MANAGING DISRUPTION

PROPOSING A TEAM RESILIENCE ACTION MODEL (TRAM)

LAURA ROMAN
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“Being highly resilient is more than “hardiness” --- more than simply weathering a challenge. It is about sustaining long-term team viability” (Alliger et al., 2015, p.178).

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1 ABSTRACT

Teamwork and teamwork skills (World Economic Forum, 2016) are becoming increasingly important in the future. Even though there is a lot of research on teams in general (Kozlowski & Ilgen, 2006; Mathieu, Maynard, Rapp, & Gilson, 2008), considering the complexity of the working environment of the future and the challenges teams undoubtedly face, research on how teams collectively manage and deal with adversity is needed. Therefore, team resilience is an increasingly important topic for all businesses designing the work teams of tomorrow. Team resilience is “... the capacity of a team to withstand and overcome stressors in a manner that enables sustained performance; it helps teams handle and bounce back from challenges that can endanger their cohesiveness and performance” (Alliger, Cerasoli, Tannenbaum, & Vessey, 2015 p.177). Team level research is important because team resilience can be greater than its individual components alone (Alliger et al., 2015) and should be seen as a collective ambition of the team with a clear set of goals (Dove-Steinkamp, 2017).

This thesis systematically reviews team resilience literature using the input-mediator-output (IMOI) model as an analytical framework (Ilgen, Hollenbeck, Johnson, & Jundt, 2005). Based on the review the thesis introduces a Team Resilience Action Model (TRAM), to define the actions resilient teams take before, during and after adversity as well as the different social and organisational factors that influence each stage. The TRAM presents team resilience as purpose driven behaviour that can be influenced, trained, and developed. This model recognises team resilience as a threefold dynamic process which is influenced by several different factors in each phase. TRAM consists of three different phases: 1. Anticipate 2. Action 3. Attain and multiple influencing factors. The proactive actions of the first Anticipate phase of TRAM include minimizing possible future threats as well as maximizing emotional and physical response capacity and planning. The reactive actions of the second Action phase of TRAM include recognising threats, reacting effectively, minimizing impact, and safeguarding stamina. The final Attain phase consists of restoring actions, reflecting, learning, and regaining the situation. Multiple different influencing factors affect each phase and action such as team structure, norms, values, organisational resources, and support, as well as shared mental models, transactive memory, team diversity, strategy, physical environment, and training and perceived social support and transformational leadership. This model supports the team resilience research by drawing together all the unconnected components that influence, support and build team resilience. Practitioners are provided with a comprehensive overview of the team resilience process to help facilitate the identification of intervention points and future development areas.
2 INTRODUCTION

Technology as well as demographic and socioeconomic transformation will disrupt the skillset needed for the future (World Economic Forum, 2016). The demand for new skills has radically changed in 10 years and as the disruption pace accelerates, also new ways of managing disruption, anticipating challenges and preparing for adversity in companies are needed. World Economic Forum (2016) report shows that businesses have been very slow in responding to these disruptions. Designing transformation strategies is a relative priority for only two thirds of the interviewed leaders. Lack of knowledge on future challenges, resource management, and profits as well as lack of alignment of innovation strategies are the main hindrances to this process (World Economic Forum, 2016). The Executive Summary: The Future of Jobs and Skills states, that the most important skills for future workers are “social skills—such as persuasion, emotional intelligence and teaching others”, p.3. It is therefore essential for the future, that businesses are required to “profoundly change their approach to education, skills and employment, and their approach to working with each other” (World Economic Forum, 2016, p.7). This should be visible in increased emphasis on team interaction internally and externally as well as the increased pressure on their performance.

Teams as a working unit are increasing and will continue to do so in the future (Alliger et al., 2015). Dove-Steinkamp (2017) defined a team as a group of people purposefully working together for a shared goal. Teams that have challenging tasks, high workloads, and limited resources, need to make sure of their efficiency while facing challenges that can negatively affect team performance, motivation, competence, and well-being (Alliger et al., 2015). Additionally, competition and constant change create disruptive challenges that organizations need to deal with. As the role of teams in organizations increases, businesses must find ways to develop and assess their resilience. Teams that are able to recover and learn from unexpected challenges are defined as resilient. “Resilience can be very widely defined as the capacity of the system/organization to successfully handle disturbances, including the surprising ones” (Gomes, Borges, Huber, & Carvalho, 2014, p.782).

Developing team resilience is one way of making sure team performance is not weakened by adversity (Alliger et al., 2015). Adversity can be defined as “...negative life circumstances that are known to be statistically associated with adjustment difficulties” (Luthar, Cicchetti, & Becker, 2000, p.858). Companies that promote a positive team culture might make a better profit in the future. Investing in team experience and designing the work places of tomorrow might bring several competitive advantages for companies in the future. Observing and assessing resilience behaviour could allow to recognise where interventions can take place to improve resilience in the team. Therefore, designing work teams and workplaces of tomorrow demands a comprehension of teams when they face (often unpredictable) challenges (Stephens, Heaphy, Carmeli, Gretchen, et al., 2013). Designers and businesses should therefore consider the positive team climate and the support mechanisms that boost the team performance by adopting processes that provide support and help them to bounce back from adversity, so that they are more prepared to deal with, accept, and learn from failure. Additionally,
the processes that support teams before, during and after these events should be carefully considered. Team resilience research offers some insight to the inputs and processes required to enhance team resilience, consequently strengthening the team, preparing it for future challenges and improving its performance.

“Team resilience may prove to be an important positive team level capacity that aids in the repair and rebound of teams when facing potentially stressful situations. Teams which display the ability to either thrive under high liability situations, improvise and adapt to significant change or stress, or simply recover from a negative experience are less likely to experience the potentially damaging effects of threatening situations” (West, Patema, & Caesten, 2009, p.254).

Current research has focused on individual and organisational levels of resilience, but a lot of research is still missing about how teams collectively cope with and recover from adversity and what kind of support mechanisms teams could use to boost their strength in the face of adversity. This knowledge is very important since according to Hackman (2002), between 50 to 60 percent of teams fail to meet their goals. As the possibility of failure is apparent, it is important to understand how teams cope with adversity and bounce back with a stronger will to succeed. Firstly, team resilience should be studied above and beyond individual perspectives, since team resilience is a collective experience that can be greater than the sum of its individual parts (Alliger et al., 2015). Additionally, team resilience is not acquired by putting resilient individuals in a group (Alliger et al., 2015). Secondly, some of the studies that exist about team resilience, have classified it as an emergent state (i.e. “members interdependent acts that convert inputs to outcomes through cognitive, verbal and behavioural activities of the teams”) teams could utilize to evolve into being more resilient (Marks et al., 2001, p.357). Furthermore, acknowledging that teamwork is purpose driven behaviour, also team resilience should be viewed as such (Dove-Steinkamp, 2017). Therefore, research where team resilience is seen as a whole; as the iterative sum of the inputs, processes, and emergent states, instead of as just one of them alone (Mistry, Stoverink, & Rosen, 2015) is necessary. Furthermore, practitioners are lacking clear and concise models they could refer to while developing their team resilience.

2.1 MOTIVATION

As a product manager of a design team, I know that teams are constantly affected by challenges. Adversity often left teams traumatized and teams rarely emerged from crisis stronger and more resilient. Some teams were better at coping with adversity, while others struggled greatly. The teams that were able to look beyond the initial challenge seemed to cope better and were able to modify their approach according to the situation and consequently were better prepared when the next challenge approached. I started wondering if it would be possible to prepare for adversity in advance and if it could make the teams stronger and less affected by stressful events, what kind of touchpoints do teams need to consider and what kind of actions should be taken to achieve a resilient team. Additionally, as the importance of teams increase and teams are expected to work independently and autonomously, tools and processes should be
available for boosting their performance and motivation. These observations motivated me to seek further knowledge on team resilience. This thesis aims to provide new viewpoints for product and project managers in order to enhance their team resilience. By preparing their teams for challenges in advance and considering the necessary intervention points, the performance of the team could be increased while developing a supportive team climate.

2.2 OVERVIEW OF THESIS
This thesis provides a systematic review of team resilience literature and provides a Team Resilience Action Model (TRAM) teams could refer to while identifying the intervention points that their team needs support with. The existing research from the past ten years was analysed with the input-mediator-output (IMOI) framework to form a comprehensive understanding of the elements affecting team resilience. The results of the IMOI framework are presented in Figure 4. This thesis begins with by explaining the methodological approaches. After discussing the key concepts, the Input-Mediator-Output framework is presented. Using the IMOI framework as a foundation, existing team resilience literature from the past 10 years is analysed. Finally, the main results are discussed and integrated into Team Resilience Action Model (TRAM) proposal. TRAM model is summarised in Figure 6 and Figure 7.

This thesis aims to improve the understanding of team resilience. Team resilience research is a very new field, and there are still no established ways defining how it should be measured or developed on a conceptual level (Morgan, Fletcher, & Sarkar, 2017). Team level research is important as the outcomes teams can collectively produce are very different to individual components alone. Consequently, the objectives of this thesis are to find out if it is possible for teams to prepare for adversity in advance and to define the tools and processes teams could use when acknowledging, empathizing and responding to adversity.
2.3 LIST OF FIGURES AND ABBREVIATIONS

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SLR- Systematic Literature Review
IPO- Input-Process-Output Framework
IMOI- Input-Mediator-Output- Input Framework
TRAM- Team Resilience Action Model

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3 MAIN CONCEPTS

3.1 RESILIENCE

“Resilience” originates from the Latin word resiliēns, which means to “bounce back, recoil” (dictionary.com, 2018). It is further described as the “ability to recover from adversity”. The online Merriam-Webster dictionary defines it as the “ability to recover or adjust to misfortune or change” (merriam-webster.com, 2018). While these definitions explain the concept, they do not consider the different systems and processes affecting team resilience. Resilience research has begun in the social and health sciences (Tusaie & Dyer, 2004) and ecological sciences (Linnenluecke & Griffiths, 2013). Additional research on resilience has been conducted in many fields like organisational psychology (Avey, Reichard, Luthans, & Mhatre, 2011), strategic management (Vālikangas, L & Romme, G., 2012), and engineering (Hollnagel, Paries, Woods, & Wreathall, 2011), and while all of these studies focus on either the individual or organisational level, only few studies (Morgan et al., 2017) address the team level resilience. Criticism ((Wald, J., Taylor, S., Asmundson, G., Jang, K., & Stapleton, 2008) has been directed towards the vague and inconsistent definition of resilience and the properties required for being resilient as well as the overall concept of resilience.

Avey et al. (2011) and Youssef & Luthans (2007) describe resilience as a psychological capacity that has a positive impact on work performance and attitude. Resilience produces proactive and reactive measures for coping with adversity and helps to recover from setbacks (Youssef & Luthans, 2007). Reactive action enables the recovery and proactive action promotes learning and growth as a result of a challenging event (Youssef & Luthans, 2007). According to Hollnagel et al. (2007), instead of only a defensive reaction to crises teams should opt for a more proactive approach by creating a process that supports maintaining performance. Proactive processes create an atmosphere of safety in the organization. Emotional resilience highlights the importance of emotions as a resource for coping with adversities (Waugh, Wager, Fredrickson, Noll, & Taylor, 2008). Emotional resilience is developed by creating an atmosphere that promotes the expression of emotions and by providing a safe space where relationships between members are found on trust and acceptance (Stephens et al., 2013). Resilience has also been studied from the ecological perspective (Linnenluecke & Griffiths, 2013). In emergency management situations (Linnenluecke & Griffiths, 2013), resilience is described as an ongoing capability of bouncing back stronger than before. Furthermore, the process is supported by continuous risk moderation before and an immediate reaction during the disaster (Linnenluecke & Griffiths, 2013). Additionally the continuity of this process is important, because knowing how to respond to one crisis does not ensure the correct response during the next one (Linnenluecke & Griffiths, 2013).

