three-staged process of integration, disavowal and reclamation; the products of different strains in specific parts of an organization. This idea too follows the process approach of OR.

OR is viewed as a means of shaping the competitive position of the organization due to the organizational learning supported by the uninvited occurrences. As such, Oliveira, Teixeira & Werther (2013) defined OR as continuous renewal of competitive advantages. Even if this interpretation doesn't incorporate any essential capacities that resilient organizations should possess, it summarised the overall outcome of organizational level resiliency. They enlisted this idea with four dimensions namely, leadership and followership interplay, organizational culture, strategic planning and making innovation a way of life. Apparently, all these dimensions targeted at measuring how good organization is in finding new ways of performing usual functions which is fundamental for overcoming devastating events.

Linnenluecke has contributed much in developing the OR construct. He and his colleagues have defined OR as the organizational capacity to absorb the impact and recover from the actual occurrence of an extreme

weather event (Linnenluecke, Griffiths, & Winn, 2012). In contrast to other definitions, OR was defined specifically within the context of extreme weather events whereas others have conceptualized a more general view of damaging events which covers a wider range of disturbing incidents. For instance, some have accounted even an expiry of core functional member who was holding a greater responsibility of key organizational functions in to adverse profile of the organizations. They proposed a three-dimensional framework of OR in which simple extreme, complex extreme and unique or single extreme weather events are assessed. Along with that they came up with a five-stages process of organizational adaptation and resilience.

A theoretical framework would become popular and operationally sound when it is specific and less ambiguous. The 3-component resilient capacity framework of Lengnick-Hall and others gained much popularity due to its specificity. Furthermore, it was supported by empirical evidences too. Their model was based on the definition of OR; a unique blend of cognitive, behavioural, and contextual properties that increase a firm's ability to understand its current situation and to develop customized responses that reflect that understanding (Lengnick_Hall & Beck, 2003; Lengnick-Hall & Beck, 2005; Lengnick-Hall & Beck, 2009; Lengnick_Hall, Beck, & Lengnick_Hall, 2011). Figure 5 presents the 3-component resilience framework of Lengnick-Hall and others.

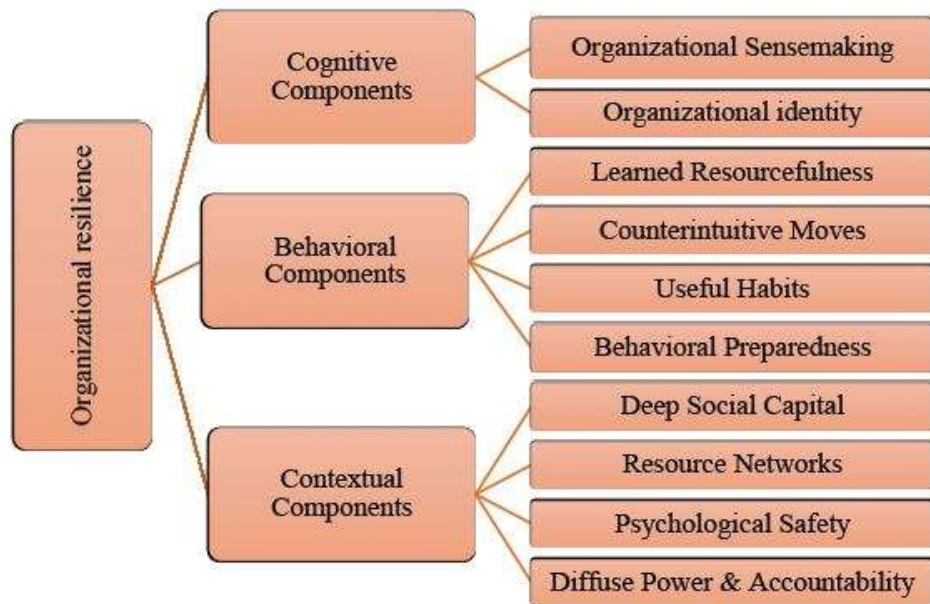


Figure 5: The 3-component resilience framework

Source: Lengnick-Hall, C.A., Beck, T.E. and Lengnick-Hall, M.L. (2011), Developing a capability for organizational resilience through strategic human resource management, *Human Resource Management Review*, vol.21 No.3, pp.243-255.