While these viewpoints offer a lot of insight into the mechanisms of resilience on an individual level, team level research should be viewed differently, as team level resilience is a collective experience with collective outcomes that don’t necessarily correlate with the
resilience of the individuals in the team. The following section examines the proposed concepts of team resilience on both an individual level as well as the team level.

3.2 RESILIENCE AS A TRAIT

3.2.1 INDIVIDUAL PERSPECTIVE
On an individual level, the viewpoint of resilience as a stable quality (Maguire & Cartwright, 2008) describes resilience as the ability to rebound to an earlier state, unaffected by adversity. This approach is also described in other research as an individual personality trait (Ong, A., Bergeman, C., Bisconti, T., & Wallace, K., 2006) where resilience can function as a buffer against stressful events (Fredrickson, Tugade, Waugh, & Larkin, 2003). “Resilience embodies the personal qualities that enable one to thrive in the face of adversity. ... Resilience is a multidimensional characteristic that varies with context, time, age, gender, and cultural origin, as well as within an individual subjected to different life circumstances” (Connor & Davidson, 2003, p.76). Trait-based resilience research emphasises individual personality traits like optimism and self-efficacy that ensure prosperity on both social and personal levels. Resilience is seen as a moderating quality, safeguarding the recovery from adversity by diminishing the unfavourable effects of dealing with hardship (Coutu, 2002; Luthar, Cicchetti, & Becker, 2000; Shin, Taylor, & Seo, 2012; Wanberg & Banas, 2000).

3.2.2 TEAM PERSPECTIVE
On a team level, looking at resilience as a trait only can be considered short-sighted, as it does not consider the interaction of the individual with his or her surroundings (Seery & Quinton, 2016), and neither does it allow for flexible adaptation or growth (Dove-Steinkamp, 2017). Individuals as well as teams are continuously affected by other systems such as the environment, their family or community and the resources that the organisation can offer (Mathieu et al., 2008). These external systems and internal resources affect the decisions that teams make (Dove-Steinkamp, 2017). A clear theme in all the literature is that even though teams consist of individuals, team resilience should be a group experience. Resilience in teams is experienced collectively and research should focus on the shared collective experiences of teams. Studying teams should not only include analysis of individuals, but also the collective ways by which teams organise their resources (Vera, Rodríguez-Sánchez, & Salanova, 2017). Alliger et al. (2015) and Morgan et al. (2017) have stated that a group of resilient people might not make a resilient team. A team made of resilient individuals could still have communication problems or contradictions about leadership, lack knowledge on how to work together or support each other (Alliger et al., 2015). The sum of resilient individuals can also be greater than their individual resilience alone (Decroos et al., 2017). “Group-level resilience does not necessarily arise when a team is composed of individuals each of whom is resilient at an individual level—rather, it is truly a team-level phenomenon” (Alliger et al., 2015). Therefore, team resilience should be regarded different from individual resilience (Brodsky et al., 2011). Research on team resilience also needs to take into consideration the interaction of the team and the environment, the shared team experience and the interaction inside the team (Galli, 2016; Yukelson & Weinberg, 2016).
3.3 RESILIENCE AS ADAPTATION

3.3.1 INDIVIDUAL PERSPECTIVE

“Adaptation, learning and self-organization in addition to the general ability to persist disturbance” (Folke, 2006, p.259) is the distinctive feature of the resilience as adaptation view. The adaptive transformative process recognises that it is possible for “people to learn from their experiences and to consciously incorporate this learning into their interactions with the social and physical environment” (Maguire & Cartwright, 2008). By acknowledging people as the drivers of change (Herreria et al. 2006), it can be said that people are able to shape the impact caused by the change (Maguire & Cartwright, 2008), and successfully adapt and learn to be better prepared for the upcoming adversities. Furthermore, individuals affected by the change do not bounce back to the former normal state, but instead innovate for a new “form of normality” (Juen & Siller, 2013).

3.3.2 TEAM PERSPECTIVE

Adaptation and resilience are seen as similar processes by many researchers (Kennedy, Landon, & Maynard, 2016). There are many different possibilities of adaptive interactions between groups and their surroundings. Rather than just returning to a pre-existing state, this concept includes the creative and adaptive capacity of a group to respond to change. This innovative response is time and place related and is supported by concepts of “renewal, regeneration and re-organisation” (Folke, 2006). Folke further states, that “in a resilient social-ecological system, disturbance has the potential to create opportunity for doing new things, for innovation and for development” (Folke, 2006). Groups with resilience are able to learn from past events and to develop and innovate new ways to function, that are better suited for that particular moment in time (Folke, 2006). This essential evolving process can change the way groups function on a fundamental level. Transformative resilience views change in a positive way, accepting its inevitability instead of “seeing change as a ‘stressor’ from which a community needs to recover to its original state” (Maguire & Cartwright, 2008). However, resilience as adaptation does not take into account the goal of improving team performance (Dove-Steinkamp, 2017) and also contradicts with the view of resilience as an emergent state presented by Kennedy et al. (2016).

3.4 TEAM RESILIENCE AS AN EMERGENT STATE

Originally formulated by Marks et al. (2001) to illustrate experiences in teams that were outcomes of team processes, “emergent states describe cognitive, motivational, and affective states of teams, as opposed to the nature of their member interaction. Although researchers have not typically classified them as such, emergent states can be considered both team inputs and proximal outcomes. For example, teams with low cohesion (an emergent state) may be less willing to manage existing conflict (the process), which, in turn, may create additional conflict that lowers cohesion levels even further” (p. 357). Emergent states are typically described in the literature as team norms and cohesion as well as psychological safety (Bang & Midelfart, 2017). Team cohesion develops team spirit and connects
the individuals with the group, and group norms help the team members to follow approved “moral” behaviour guidelines inside the team (Bang & Midelfart, 2017). Psychological safety is “a shared belief that the team is safe for interpersonal risk-taking . . . and that the team will not embarrass, reject, or punish someone for speaking up” (Edmondson, 1999, p. 354). Bowers, Kreutzer, Cannon-Bowers, & Lamb (2017) analysed research through the I-M-O model and concluded that emergent states in resilient teams mediate the commitment to the team and enable flexible ways of approaching challenges. Collective trust in the teams ability to solve challenges and the ability to design common principles of behaviour for the team, together with shared mental models and the familiarity between the team members, all work as emerging states of team resilience. Lately, resilience has been seen as an emergent state by researchers like Maynard & Kennedy (2016) who studied the connection between adaptation and team resilience. They claim that resilience is a dynamic state that is moderated by adaptation. The emergent state view is also supported by Carmeli, Friedman, & Tishler (2013, p. 149): “A team’s belief that it can absorb and cope with strain, as well as a team’s capacity to cope, recover and adjust positively to difficulties”. Emergent states can shift and change according to the inputs and processes and understanding what causes a shift from one state to another is important for teams and organisations (Dove-Steinkamp, 2017). Therefore, it is possible that team resilience is a state that supports a team’s capacity to function before, during and after adversity.

3.5 RESILIENCE AS A DYNAMIC PROCESS

Trait and emergent state views see resilience as what it is (Sheridan, 2008), rather than what it does (Patterson, 2002). This provides a viewpoint of resilience as a series of actions or responses that evolve with the situations. Norris, Stevens, Pfefferbaum, Wyche & Pfefferbaum (2008, p.130) described resilience as “a process linking a set of adaptive capacities to a positive trajectory of functioning and adaptation after a disruption”. When defining resilience as a dynamic process, assumptions can be made about what happens before, during and after the process between the team members as well as emotions of the team members while reacting to the challenge (Bowers et al., 2017). Also, intervention points and proactive training can be identified, addressed and developed (Dove-Steinkamp, 2017).

3.5.1 INDIVIDUAL PERSPECTIVE

Research shows that prior experiences affects the way individuals react to following experiences (Seery & Quinton, 2016). Accordingly, reactions to current situations are affected by what has happened in the past. The development of resilience, is therefore based on many different possibilities that occur in a process like shape (Golden-Biddle, 2006; Luthar et al., 2000; Moenkemeyer, Hoegl, & Weiss, 2012). This process provides support through the adversity and disorder. Norris et al. (2008) describe resilience as a process that enables the use of personal capabilities as the means to a positive outcome. Recent research suggests that resilience should be viewed as an adaptive capacity to respond to adversity (Folke, 2006; Stephens, Heaphy, Carmeli, Gretchen, et al., 2013), rather than
only rebounding, bouncing back (West et al., 2009) unaffected. Maguire & Cartwright (2008, p.4) illustrate how bouncing back to an original state will develop further to a “new state that is more sustainable in the current environment”.

3.5.2 TEAM PERSPECTIVE
Team resilience is in constant motion in accordance with the changing environment. This notion supports the fact that also developing resilience in the team is dependent on the situation on any given time (Morgan, Fletcher, & Sarkar, 2013, 2015). Several team resilience studies have seen team resilience as a process that can be influenced and refined, instead of shared traits or stagnant characteristics (Carmeli et al., 2013; Stevens, Galloway, Lamb, Steed, & Lamb, 2015; West et al., 2009). Rather than a trait, resilience could require tendencies that can be acquired and cultivated with training (Maynard & Kennedy, 2016). Morgan et al. (2013) defined it as a dynamic process that can safeguard teams from adversity where individual and collective resources can be used to adapt to adversity. Moreover, their narrative analysis showed that team resilience matures as the team evolves (Morgan et al., 2015).

Dove-Steinkamp’s (2017) research highlighted a five-step iterative process that supports the formation of resilience in teams. The five key steps are “specification, mobilization, detection, determination and reset” (Dove-Steinkamp, 2017, p.145). So, instead of a linear model, teams might bounce backward and forward between the phases or go through several phases at the same time in an iterative manner (Dove-Steinkamp, 2017). Morgan et al. (2013) suggest that resilience in sport teams consists of five “psychosocial processes”: transformational leadership, shared team leadership, team learning, social identity, and positive emotions; and four protective factors: group structure, mastery approaches, social capital, and collective efficacy. Alliger et al. (2015) have documented actions that take place before (i.e. minimize), during (i.e. manage) and after (i.e. mend) an adversity. If managed and supported in the right way this model can turn into an iterative cycle that supports itself, while failing to do so might result in the opposite (Alliger et al., 2015).

3.6 DEFINING TEAM RESILIENCE
Current research on team resilience has been conducted on the following fields: sport teams (Morgan et al., 2013, 2015), organizations (Rodríguez-Sánchez & Perea, 2015; Vera et al., 2017), neuro dynamics (Stevens et al., 2015), information systems (Amaral, Fernandes, & Varajão, 2015), psychology and positive psychology (Meneghel, Martínez, & Salanova, 2016; Meneghel, Salanova, & Martínez, 2016; Stephens, Heaphy, Carmeli, Gretchen, et al., 2013; West et al., 2009), entrepreneurial teams (Blatt, 2009), restaurant workers (Bennett, Aden, Broome, Mitchell, & Rigdon, 2010), project teams (Edson, 2012), top management teams (Carmeli et al., 2013; Rahimnia, Nazemi, & Moradian, 2014), nuclear emergency responses (Gomes et al., 2014), resilience models and measurement (Alliger et al., 2015; Bowers et al., 2017; Morgan et al., 2015; Sharma & Sharma, 2016; Van Der Beek & Schraagen, 2015). The team resilience definitions of all the papers examined in this thesis can be seen in Appendix 1.
Jackson, Firtko, & Edenborough (2007) have demonstrated that it is possible to learn and develop resilience when the mechanisms of resilience have been determined. Carmeli et al. (2013) and Kennedy et al. (2016) have defined team resilience as “a team’s belief that it can absorb and cope with strain, as well as a team’s capacity to cope, recover and adjust positively to difficulties” (Carmeli et al., 2013, p.149). They further suggest that team resilience is two dimensional; “efficacious beliefs of coping with the difficulty and the capacity to adapt” (p. 149). The first being the shared beliefs of team members about coping with strain and the second as the “ability to sense, interpret, and respond to complexities such that problems are noticed, and capitalized upon to cultivate a work system that is capable of adjusting to setbacks and continues to grow” (Carmeli et al., 2013, p.149). West, Patera, & Carsten (2009, p.254) define team resilience as “A positive team level capacity that aids in the repair and rebound of teams when facing potentially stressful situations. Teams which display the ability to either thrive under high liability situations, improvise, and adapt to significant change or stress, or simply recover from a negative experience are less likely to experience the potentially damaging effects of threatening situations”. According to Stephens, Heaphy, Carmeli, Spreitzer, & Dutton (2013), the purpose of resilience is not only to “recover functioning back to a ‘normal’ level but also learn and grow from the adversity to emerge stronger than before” (Stephens et al., 2013, p.15). "Resilience can be very widely defined as the capacity of the system/organization to successfully handle disturbances, including the surprising ones" (Gomes et al., 2014, p.782). Moreover, innovation, productivity and agility increase in resilient teams (Sharma & Sharma, 2016).

Resilience was originally defined as a process by five authors (Dove-Steinkamp, 2017; Furniss, Back, Blandford, Hildebrandt, & Broberg, 2011; Meneghel, Salanova, et al., 2016; Morgan et al., 2013, 2015). Multiple different researchers (Carmeli et al., 2013; Stevens et al., 2015; West et al., 2009) describe team resilience in their research as a “dynamic process that changes over time” which can vary depending on the situation and occasion (Morgan et al., 2017, p.162). Alliger et al. (2015, p.177) describe the process quite accurately, even though they define team resilience as “…the capacity of a team to withstand and overcome stressors in a manner that enables sustained performance; it helps teams handle and bounce back from challenges that can endanger their cohesiveness and performance”. Team resilience has a dynamic structure and these processes can vary over time due to the influence of the team environment (Morgan et al., 2015). Furthermore, teams that are successful under challenges by adapting to and learning from the situation are potentially less affected by the stress (Alliger et al., 2015; West et al., 2009). This thesis will therefore, view team resilience as a multifaceted dynamic process that impacts and is influenced by many internal and external team variables.

“Being highly resilient is more than “hardiness”—more than simply weathering a challenge. It is about sustaining long-term team viability” (Alliger et al., 2015, p. 178).
3.6.1 Defining a Team
The literature review revealed, that team resilience was studied in many different types of teams, such as project teams (Edson, 2012) and restaurant workers (Bennett et al., 2010), emergency response teams (Furniss et al., 2011), top management teams (Carmeli et al., 2013) and sport teams (Morgan et al., 2013, 2015). A team is composed of over two members, aiming for a common goal with individual responsibilities (Salas, Dickinson, Converse, & Tannenbaum, 1992). Teams can be physical or virtual (Kirkman, Rosen, Tesluk, & Gibson, 2004) and distributed in time (Fiore et al., 2010). (Dove-Steinkamp, 2017) defined a team as a group of people purposefully working together for a shared goal. To better grasp the definition of a team, dictionaries were explored for a definition.

-Wikipedia (n.d.-b) describes team as “a group of individuals working together to achieve a goal”. However, a group of people does not necessarily make a team; a shared goal is needed together with mutual commitment (Wikipedia, n.d.-b).

-Oxford Dictionaries (n.d.) see teams as “Two or more people working together”.

-Cambridge English (n.d.) define it as “a group of people who work together on a particular activity or project”.

3.6.2 Defining Adversity
The nature of resilience is such that it is mostly visible in situations with unexpected stress instead of chronic long term adversity (Gomes et al., 2014). Furthermore, Alliger et al. (2015) have also noted that resilience surfaces only when adversity is present, and it can only be observed when the team is burdened by stress. Teams with resilience might outperform others, especially when faced with consecutive challenging events and might be better prepared for the future (Meneghel, Salanova, et al., 2016). Teams that have the most resilience deal with adversity effectively and quickly while cultivating the health and resources of the team (Alliger et al., 2015). Furthermore, team resilience can be developed to safeguard the team from adversity (Morgan et al., 2015). Failing to notice challenges in advance might cause the team to weaken its performance and hinder its development (Dove-Steinkamp, 2017). Adversity can be long lasting and chronic or sudden, surprising and acute (Alliger et al., 2015).

The literature review highlighted that the occurrence of a traumatic event is a prerequisite of resilience. This adverse event could risk the functioning of a team during or after the adverse event. A traumatic event can be seen as conflicting interest between external requirements and the internal resources (Soucek, Ziegler, Schlett, & Pauls, 2016). Events like these could be a change in work related tasks, a colleague’s illness, organizational turmoil or sudden termination of projects (Moenkemeyer et al., 2012). The literature review disclosed several terms for defining these disruptive events such as “challenge” (Alliger et al., 2015) “stressor” (Bennett et al., 2010), “adversity” (Carmeli et al., 2013), and “emergency” (Gomes et al., 2014). Only some of the studies explained more thoroughly the
types of events that these could be. Alliger et al. (2015) proposed, that challenges can be chronic and last a long time or acute with an immediate impact. Dove-Steinkamp (2017) specified disruptors as “anything that has the potential to interrupt familiar routines or situations and thus affect – either directly or indirectly – team processes and team outcomes for some period of time” (Dove-Steinkamp, 2017, p.38). Many studies commented on tensions inside the team, poor organisational culture and weak communication as the source of adversity (Bowers et al., 2017; Kristiansen, Murphy, & Roberts, 2012; Morgan et al., 2013). Additionally, a decline in performance (Kristiansen et al., 2012) and a lack of back-up behaviour (Bowers et al., 2017), together with too much work, conflicts or vagueness in work roles (Meneghel, Martínez, et al., 2016) as well as unsatisfied customers or co-workers, busy work shifts and an unbalance in work-family can also cause stress (Bennett et al., 2010). Morgan et al. (2013) has noted in his study that coach-player interactions and untrustworthy team mates can cause challenges. Blatt’s (2009) study noted that missing funding, fails in launching new technology, competitor and schedule challenges cause a lot of stress. Even recession can have adverse effect on a team (Carmeli et al., 2013). Internal disruptions can be evaded in advance if they are noticed; Dove-Steinkamp (2017, p.121) identified several signals that can signify internal challenges, such as bickering, avoidance or withdrawal from the group, lack of affective bond/cohension, lack of focus on task, lack of communication, and misbehaviour.

In this thesis adversity is defined as

“... negative life circumstances that are known to be statistically associated with adjustment difficulties” (Luthar, Cicchetti, & Becker, 2000, p.858).

and stress is defined as

“the environmental demands encountered by an individual” (Fletcher, Hanton, & Mellalieu, 2006, p.359).

and disruption is defined as

“anything that has the potential to interrupt familiar routines or situations and thus affect – either directly or indirectly – team processes and team outcomes for some period of time” (Dove-Steinkamp, 2017, p.38).

and challenge is defined as

“something that by its nature or character serves as a call to battle, contest, special effort, etc.” (Dictionary.com, n.d.).
4 ANALYTICAL FRAMEWORK

4.1 THE INPUT-MEDIATOR-OUTPUT-INPUT FRAMEWORK

The input-mediator-output-input (IMOI) (Ilgen et al., 2005) is a framework for studying teams that takes into account the many elements that affect team performance (Landy & Conte, 2013). The framework visualises how different inputs influence the processes in teams and how processes and emergent states affect the outcomes and mediate between the inputs and the outcomes (Ilgen et al., 2005). Inputs are the enabling conditions before team activity, mediators consist of the processes and the emergent states that support and maintain the interactions between the group members and outputs are the outcomes and results of the two previous phases. Based on the systems theory that notes, that the outcomes of a team are more than its individual components (Wikipedia, n.d.a), this approach acknowledges that organisations consist of teams, teams consist of individuals and they are all affected by the environment and all of these levels are influenced by the environment surrounding the team (Mathieu et al., 2008). Figure 2.

The IMOI is extended from the original input-process-output (IPO) framework, introduced by (McGrath, 1964) 40 years ago. Ilgen et al. (2005) suggest that by substituting “process” with “mediator” “reflects the broader range of variables that are important mediational influences with explanatory power for explaining variability in team performance and viability” (Ilgen et al., 2005, p.520). They further reason, that some stages labelled as processes in the IPO model are instead emerging states that appear as the team works together. Furthermore, the IPO suggest that only linear interactions are possible, not considering the possible interactions between inputs (I) x processes (P) or between different processes (P) x (P). Additionally, the “I” at the end of the model helps to visualise the iterative cycle of teamwork (Ilgen et al., 2005).

The IMOI is divided into three stages: forming (IM), functioning (MO), and finishing (OI). The IM stage includes trust, planning, and structuring. Trust is composed of the collective beliefs about the effectiveness of team members and safety in taking risks. Planning is composed of strategic “information sharing, information seeking and communication” (Ilgen et al., 2005, p.523). Structures develop and maintain interaction patterns, norms, and roles in the team and support shared mental models and transactive memory of the team (Ilgen et al., 2005). The MO phase consists of bonding, adapting, and learning dimensions. Bonding phase manages team member diversity and conflicts. The adaption phase strengthens the team’s ability to help struggling members and to back up each other when necessary. Lastly, in the learning phase, knowledge is gained from the best team members, minority team members or from members with conflicting opinions. The OI-phase consists of the finishing of the project, completing a phase and beginning a new iterative cycle (Ilgen et al., 2005).
4.1.1 Inputs
Inputs, such as resources available to the team, team size, team connectivity, organisational context, team composition and job responsibilities enable the team to function (Landy & Conte, 2013) and influence the team in a direct or indirect manner (Forsyth, 2009). They are quite stable components which are distributed between individuals, teams and organizations (Mathieu et al., 2008). Inputs are enabling or constraining factors, such as team members individual competency, personality and characteristics, team level components such as task structure or leadership as well as organisational resources (Mathieu et al., 2008).

4.1.2 Processes
Processes transform the inputs into outcomes (Forsyth, 2009; Marks et al., 2001; Mathieu et al., 2008). The process describes what takes place inside the team and among its members as well as its surrounding environment (Bang & Midelfart, 2017). These processes can be related to the project the team is working on or interpersonal communication (Bang & Midelfart, 2017). Processes can be described as behavioural processes such as leadership processes, decision making process, communication, coordination, planning and monitoring resources (Landy & Conte, 2013).