Here cognitive, behavioural and contextual components constitute the OR. Cognitive part represents the organizational ability to sense the potential adversities, behavioural component describes the established behaviours that enable the organization to respond and, finally, contextual resilience measures the relational strength of the organization in fighting with the adversities. Later in 2011, Lengnick-Hall et al. interpreted OR as a transformation process. They stated that the OR is a firm's ability to effectively absorb,

develop situation-specific responses to, and ultimately engage in transformative activities to capitalize on disruptive surprises that potentially threaten organization survival (Lengnick-Hall et al., 2011). Their definition and framework gained much attention by OR scholars hence effectively adopted for a wider range of OR researches (Akgun & Keskin, 2014). However, Yang's (2019) content analysis showed that some sub indicators are not empirically associated with OR.

Later, in Theory of dynamic capabilities of Teece et al. (1997) and Teece (2007) viewed OR as a pattern of dynamic capabilities of an organization (Yang, 2019). Three areas of dynamic capabilities are merged to form the dynamic capabilities that aid in handling the environmental uncertainties, namely, environmental dynamism, capabilities, and micro foundation.

Many viewed OR an umbrella concept denoted for diverse perspectives and approaches

4. CONCLUSION

This review aimed at revisiting the definition of OR to distinguish it from other related facets. OR is a phenomenon at the organizational level. It empowers organizational units to resume, rebound, bounce back, or positively adjust untoward events (Sutcliffe & Vogus, 2003). It has proven to be neither an outcome nor the process but both (Cascio, 2009; Pollock, 2016). It demands more than “bouncing back” (Linnenluecke, 2015; DesJardine, et al., 2017). Again, OR is not just adaptation but more than the adaptation as it stresses subsequent growth followed by a devastating event (Carpenter & et al, 2001; DesJardine, Bansal, & Yang, 2017). Despite their highly correlated nature, OR is not either crisis management (Mallak, 1998; Somers, 2009; Hollnagel, 2006). OR must be necessarily a

(Burnard and Bhamra 2011; Duchek, 2014, 2019; Linnenluecke 2017; Williams et al. 2017). Some argue that the OR is an outcome rather than a process, management system, strategy or predictive measurement (Gibson & Tarrant, 2010). They perceived it as an outcome of complex environmental factors which included the organization’s risk culture. Thus, OR is known as the ability to anticipate, prepare for, respond, and adapt to shocking events (both sudden and gradual changes).

proactive and continuous organizational process, but it should not be reactive following a devastating event. Coping skill can’t attribute to the OR as it omits the preceding and succeeding stages of OR; the anticipation, and the adaptation respectively. OR is not either becoming stable as it calls for moving ahead (Hollnagel, 2006). Calling OR a “buffer capacity” seems unrealistic once the OR’s ability to thrive after a shocking event is concerned (Arrow, et al., 1995; Cardona, 2003). OR is not only a set of attitudes but also enactive behavioural movements towards gaining superficial capacities (Kendra & Wachtendorf, 2003; Hillmann & Guenther, 2021). "Getting stronger" is fundamental to be resilient. Collective organizational capability of adaptation, competitive, agile and robustness are prime

determinants of OR. Strong leadership and organizational learning & knowledge have identified as a complementary fact for OR (Lee, Vargo, & Seville, 2013). An organization equipped with these abilities can better analyse and solve problems in a structured and practical way (Tengblad, 2018; Tengblad & Oudhuis, 2019; Torgeir, Stian, Ragnar, & Andrew, 2019). Accounting the continuous and progressive nature of OR, it can be interpreted as not only a capability but also a philosophy at organizational level which spelled out how organizations can face adverse, complex, and uncertain events in a responsible and pro-active way. Theoretical implications suggest inclusion of the identified aligning criteria to any conceptualization or measures of OR while one should avoid alike but, disjoining criteria for interpretational and measurement purposes. Practical implications demand for organizations to primarily focus on the long-term continuous process of meeting the challenging environmental occurrences rather on discrete capabilities to respond to devastating events.

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