4.1.3 Emergent States
Emergent states mediate inputs and outcomes (Mathieu et al., 2008). While processes are actions that transform inputs into outputs, emergent states are dynamic interaction properties between the processes (Marks et al., 2001) and should be seen as the outcomes of the team’s experiences (Marks, Mathieu, & Zaccaro, 2001). Emergent state is the psychological environment that arises from the combined inputs and processes (Marks et al., 2001). Emergent states can be described as cognitive and affective processes such as maintaining interpersonal relationships, team cohesion and norms, psychological safety and managing conflict and team member commitment (Bang & Midelfart, 2017; Mathieu et al., 2008) as well as shared mental models and transactive memory (Reiter-Palmon, Sinha, Gevers, Odobez, & Volpe, 2017).

4.1.4 Outputs
Outputs are the outcomes the team has accomplished (Forsyth, 2009). Outputs can be tangible or intangible, such as team cohesiveness, preparedness for future challenges, new innovations or better efficiency. They can also be better performance or team member satisfaction (Landy & Conte, 2013). Also individual outcomes may emerge, such as satisfaction, wellbeing or performance (Reiter-Palmon et al., 2017).
As visualised in Figure 1, inputs, mediators and outputs are all connected and affect each other in an iterative cycle. Environmental and organisational elements affect the team. Inputs affect processes, emergent states and outputs while outputs will affect and be affected by the mediators. Finally, the response arrow from outputs to inputs and to processes and emergent states signify the complexity of the teams and the issues they need to adapt to and learn from and the multiple simultaneous events that can influence the team at the same time. Since processes and emergent states are affected by change more easily than relatively stable organisational aspects, the feedback loop is stronger on the emergent states than inputs.

The IMOI framework was applied to support the SLR literature review and to form a general view of what resilient teams need to consider when supporting their teams resilience. Additionally, it guided the SLR by providing themes for analysis suggested by Ilgen et al. (2005) such as trust, planning, and structuring, team interaction, team norms, shared mental models and transactive memory of the team.
5 METHODOLOGICAL APPROACH

5.1 RESEARCH QUESTIONS
This thesis is a systematic literature review (SLR) to grasp the dimensions of existing team resilience literature and provide practitioners with knowledge on what intervention points to consider when building their team’s resilience. Team resilience research is still a new field and there is a lot of diversity in the conceptualisation of team resilience. Consequently, the RQ1 aims to review the different team resilience views and form a definition for this thesis. As shown in Figure 2, an Input-Mediator-Output framework was applied to support the literature review and form a general view of what resilient teams need to consider when supporting their teams resilience RQ 2. The inputs provide enabling conditions or a stable foundation that teamwork can be based on. Mediators are building blocks stacked above the foundation that shift and evolve when transforming the inputs into outputs. Finally, outputs reveal if the team has been successful in implementing the necessary procedures. The results of the IMOI framework analysis are integrated into a Team Resilience Action Model (TRAM) to propose a holistic perspective on team resilience. The research questions for this review are:

RQ1: Is team resilience a trait, an emergent state or a process?

RQ2: How do resilient teams manage disruption?
5.2 REVIEW PROTOCOL
Review planning, procedure, and findings followed the SLR process suggested by (Kitchenham & Brereton, 2013) consisting of six steps.

5.2.1 STEP 1: PRELIMINARY REVIEW.
A preliminary review was conducted about team resilience literature and research. The purpose of this review was to get a conceptual understanding of team resilience and the emergent research fields. This preliminary search was used to define the search string and later the validity check. Since the focus of this thesis is team level resilience, a preliminary search was conducted using “team resilience” NOT virtual in Aalto Finna database. A full text needed to be available in English and to assure the quality of the data, publications needed to be journal articles, conference proceedings or dissertations. 215 articles, 50 dissertations and 6 conference proceedings were discovered. The search string of (team*) AND (resilience*) OR (“team resilience”) NOT (virtual*) IN (Title or abstract or Keyword) was also tested, but as it produced many irrelevant studies.

5.2.2 STEP 2: PILOT SEARCH.
A review protocol was established that defined search terms, databases, inclusion and exclusion criteria, quality assessment, and forms of data extraction. The selection was limited to papers published until the end of 2017.

5.2.2.1 SEARCH DATABASE
Various education and business databases were consulted including ProQuest, Elsevier, Aalto Finna, and Google Scholar, during October 2017 January 2018. Only 28 studies about team resilience were identified. 19 studies out of the 28 form an original definition of resilience and only 18 have original empirical research (Amaral et al., 2015; Carmeli et al., 2013; Dove-Steinkamp, 2017; Morgan et al., 2013; Rahimnia et al., 2014; Stephens, Heaphy, Carmeli, Spreitzer, & Dutton, 2013; Vera et al., 2017; West et al., 2009).

5.2.2.2 INCLUSIONS AND EXCLUSIONS CRITERIA
Inclusion criteria included a) research topic was about team level resilience, b) research that studied physical teams in their working environment, c) a full text needed to be available in English, and d) journal articles or dissertations. There was no specific age or gender or field definition or empirical research specification, to ensure the widest possible variety of information.

5.2.3 STEP 3: SYSTEMATIC SEARCH AND EXTRACTION.
The systematic review followed the search protocol established in step 2. The data extraction was conducted by the author. An extraction form was constructed and it was iteratively filled out through the process. After the preliminary search, several business databases were consulted until reaching saturation. 1 conference proceeding and 16 journal articles were selected, using the cross-
disciplined search, nominated keywords and criteria. Firstly, each article was skimmed using the staged review: abstract, main body and literature sources. Secondly, a more exhaustive review was conducted to make sure that the papers’ research was about team level resilience. Thirdly, each article was read thoroughly to extract the description of team resilience and to identify the inputs, processes, and outputs.

5.2.4 Step 4: Additional Manual Search.
Citation snowballing was used to make sure all relevant literature was in the sample. This resulted in 10 additional journal articles and 1 dissertation that were included in the database (Blatt, 2009; Dove-Steinkamp, 2017; Edson, 2012; Furniss et al., 2011; Gomes et al., 2014; Kennedy et al., 2016; Lundberg & Rankin, 2014; Maynard & Kennedy, 2016; Rahimnia et al., 2014; K. Sutcliffe & Vogus, 2003; West et al., 2009). Furthermore, multiple additional sources were used to deepen my understanding of resilience, and to get a broader enriching overall knowledge of the history and current state of resilience research. These sources supported the analysis of the actual “data” and played an important part in enriching overall knowledge, giving perspective to the data analysis, and in defining the attributes of team.

5.2.5 Step 5: Quality Check
Most of the research papers were from peer-reviewed scientific articles, extracted from various business and scholarly databases. Many of the articles cite previous classical sources generally regarded as reliable. Many of the authors can be seen as experts in their field, thus adding to the reliability of this database.

5.2.6 Step 6: Data Analysis
The data analysis was based on the themes suggested by Ilgen et al. (2005) in the IMOI framework, such as trust, planning, and structuring, team interaction, team norms, shared mental models and transactive memory of the team, adapting, and learning dimensions. The nominated themes were collected in an Exel spreadsheet and divided in an into input, process, emergent state, and output categories. Each research paper was first skimmed for the nominated themes, while also documenting new emerging themes. This resulted in 10 themes in the input category, 7 themes in process category, 5 themes in the emergent state category and two themes in the outcomes category. The documentation is presented in Appendix 2.
5.3 DEMOGRAPHICS

5.3.1 DISTRIBUTION BY YEAR AND PUBLISH SOURCE

![Bar chart showing the number of published team resilience articles by year from 2003 to 2017.]

Figure 3. Number of Published Team Resilience Articles

be seen as influencers in team resilience research. Additionally, for the scope of this thesis four papers were of special interest, since they looked at team resilience from a process perspective, which is also the viewpoint of this study. These papers were Alliger et al. (2015), Dove-Steinkamp (2017) and Morgan et al. (2013, 2015).

5.3.2 Distribution by data collection and analysis methods
Research methods in the papers included surveys, case studies, and focus group interviews as well as literature reviews, narrative inquiry, and observation. The most common research design is a survey, they were used in 12 papers. Case studies and focus group interviews were utilized in three studies, literature reviews in four papers. Additionally, narrative inquiry was used in one study, as was modelling neurodynamic symbol streams and training interventions. Given the nature of resilience and its visibility only under pressure, not surprisingly there is only 1 paper that uses observation as a method.

* * *
6 RESULTS

The literature review looked at the current team resilience research through the Input-Mediator-Output-Input (IMOI) framework. 1. Input factors were seen to be quite stable features that affect the team; 2. Processes describe the actions the team takes to transform the inputs into outcomes; 3. Emergent states arise from these interactions between team members; and 4. Output or outcomes that describe the performance or benefits for the team. Most important inputs were trust, transformational and shared leadership, and team structure. Team structure included team norms, team diversity, strategy, physical environment, and training.

Most important processes identified by the literature review were planning, leadership and communication processes, adapting, bonding, learning, and debriefing. Emergent states described in the team resilience literature were shared mental models, transactive
memory, collective efficacy, interpersonal trust, positive emotions, psychological safety, and the ability to speak up. Outcomes were not discussed to same extent in the literature, but many studies emphasised the improvement in performance, effectiveness, satisfaction, unity, or skills of the team. As team resilience should be viewed as an non-linear process, where teams might bounce back and forward between the phases, or go through several phases at the same time (Dove-Steinkamp, 2017), the results are presented in an iterative cyclic manner in Figure 4.

6.1 TEAM RESILIENCE INPUTS

The support structures the organisation can provide are very important inputs. These include a positive organisational climate, available resources, training, leadership, and reward systems all contribute in a positive way (Van Der Beek & Schraagen, 2015). Also, monitoring the teams capability to respond to adversity by installing systems within the team to notice the lack of resources, exposure to threats, and absence or reduced working capacity of team members contribute important inputs (Dove-Steinkamp, 2017). The Bowers et al. (2017) analysis suggested that inputs enabling team resilience included eight dimensions: trust, implicit and explicit communication, norms, transactional memory, psychological safety, stability of team membership, and team assertiveness. Confidence of team members capabilities, communicating ideas verbally or nonverbally and established behaviour patterns together with the groups awareness of its collective knowledge and an atmosphere where it is safe to express your emotions and opinions followed by team members engagement to the team and the capability of members to persuade each other are all important inputs of team resilience (Bowers et al., 2017).

6.1.1 TRUST

Trust was named as an important input in many of the literature sources (Alliger et al., 2015; Blatt, 2009; Bowers et al., 2017; Meneghel, Martínez, et al., 2016; Sharma & Sharma, 2016; Stephens et al., 2013). Trust could be categorized as an input or an emergent state, but following the reasoning of Ilgen et al. (2005) and Bowers et al. (2017), it is placed in the input category in this study. Trust is composed of the collective beliefs about the effectiveness of team members and the collective beliefs of safety in taking risks (Ilgen et al., 2005). According to Ilgen et al. (2005) trust emerges when a team feels that their competence matches the challenge. Trust is shaped by previous experiences values, attitudes, moods, and emotions and it has a positive effect on interpersonal cooperation and teamwork (Jones & George, 1998). The Stephens et al. (2013) study showed that emotional carrying capacity was an important link between trust and team resilience. Trust provides the means for team members to show their emotions because it creates an atmosphere where it is safe to speak up, enabling learning from the emotional responses (Stephens et al., 2013).
6.1.2 Transformational and Shared Leadership

The recent Morgan et al. (2017) review highlights the importance of strategic transformational leadership for team resilience. Transformational leadership is based on the personal, emotional, and stimulating interactions between the leader and team member that are personalized according to the individual’s needs and help them to achieve their best capabilities (Bass, 1985). Transformational leadership supports learning from failure, thus encouraging risk taking and trying out innovative approaches (Peterson, Walumbwa, Byron, & Myrowitz, 2009). Additionally, it provides a collective vision of the team’s climate and the direction where the team is heading (Kozlowski & Ilgen, 2006). Rodríguez-Sánchez & Perea (2015) noted that transformational leadership supports innovation and proactivity. Furthermore, this supports team resilience by addressing adversity as a challenge instead of a threat and supporting innovative approaches to challenges (Vera et al., 2017). The Van Der Kleij, Molenaar, & Schraagen (2011) study suggested that team resilience was better when transformational leadership was practised. Also, independent team members can support transformational leadership by supporting team members in performing their best under pressure (Van Der Kleij et al., 2011).

Leadership divided between various team members in shared team leadership (Carson, Tesluk, & Marrone, 2007). The Morgan et al. (2015) research implies that the England team resilience was improved with shared leadership because all members of the team had a positive mindset about the challenge and were eager to perform their best for the team. Additionally, it boosted coordination by spreading the roles and responsibilities to numerous team members (Morgan et al., 2015). Their study reflects on players feeling pride in collectively owning the situation by individually taking responsibility of self-discipline. “Teamship” in challenges supported important principles that were mutually selected, while collective and individual responsibility were nurtured during adverse events (Morgan et al., 2015). Additionally, team member commitment and motivation was improved if the leader worked as one of the team members alongside their team (Dove-Steinkamp, 2017).

6.1.3 Team Structure

Structures develop and maintain interaction patterns, norms, and roles in the team and support shared mental models and transactive memory of the team (Ilgen et al., 2005).

6.1.3.1 Group Norms and Values

Morgan et al. (2013) define norms as established routine in the team and as an important factor for team resilience. Group structure can be physical or psychosocial and can include the team’s formal structure, norms and values. Morgan et al. identified that these include the accepted manner of conduction during adversity, reflection on a shared vision during adversity and the group’s liability during difficult times (Morgan et al., 2013).
6.1.3.2 TEAM DIVERSITY
The literature review revealed that team diversity boosts team resilience (Amaral et al., 2015; Blatt, 2009; Maynard & Kennedy, 2016; Sutcliffe & Vogus, 2003). Diverse teams are able to address challenges more successfully with more confidence (Bennett et al., 2010; Gomes et al., 2014; West et al., 2009). Gomes et al. (2014) researched how teams coped in a simulated nuclear emergency. They concluded that teams with a lot of diversity might make better decisions, which might demonstrate that team diversity can boost team resilience. Also (Golden-Biddle, 2006) have noted that diversity in the group and knowledge accumulation can help the team to sense and regulate complexity and grasp the moment and cope with circumstances thus boosting resilience. Furthermore, (Sutcliffe & Vogus, 2003) stated that diversity broadens the group’s knowledge base and can help look for ideal solutions as well as to sense and adjust complexity and handle the specific aspects in challenging situations (Sutcliffe & Vogus, 2003; Weick & Quinn, 1999). Generalist team members might be better at innovating new ways to combine old knowledge (Weick & Quinn, 1999). Also concerns about the benefits have been raised, for instance (Blatt, 2009) questions the impact of group heterogeneity to team resilience.

6.1.3.3 STRATEGY
Vera et al. (2017) claim that work systems that maintain the allocation of resources during adversity boost team resilience. Identifying the essential personnel, supplies, information, and talent available to the team or to accomplish given tasks is an important part of resource management (Dove-Steinkamp, 2017). Team resources play an important part in shaping the team’s resilience and they can determine if a strategy can be implemented (Furniss et al., 2011). Meneghel, Martínez, et al. (2016) noted that lack of resources or the demands on the existing resources weaken team resilience, subsequently influencing team performance. Therefore, it is important for the team to feel that they have the means to overcome the adversity and endure the challenge (Meneghel, Martínez, et al., 2016). Rodríguez-Sánchez & Perea (2015) nominated the most important resources as personal and social competence and support and family solidarity. Therefore, self-esteem and self-efficacy, determination, hope, positive attitude, and interaction skills, stable daily routines, family stability, as well as access to support from friends and family all play an important part in forming the feeling of resourcefulness for the individuals in the team (Rodríguez-Sánchez & Perea, 2015). Additionally, the balance between work life and personal life as well as the opportunity to develop new skills when needed advance team resilience, because it supports the protective resources of individuals that help to cope with challenges (Vera et al., 2017).

Furniss et al. (2011) divide the strategy level into four parts: a resilient repertoire, mode of operation, resources and enabling conditions, and vulnerabilities and opportunities. The skills and competencies and the strategy that help the system to respond to adversity make up the resilient repertoire. The mode of operation defines the procedure that the system uses during adversity as well as the way the system uses it. Resources and enabling conditions define the extent to which the strategy is possible to implement (Furniss et al., 2011).
6.1.3.4 TRAINING
Training resilience should begin with a collective analysis of the group’s current resilience status (Morgan et al., 2013). Identifying instances where the team has succeeded with a challenge can support coping mechanisms for future challenges (Morgan et al., 2017) as well as help the team to notice early warning signs (Alliger et al., 2015; Van Der Beek & Schraagen, 2015). The Dove-Steinkamp (2017) study stated that training could boost managers’ skills in leadership. Additionally, teams need to arrange mutual training sessions, because it supports the formation of team awareness; individual roles and strengths as well as team’s collective capabilities. A pilot in Doves study stated that, “The harder we train, the easier the simple things get” (Dove-Steinkamp, 2017, p.119).

6.1.3.5 PHYSICAL ENVIRONMENT
Gomes et al. (2014) pointed out that also the physical environment has a function in supporting team resilience. Access to display panels or computers and other tools necessary for working and placement of the team in a room had an effect on team resilience (Alliger et al., 2015; Gomes et al., 2014). Also, team size mattered, as too big a team size can reduce team resilience. On the other hand, the Amaral et al. study noted that access to equipment was rated as the least important factor in building team resilience (Amaral et al., 2015).

6.2 TEAM RESILIENCE MEDIATORS

6.2.1 PROCESSES
By narrative inquiry Morgan et al. (2015) were able to reveal five processes of team resilience: transformational leadership, shared team leadership, learning from mistakes, developing a unique team identity, and positive emotions despite of setbacks. Bowers et al. (2017) identified seven key processes that support team resilience: The ease of communication about contradicting arguments, planning ahead before challenges, leadership ways and processes, adaptability to a changing environment, willingness to help struggling team members, monitoring of the team’s performance, and shared decision making. Sutcliffe & Vogus’ (2003) study explained that most important processes for team resilience were those that supported team learning and that developed the team’s capabilities and diverse skillsets because they reduce stress when facing adversity. These processes boost the team’s motivation and perseverance during adversity (Sutcliffe & Vogus, 2003).

6.2.1.1 PLANNING
Planning is defined as “the degree to which the team arrives at an effective initial plan of behavioural action” and is composed of strategic “information sharing, information seeking and communication” (Ilgen et al., 2005, p.523). Planning is about collecting relevant information available to the team and then evaluating it in the light of the challenge (Ilgen et al., 2005). Furniss et al. (2011) defined planning as the way a team has arranged itself and “the style or structure that a system implicitly or explicitly adheres to” (Furniss et
al., 2011, p.6). Morgan et al. (2015) describe it as the big picture of the future transformation. Gomes et al. (2014) observed emergency response teams working seamlessly and defined it as forming a collective goal between several individuals or organisations by following a procedure they all comprehend. Team resilience is developed by forming coordinated supportive systems that help during adversity (Rodríguez-Sánchez & Perea, 2015). (Morgan et al., 2013) noted that all team members agreed that formulating a plan beforehand would help them when facing challenges. The broader and team member-inclusive the plan was and the more the plan applied every team members’ knowledge to tackle the situation, the better prepared the team was for the unexpected adversity and their resilience would be high (Morgan et al., 2015). Similarly, having a clear goal and mutual understanding about it made the team more resilient (Rodríguez-Sánchez & Perea, 2015).

Collective group processes and neuro dynamics were studied by (Stevens, Galloway, Lamb, Steed, & Lamb, 2011), who concluded that planning before chores helped efficiency during stressful events. Planning beforehand helped the team to rearrange their existing knowledge when a challenge occurred (Stevens et al., 2011). Furthermore, preparing well in advance improved performance when a challenge arose (Dove-Steinkamp, 2017). They further noted in their study that the most important elements of planning were prioritization, risk assessment, contingency planning, and resource specification. Additionally, US army emergency plans or standard operating procedures provide structure in case of anticipated challenges but they cannot provide support in unexpected situations. Instead, teams should “proactively” plan in advance to diminish the impact of the adversity or “reactively” adapt to the changing situation. “I understand that there are rules and guidelines, say the SOPs, which say it this way because that’s the bulk of you know, what turns out, so you have the most likely instance … but you have to have that structure to be able to go, ‘Let’s think about maybe this other little factor that maybe never really happens so that we can be prepared for it’ … not necessarily be guarding against it, but be prepared that it might happen” (Dove-Steinkamp, 2017, p.116).

(Morgan et al., 2013) study described how important it was to interpret the situation in the correct manner and to “filter out” unnecessary information. Time spent preparing in advance correlated with better resource specification and resilient teams were able to prepare in advance for future challenges (Morgan et al., 2013). An Olympic rower in the Morgan et al study explained that prior challenging experiences helped the team to form a mutual plan for facing adversity and develop a mutually accepted, shared approach for action that was based on collective experiences, not just designed for a particular disruption (Morgan et al., 2013).

6.2.1.2 LEADERSHIP PROCESSES
Leaders’ role is not only to help build team resilience but also to develop processes to sustain it. Leaders can support team resilience by distribution of resources, resolving responsibility inconsistencies, and by providing support (Alliger et al., 2015). The Gomes et al. (2014) research underlined the role of the leader in the team in supporting team resilience development. Team resilience has been seen to increase when each team member’s role is valued equally (Bowers et al., 2017). Giving power to expertise over rank, enabling
everyone with the best solution to offer help when needed and anyone with doubt or questions to seek for answers, enable efficient performance during adversity (Alliger et al., 2015). Also Morgan et al. (2015), demonstrate that team engagement in a collective vision and the distribution of responsibilities boost team resilience. Leaders’ role in teams is to enable a collective vision that works as a platform for teams sensemaking during adversity, and additionally, leaders can mobilize resources to the location of most need during challenges (Morgan et al., 2013). Shared leadership, leadership groups, and rotating responsibilities could enhance teams connectedness and liability (Cotterill, 2016). Leaders should make sure that enough time is taken for face-to-face gatherings (Stephens et al., 2013). Endorsing the negative feelings associated with the challenge and showing positive compassion and support enables a safe environment to share emotions (Stephens et al., 2013). Additionally, leaders could promote positive adaption by example when facing adversity (Sutcliffe & Vogus, 2003).

In the Morgan et al. (2015) study about elite sport teams’ coaches applied stimulating techniques to motivate their teams to think differently. Additionally, the coaches’ job was to help in debriefing after challenges and making sure everyone had a shared goal. To boost resilience in teams managers should support social resources and positive relationships between team members (Meneghel, Martínez, et al., 2016). They further suggest that, open communication and the sharing of ideas by all employees could be encouraged and team’s resources and workload should be carefully evaluated to make sure team skills are up to date as well as flexible work design, wider job descriptions and, clear roles and responsibilities (Meneghel, Martínez, et al., 2016). Additionally teams could invest time in making sure new employees understand and feel comfortable with the values and culture of the workplace (Meneghel, Martínez, et al., 2016) and understand the shared goals (Dove-Steinkamp, 2017). Leadership can also provide additional insight into teams’ prospective resources in the future (Dove-Steinkamp, 2017) and additionally create a team climate of mutual trust where it is easy to approach the team leader and where the leader is present and willing to work alongside the team which then again supports resilient teams. A trainer in Dove-Steinkamp (2017) study pointed out that “I personally think 75% of a unit’s performance is based on its command climate”, p.112.

6.2.1.3 BONDING
Bonding is seen as the collective feeling of the team toward each other (Ilgen et al., 2005). It goes beyond the desire to work together or trusting your team, to an emphatic desire to be together, even outside the work context (Ilgen et al., 2005). Bonding can be further divided into group cohesiveness, team viability, social integration, satisfaction with the group, person-group fit, and team commitment (Bishop & Scott, 2000; Kristof-Brown, Jansen, & Colbert, 2002). These represent team members’ emotional attachment to the team. Resilient teams have a strong social identity and are devoted to the team. Individuals in teams coordinate their efforts and ideas to support the team (Morgan et al., 2015). The Morgan et al. (2015) study identified group identity as one of the most important elements of team resilience. Deep emotional bonds, loyalty between team members, trust, and respect when facing adversity and friendship beyond team boundaries gave emotional and tangible support to team members. They further noted that social identity for the England
rugby union team was developed by imagery, codes of conduct, mottos, and semantic notes such as “teamship”. Social identity was defined by the emotional connection between group members strengthened by the collective experience of facing the challenge (Morgan et al., 2015). Also, social capital was important. It is the quality of interactions and caring relationships between group members that form profound emotional bonds and intimacy inside the team (Morgan et al., 2013). Additionally, top management team members were able to respond more effectively to challenges when their connection was strong (Carmeli et al., 2013).

Several examples were given in the Dove-Steinkamp (2017) research for bonding. A trainer explained “I think that a lot of it comes down to motivation and the ownership of a task. If you’re facing a challenge, then you’ll go down there and look for those resources. If you’re motivated. If you’re taking ownership of the task. If not, the motivation is not present, then who really cares what resources are available” (Dove-Steinkamp, 2017, p.129). Collective experiences shape the way team members interact with each other and help in forming strong bonds which make debriefing, consolation, and humour easier and more effective (Dove-Steinkamp, 2017).

6.2.1.4 ADAPTING
Adapting is measured by the team’s performance during adversity (Ilgen et al., 2005). The whole team benefits if the team adapts and adjusts its processes or composition according to the challenge. It might require sharing the workload of team members and backing up team members when necessary (Furniss et al., 2011; Ilgen et al., 2005) or adjusting initial goals to better cater for the situation (Gomes et al., 2014). Lundberg & Rankin (2014) defined it as a mindset of caring for others and asking for help for others from the management. This mindset helps the information flow between team members and strengthens cooperation and teamwork (Meneghel, Salanova, et al., 2016). When teams are motivated and positive about the future and confident about their performance, they will more probably help co-workers if they are struggling (Meneghel, Salanova, et al., 2016). The Morgan et al. (2013) study identified, that team resilience was influenced by the team members perception of the team’s ability to provide help and encouragement if needed, rather than focusing only on personal responsibilities. Successful adaptation was composed of managing change, gaining experience of challenging situations, and flexibility (Morgan et al., 2013).

In the Dove-Steinkamp (2017) research, the group evaluated its position, choices, and opportunities and were able to pursue the initial goals by adapting their operations. Gomes et al. (2014) noted that when adaptation was needed, the emergency response team immediately gathered experts to determine the necessary actions. Dove describes a situation where an individual team member is having personal challenges and the team decides to reduce the workload temporarily by proposing other team members to take on the individuals responsibilities (Dove-Steinkamp, 2017). Additionally, the team might also adapt by altering the original goal to better suit the new situation or alter the viewpoint from a narrow-focused view to a broad perspective to find a more motivating goal to follow. Furthermore, peer support is important when adapting: “If you don’t have confidence in yourself to bounce back, then you are not going to bounce back. But if you have a person next to you who can help you to bounce back, who has a positive mindset and can
help you, then it will be easier” (Dove-Steinkamp, 2017, p.128). Furthermore, team members can discuss their collective situation together, find ways to “embrace the suck” and rationalize the adversity (Dove-Steinkamp, 2017, p.127).

6.2.1.5 LEARNING
Teams should be seen participating in a constant learning process (Ilgen et al., 2005). Active learning and learning from mistakes is an important part of team resilience (Weick & Sutcliffe, 2001). Bennett et al. (2010), Sutcliffe & Vogus (2003) and West et al. (2009) emphasise the importance of seeing challenges as learning opportunities instead of setbacks. Developing the knowhow for successes helps the team to function under pressure (Alliger et al., 2015; Gomes et al., 2014; Morgan et al., 2015; Stevens et al., 2015; Van Der Beek & Schraagen, 2015) and helps to avoid obsessing about failure (Weick & Sutcliffe, 2001). Additionally, learning from mistakes increased the probability of succeeding better the next time a stressful event occurred, while lack of it reduced the chances of success (Alliger et al., 2015; Carmeli et al., 2013). Additionally, success boosted team confidence and the learnings from the negative experiences made the faith for success stronger (Morgan et al., 2015). Designing an iterative cycle of learning and adaptation allows the team to recognise possible adversity faster, making them more prepared to deal with the circumstances (Alliger et al., 2015).

Since team resilience is a collective phenomenon, it could be beneficial for team members to discuss their collective experiences together (Morgan et al., 2013). Identifying “warning signs” of stressors and learning from mistakes could make the teams better prepared for the future (Alliger et al., 2015; Van Der Beek & Schraagen, 2015). The Morgan et al. narrative inquiry revealed that resilient groups concentrated on development (2013), learning from collective experiences during adversity, and applying the knowledge in the future (Morgan et al., 2015). This might reduce the fear for mistakes and encourage to find innovative ways to tackle challenges. Shared understanding of what worked and what didn’t during the challenge may boost the teams confidence in future challenges (Blatt, 2009; Sutcliffe & Vogus, 2003).

Learning is essential for team resilience and provides a resource bank of tools that help when facing adversity (Lengnick-Hall, Beck, & Lengnick-Hall, 2011). Successful resilient teams were able to identify particular information from certain incidents and apply them in the challenging situation at hand (Morgan et al., 2015). The Dove-Steinkamp (2017) research recognised that participants were not fit to tackle future challenges if their resources were not restored first. This was partly accomplished by reflecting on past experiences and analysing the experiences together to learn and apply the lessons learned to new challenges (Dove-Steinkamp, 2017). Furthermore, accepting failure as a chance to learn can be beneficial for the team “Sometimes it is good to let someone fail a little bit because if someone is always jumping in too soon then they may not really feel like they failed. They may just feel like, ‘Oh, this is a team effort’” (Dove-Steinkamp, 2017, p.132).

6.2.1.6 DEBRIEFING
Debriefing is an important part of learning from mistakes as it defines a strategy for forthcoming adversity (Alliger et al., 2015). During debriefing the group can share their learning and insights that might otherwise be lost. Additionally contemplating on the best possible outcomes improves team resilience during upcoming challenges, while failing to do so might make teams weaker (Alliger et al., 2015; Gomes et al., 2014; Stevens et al., 2015). Similar results were identified by Carmeli et al. (2013) in their top management research where the process of making decisions in the team correlate with their two-dimensional model “resilience-efficacious beliefs and resilience-adaptive capacity”. Emergency response teams work in a very dynamic environment and Gomes et al. (2014) noted in their study that briefing and debriefing was used at all times to promote collective awareness of the situation and predictability of colleagues’ actions. Kennedy et al. (2016) suggest, that debriefing is especially important when team ownership increases. Being able to give and receive constructive feedback promotes the collective will to work for the benefit of the team during challenges (Morgan et al., 2015).

6.2.1.7 COMMUNICATION PROCESSES
Communication also plays a big part in building team resilience (Gomes et al., 2014). Without resilience, members of the teams can disconnect and start focusing more on individual needs, weakening the dynamics, coordination and performance of the team (Alliger et al., 2015). This might lead to less open communication inside the team, thus weakening performance. Teams that have resilience can maximize their resources, function under pressure, recover from adversity, or even bounce forward by utilizing collective sharing of knowledge (Alliger et al., 2015). Communication is an important input as well as a very important process. The quality of communication and information exchanged is elevated by team resilience as well as quality of social interaction within the team (Sutcliffe & Vogus, 2003). Interaction processes between team members can help to share information as well as learn and adapt easier to new challenges (Stephens et al., 2013). When the benefits of these interactions are clear to the team, also team resilience increases (Carmeli et al., 2013). Alliger et al. (2015) research noted that teams with resilience were able to identify signs of threatening situations and prepare for “what-if” and “heads-up” discussions where worries were addressed properly. The whole team can provide support by communicating actively across their networks and organisational hierarchy before and during adversity (Alliger et al., 2015). Additionally, communication can support interactions and trust by boosting collaboration and improving strategic decision making (Lengnick-Hall et al., 2011; Rahimnia et al., 2014). Meneghel, Martínez, et al. (2016) suggested that direct, rational, and objective communication was important in order to demonstrate new employees the organisational culture and values. The Morgan et al. study identified that open, honest, and positive verbal communication that happens frequently was important (2013). Communication also influences how instructions and goals are understood and the quality of the exchange ensures all team members are on the same page (DoveSteinkamp, 2017). Communication is made out of “the source, quality, timing, and framing of a directive” and is essential for all teams because “when communication breaks down and people stop communicating, it can turn into a bad
situation because somebody got so task saturated and so focused on clearing a mountain peak that they didn’t notice they weren’t going to make it” (Dove-Steinkamp, 2017, p.123).

6.2.2 Emergent States
Bowers et al. (2017) analysed team resilience research through the IMOI model and concluded that emergent states in resilient teams mediate the commitment to the team and enable flexible ways of approaching challenges. Collective trust in teams’ ability to solve challenges and the ability to design common principles of behaviour for the team together with shared mental models and the familiarity between the team members all work as emerging states of team resilience. The Carmeli et al. (2013) research emphasised connectivity while Meneghel, Salanova, et al. (2016) and West et al. (2009) stressed positive emotions and Stephens et al. (2013) emotional carrying capacity as the key forces of enabling team resilience. Blatt (2009) and Lengnick-Hall et al. (2011) underline trust, collective efficacy and cohesion as well as attentive relationships, teamwork and structure and resourcefulness.

6.2.2.1 Transactive Memory
Transactive memory is “a combination of the knowledge possessed by each individual and a collective awareness of who knows what” (Austin, 2003, p.866). Transactive memory allows team members to collectively understand the knowledge pool of the team (Ilgen et al., 2005) and the worries, powers and desires of team members communicated in an implicit or explicit way (Druskat & Kayes, 2000). Transactive memory can be further divided into expectations about team behaviour and knowledge about what members know (Hyatt & Ruddy, 1997). Furniss et al. (2011) describe a resilient repertoire that consists of the skillset, strategy, and capabilities that the team uses to address the challenge. The sharing of knowledge about risky or close by episodes by the emergency response teams maintained the transactive memory of the team and boosted team resilience (Gomes et al., 2014). The Morgan et al. (2015) study noted that transactive memory facilitates the collective knowledge of the team and the skills to apply this knowledge in the best way in a challenging situation. Additionally, collective understanding and trust of the teams skills might increase team members’ ability to notice threats in advance (Sutcliffe & Vogus, 2003).

6.2.2.2 Shared Mental Models
Shared mental models are “organized understanding of relevant knowledge that is shared by team members” (Mohammed & Dumville, 2001, p.89). Additionally they underline the “collective knowledge regarding what individual team members hold in common” (Ilgen et al., 2005, p.525). The Morgan et al. (2015) study underlined the importance of supporting the collective emotional processes in teams. Their study revealed that “psychosocial processes” enable team members to understand each other better and to work more cohesively during adversity. These processes boost collective information sharing, learning, and adaptation when facing challenges (Stephens et al., 2013). The Blatt (2009) research about entrepreneurial teams revealed that personal relationships between team
members were more important beyond the benefit they provided for the task at hand. Cherishing relationships, team spirit, and establishing processes that support transparency in all cooperation support the teams creativity in adapting to adversity (Blatt, 2009).

6.2.2.3 COLLECTIVE EFFICACY
Many studies (Edson, 2012; Morgan et al., 2013; Rodríguez-Sánchez & Perea, 2015; Sharma & Sharma, 2016; Sutcliffe & Vogus, 2003; Vera et al., 2017; West et al., 2009) noted the importance of collective efficacy for team resilience. Collective efficacy is the teams collective belief in managing challenging situations (Bandura, 1997). The teams that are able maintain that trust during the challenge are more likely to conquer it (Bandura, 1997). Teams that have collective efficacy have confidence to face challenges and resist unexpected situations (Sutcliffe & Vogus, 2003). The Sutcliffe & Vogus (2003) study noted that when crew members didn’t trust their leader and question what was happening or understand how the situation was unfolding, lives were lost. The Vera et al. (2017) study discovered that resources available to the team, such as collective efficacy, transformational leadership, teamwork, and positive organisational practises were related to team resilience. They argue, that collective efficacy boosts the teams confidence about their capabilities and resources to face challenges, making them feel like they can overcome any adversity, consequently boosting team resilience. Morgan et al. (2013) noted that collective efficacy consists of social persuasion skills, past mastery experiences and group cohesion.

In their study about elite sport teams Morgan et al. were able to identify important aspects of group cohesion. If the team was coherent they had a fighting spirit in situations with adversity, they wanted to work together to endure the challenge and commit to the team while sustaining the team motivation (Morgan et al., 2013). Additionally, Morgan et al. also noted that teams with resilience felt adversity had boosted their collective efficacy and were able to trust their team: “I realized that it was because I trusted the people that I was with that if something was to happen, they had my back. Not me looking over my shoulder every three seconds and stuff like that. It’s what I would see into it” (Morgan et al., 2013, p.136). Similarly, team cohesion made the team to want to “fight for each other” and social persuasion boosted resilience in the form of supportive feedback after adversity (Morgan et al., 2013).

6.2.2.4 INTERPERSONAL TRUST
Interpersonal trust is faith between group members that they will be compassionate and act in a morally reasonable way (Bowes et al., 2017). Bonds between team members and openness aid in developing resilience. This creates an atmosphere where it is encouraging to learn from mistakes and develop new strategies that will work in a better way when facing adversity in the future (Carmeli et al., 2013; Morgan et al., 2015). Expressing emotions and appreciation openly in the team (Alliger et al., 2015; Stephens et al., 2013), the quality of relationships and bonds inside the team (Carmeli et al., 2013), community loyalty (Alliger et al., 2015; Meneghel, Martínez, et al., 2016), and especially by developing collective guarding elements, teams are able to protect themselves from adversity (Carmeli et al., 2013). Team engagement, connection, and collective liable consciousness to improve the team performance are all factors that
boost team resilience (Amaral et al., 2015). These actions further encourage cooperation and build trust internally and externally (Alliger et al., 2015). In addition, the Morgan et al. (2015) study underlined the importance of supporting the collective emotional processes in teams. Mutual goals, interpersonal relationships and cooperation boost team membership which works as a buffer against challenges (Vera et al., 2017).

6.2.2.5 POSITIVE EMOTIONS, PSYCHOLOGICAL SAFETY, AND THE ABILITY TO SPEAK UP

Resilient teams focus on the future with a positive mindset (Morgan et al., 2015). Addressing and debriefing challenges with humour can shield the team from the stress, such as the England team did in the Morgan et al. (2015) study. Team rituals, such as sledging, banter and celebrating resilient moments could help concretize successes and failures (Morgan et al., 2015) as well as encourage positive thinking and find positive sides to adverse events (Meneghel, Salanova, et al., 2016).

The Meneghel, Salanova, et al. (2016) study discussed the emotional processes in teams. Their study revealed that there is a connection between resilience in groups, their performance and shared positive emotions. Team resilience was positively related to collective positive emotions such as optimism, enthusiasm, and satisfaction (Meneghel, Salanova, et al., 2016) and to roles inside and outside the team (Stevens et al., 2011). By strengthening successes, group attachment and image, team resilience could be improved. “Positive emotion strategies” boost spaces for social interaction, build gratification and oversee lack of resources (Alliger et al., 2015; Morgan et al., 2017). Positive emotions encourage teams to think outside the box and try out new things as well as to see challenges in a positive way (Meneghel, Salanova, et al., 2016). Furthermore, teams with collective positive emotions deal with challenges more effectively, conquer adversity, and see the outcome in a positive light (Meneghel, Salanova, et al., 2016). Additionally, teams with a positive emotional mindset might find it easier to discuss problems (Stephens et al., 2013).

Psychological safety is “a shared belief that the team is safe for interpersonal risk taking” (Edmondson, 1999, p.354). The Morgan et al. (2013) study noted the importance of being able to challenge group norms during challenges. Expressing positive and negative emotions in the team is beneficial if they are expressed in a constructive way (Stephens et al., 2013). Mutually accepting emotions might make the team more alert to the individual needs of team members (Stephens et al., 2013), but it will require accountability for personal thoughts and actions (Morgan et al., 2013). Expressing negative emotions might help the team to review the let downs and tensions the challenges have produced, additionally constructive emotional openness prevents conflicts and supports resourcefulness during adversity (Stephens et al., 2013). Furthermore, the Dove-Steinkamp (2017) study noted that negative emotions were contagious and spread quickly through the team if not addressed properly.
6.3 TEAM RESILIENCE OUTCOMES

The literature review manifested quite a few examples of how team resilience improves either performance or skills of the team, especially when facing adversity. Team resilience research has mainly focused on the antecedents of resilience (Gomes et al., 2014; Lundberg & Rankin, 2014; Stephens, Heaphy, Carmeli, Gretchen, et al., 2013). Some research also address the outcomes of resilient teams. West et al. (2009) concluded that team cohesion, cooperation, and coordination was improved. Stevens et al. (2015) noticed that submarine teams with greater resilience were less affected by routine and adversity. Bowers et al. (2017) describe outcomes of team resilience as maintaining the performance of the team, decreasing failures and as a collective commitment of the members of the team to the team. Carmeli et al. (2013) contemplate that team resilience is important because readiness for challenges improves, increasing the durability and security of organisational growth.

Dove-Steinkamp (2017) defines team performance as the outcome of collective efforts that are influenced by internal and external factors. Participants in Dove-Steinkamp's (2017) study named effectiveness, efficiency, improvement, readiness, safety, satisfaction, and unity as important outcomes. Resilient teams feel empowered by their future prospects and can develop creative ways to work and utilize untapped resources to react to adversity (Sutcliffe & Christianson, 2012). Furthermore, existing resources can be linked, merged or modified to better suit unexpected situations (Sutcliffe & Christianson, 2012). Also Meneghel, Martínez, et al. (2016) and Meneghel, Salanova, et al. (2016) research demonstrated a positive relationship between team performance and team resilience when combined with positive emotions. Better performance is acquired through higher team resilience, because it allows teams to innovatively look for novel solutions and more agile approaches with adversity as well as see challenges as opportunities instead of setbacks (Carmeli et al., 2013). Therefore, teams that view challenges as opportunities are likely to be less affected by adversity, thus improving their performance (West et al., 2009).
7 SUMMARY OF RESULTS

According to Torraco (2016), authors should present a visual depiction of the review to improve the readers’ comprehension of the topic and the overall structure of the review. Based on the inputs, mediators, and outputs of team resilience literature review and the historical perspectives, a concept map of team resilience is formulated (Figure 5).

Teams are affected by internal and external factors that nudge the inputs and are further converted into outputs. Examples of internal factors are team cohesion, positive organisational culture, and shared mental models. External factors that influence teams are team members’ family or community and personal resources. Inputs enabling team resilience were trust, transformational and shared leadership and team structure. Team structure included team norms, team diversity, strategy, physical environment, and training.
Inputs are converted into outputs by various processes such as leadership and communication processes; planning; bonding; adapting; learning and debriefing. These processes are mediated by shared mental models, transactive memory, interpersonal trust, positive emotions, psychological safety, and the ability to speak up.

Adversities causing stress within team can be acute or chronic and affect the team from inside or outside. Such challenges are, for example: adverse weather, ambiguity of direction/goals, ambiguous team roles, irate customers, change in work related tasks, changes in team membership, colleagues’ illness, conflict with people outside the team, or conflicting interest between external requirements and the internal resources. Teams with resilience might possess resources and qualities such as collective efficacy, transformational leadership, team cohesion, and adaptation skills.

Outcomes for successful teams might be an increase in their performance or the development of new skills such as: development of creative ways to work and utilize untapped resources when responding to adversity, improved skills to link, merge or modify existing resources to better suit the unexpected situation, and empowerment of teams about their options of the future. If the actions taken by the team do not produce the desired result, it is important that teams learn from their mistakes and look for new ways to intervene in their processes before challenges occur.

Resilience has been seen to protect teams from adversity by withstanding (Morgan et al., 2013), resisting (Amaral et al., 2015), and overcoming (Alliger et al., 2015; Rodríguez-Sánchez & Perea, 2015) stressors. This view is taken further by (Maguire & Cartwright, 2008) noting that people affected by the change do not bounce back to the former normal state, but instead innovate for a new “form of normality” (Juen & Siller, 2013). Adapting to adversity might therefore result in a positive improvement of processes for the team (Kennedy et al., 2016; Maynard & Kennedy, 2016). Luthans & Youssef (2004, p.156) have stated that rather than being a rare capacity, a genetic trait, or a passive adjustment process, resilience is a lifelong developing process that evolves during all daily activities. Additionally, team resilience can be reinforced (Lengnick-Hall et al., 2011; Pollock, Paton, Smith, & Violanti, 2003) and should not be seen as an individual personality trait only, but instead as a dynamic process, where learning occurs. Furthermore, team resilience constantly evolves and re-invents itself in relation to the environment and circumstances. Therefore, team resilience is conceptualized in this thesis as a multifaceted dynamic process that impacts and is influenced by many internal and external team variables and helps teams to manage and learn from adversity.
8 ACTIONS OF RESILIENT TEAMS

The previous Input-Mediator-Output-Input (IMOI) framework revealed that team resilience should be seen as a multifaceted dynamic process that impacts and is influenced by many internal and external team variables. The inputs and mediators should enable factors for team resilience formation. As defined earlier, a team is a group of people purposefully working together for a shared goal (Dove-Steinkamp, 2017). Therefore, also team resilience can be said to be objective and goal-oriented behaviour that can be designed, trained, and improved. The current team resilience research has not clearly addressed or proposed many examples of this multifaceted dynamic process. What is it that resilient teams do? This section aims to analyse and synthesise existing knowledge and propose a model for team resilience actions as well as the factors that influence those actions by further analysing the results of the IMOI framework and comparing the results in more detail with the three existing processes proposed by Alliger et al. (2015), Dove-Steinkamp (2017) and Morgan et al. (2013, 2015).

Alliger et al. (2015) describe that “teams that are highly resilient resolve challenges as effectively as possible, maintain their team health and resources, recover quickly, and show ongoing viability or the ability to handle future challenges as a team”, (p. 178). They have developed a set of actions that take place before (i.e. minimize), during (i.e. manage) and after (i.e. mend) an adversity. If managed and supported in the right way this model can turn into an iterative cycle that supports itself, while failing to do so, it might result in the opposite (Alliger et al., 2015).

The Dove-Steinkamp (2017) research proposes a five-step iterative process for managing disruption. The five key steps are “specification, mobilization, detection, determination and reset” (Dove-Steinkamp, 2017, p.145). Instead of a linear model, teams might bounce back and forward between the phases, or go through several phases at the same time in an iterative manner (Dove-Steinkamp, 2017).

The Morgan et al. (2013, 2015) research has explicitly described team resilience as a process. By focus group interviews and narrative inquiry, they explored elite sport teams and conceptualised team resilience as “a dynamic, psychosocial process which protects a groups of individuals from the potential negative effect of stressors they collectively encounter” (2013, p.567). The Morgan et al. (2015) research suggests that resilience in sport teams consists of five “psychosocial processes”: transformational leadership, shared team leadership, team learning, social identity, and positive emotions. Team resilience has a dynamic structure and these processes can vary over time by the influence of the team environment (Morgan et al., 2015).

The Input-Mediator-Output-Input (IMOI) framework revealed several enabling factors of team resilience. Similar influential factors were also discussed by Morgan et al. (2013) and also identified by Dove-Steinkamp (2017) in her theory. Morgan et al. (2013) conducted a focus group study on elite sport teams and suggested that team resilience consists of four protective characteristics: group structure
(i.e., team norms, communication channels), mastery approaches (i.e., learning, planning and managing change), social capital (i.e., group identity, interaction quality and social support), and collective efficacy (i.e., belief from past successes, group cohesion and social persuasion). In addition to these, 10 subdimensions were identified: team learning orientation, team flexibility, network ties, shared language, team composition, task design, group norms, perceived efficacy of team members, and perceived efficacy for collective team action (Morgan et al., 2013). Summary of the existing process descriptions together with the IMOI framework analysis are presented in Appendix 3.

8.1 TEAM RESILIENCE ACTION MODEL (TRAM)

![Figure 6. Team Resilience Action Model (TRAM)](image-url)
Following the reasoning of Alliger et al. (2015), Dove-Steinkamp (2017), Morgan et al. (2013, 2015), team resilience should therefore not only help teams to recover, but enable teams to learn from past events and to form strategies for the future, so that they can bounce back stronger than before by providing tools to anticipate coming adversities. Additionally, resilience should produce proactive and reactive measures for coping with adversity (Youssef & Luthans, 2007). Reactive action enables the recovery and proactive action promotes learning and growth as a result of a challenging event (Youssef & Luthans, 2007). Furthermore, a successful team resilience process consists of three phases. Firstly, anticipating and preparing for possible threats, secondly by dealing with the situation as effectively as possible and finally by learning from the situation, picking up the pieces and moving on. The Team Resilience Action Model (TRAM) presents team resilience as purpose driven behaviour that can be influenced, trained, and developed. This model recognises team resilience as a threefold dynamic process which is influenced by several different factors in each phase. TRAM consists of three different phases: 1. Anticipate 2. Action 3. Attain and multiple influencing factors. The proactive actions of the first Anticipate phase of TRAM include minimizing possible future threats as well as maximizing emotional and physical response capacity and planning. The reactive actions of the second Action phase of TRAM include recognising threats, reacting effectively, minimizing impact, and safeguarding stamina. The final Attain phase consists of restoring actions, reflecting, learning, and regaining the situation. Furthermore, different factors influence each phase and action such as team structure, norms, values, organisational resources, and support, as well as shared mental models, transactive memory, team diversity, strategy, physical environment, and training and perceived social support and transformational leadership. As team resilience should be viewed as a non-linear process where teams might bounce back and forward between the phases or go through several phases at the same time (Dove-Steinkamp, 2017), the Team Resilience Action Model (TRAM) is presented in an iterative cyclic manner in Figure 6.

As the complexity of the team environment increases with the technological, demographic, and socioeconomic transformation, it is probable that teams have multiple simultaneous projects at the same time with multiple concurrent teams. Therefore, different phases of the Team Resilience Action Model can happen simultaneously or require revisiting previous phases for a better approach. Additionally, it should be noted that different influencing factors can be more important, depending on the maturity of the team. Morgan et al. (2015) noted, that transformational leadership was especially important with new teams and shared team leadership was more effective with more mature teams. Furthermore, team resilience action can also have negative side effects (Dove-Steinkamp, 2017) thus reducing the teams resilience. The Team Resilience action model should be therefore placed in a time context. This is illustrated in Figure 7.
Figure 7. Team Resilience Action Model (TRAM) (in time context)
8.1.1 Anticipate

The precautionary and preventive proactive actions of the Anticipate phase of TRAM include actions for minimizing possible future threats, maximizing emotional and physical response capacity and planning for the future. The Alliger et al. (2015) research describes the importance of planning for challenges beforehand, thus reducing and minimizing possible failures and growing awareness of team capabilities and resources while watching out for early warning signs and preparing to handle stressors. Additionally, understanding and accepting shared goals and directives, sharing and framing content as well as assessing the risks and forecasting disruptors and prioritizing the most urgent challenges is important (Dove-Steinkamp, 2017). The Anticipate phase also includes contingency planning and resource specification such as internal and external available personnel, tools, knowledge, and skills, as described in the mobilization phase by Dove-Steinkamp (2017).

8.1.1.1 Prior Influencing Factors of the Anticipate Phase

The Anticipate phase is influenced by several factors prior to and during the actions. The IMOI framework analysis suggested that there are necessary inputs prior to the proactive actions needed for the Anticipate phase. The most important ones identified were trust, transformational and shared leadership, and team structure. Team structure included group norms, team diversity, strategy, physical environment, and training. These areas were supported by Morgan et al. (2013), who nominated protective factors such as formal structure, perceived social support and group norms and values and Dove-Steinkamp (2017) who suggest that shared leadership, a sense of purpose, communication and self-awareness support this phase. These prior influencing factors are important because, they form a solid foundation for the team to build their resilience on and should be seen as enabling conditions for the formation of team resilience.

An important foundation for this precautionary and preventive work for anticipating challenges is trust, which is composed of the collective beliefs about the effectiveness of team members and the collective beliefs of safety in taking risks (Ilgen et al., 2005). Trust is shaped by previous experiences values, attitudes, moods, and emotions and it has a positive effect on interpersonal cooperation and teamwork (Jones & George, 1998). Furthermore, teams that are able to maintain mutual trust during challenges are more likely to defeat it (Bandura, 1997).

Team structure, norms, and values support the anticipate phase by establishing a routine accepted manner of conduction during adversity, reflecting on a shared vision during adversity, and the groups liability during difficult times (Morgan et al., 2013). Diverse teams are able to address challenges more successfully with more confidence (Bennett et al., 2010; Gomes et al., 2014; West et al., 2009). Diversity broadens the groups’ knowledge base and can help in looking for ideal solutions, and to sense and adjust complexity and handle the specific aspects in challenging situations (Sutcliffe & Vogus, 2003; Weick & Quinn, 1999). Additionally, the support structures organisations can provide are very important influencing factors. Positive organisational climate, available resources,
training, leadership, and reward systems all contribute to team resilience in a positive way (Van Der Beek & Schraagen, 2015). Furthermore, maintaining the allocation of resources during adversity, identifying the essential personnel, supplies, information, and talent available to the team or to accomplish given tasks boosts team resilience (Dove-Steinkamp, 2017).

Mutual training sessions support the formation of team awareness; individual roles and strengths as well as teams’ collective capabilities (Dove-Steinkamp, 2017). Furthermore, deep emotional bonds, loyalty between team members, trust and respect when facing adversity, and friendship beyond team boundaries gave emotional and tangible support to team members (Morgan et al., 2015).

8.1.1.2 MAIN INFLUENCING FACTORS OF THE ANTICIPATE PHASE
Several factors influence during the Anticipate phase. Most important influencing processes for proactive situation management identified by the IMOI framework for the Anticipate phase, were planning, leadership and communication processes and collective efficacy. Effective behavioural responses, such as refusal to give up, preparing to withstand stressors, not dwelling on setbacks, and open and effective communication channels were also important (Morgan et al., 2013). Communication supports the interactions and trust by boosting collaboration and improving strategic decision making (Lengnick-Hall et al., 2011; Rahimnia et al., 2014). Additionally, communication also influences how instructions and goals are understood and the quality of the exchange ensures all team members are on the same page (Dove-Steinkamp, 2017).

Shared mental models and transactive memory are also important influencers for the Anticipate phase. They underline the “collective knowledge regarding what individual team members hold in common” (Ilgen et al., 2005, p.525) and allow team members to collectively understand the knowledge pool of the team (Ilgen et al., 2005). Vera et al. (2017) argue that collective efficacy boosts the teams confidence about their capabilities and resources to face challenges, making them feel like they can overcome any adversity, consequently boosting team resilience.

Planning ahead is important because team resilience is developed by forming coordinated supportive systems that help during adversity (Rodríguez-Sánchez & Perea, 2015). The more broad and team member-inclusive the plan was and the better every team member’s knowledge could be used to tackle the situation, the better prepared the team was for the unexpected adversity and their resilience would be high (Morgan et al., 2015).

Both Dove-Steinkamp (2017) and Morgan et al. (2015) acknowledge the importance of shared team leadership and group decision making. When facing challenges, team coordination was enhanced with a shared leadership model by “promoting greater implementation of roles and responsibilities for team members’ performance” (p.97). Additionally, team members positively influenced each other and adjusted their efforts with the shared leadership model. Morgan et al. (2015) noted, that transformational leadership enhances leader-follower relationship and aims to produce a climate where everyone can achieve their best potential while believing
in a mutual shared goal. Transformational leaders enable teams to be “more confident in their ability to deal with failure ... [and] encourage [them] to take risks and to pursue innovative and creative activities” (p.97). Transformational leadership was especially important with new teams and shared team leadership was more effective with more mature teams (Morgan et al., 2015).

8.1.2 Action
The actions in the TRAM Action phase include reactive actions to the current situation. These include recognising threats, reacting effectively, minimizing impact, and safeguarding stamina. Challenges should be evaluated swiftly and precisely, while chronic stressors are identified and help and support is provided to those in need whilst keeping up the necessary processes and asking for guidance if necessary (Alliger et al., 2015). Dove-Steinkamp (2017) underlines the importance of monitoring for disruptor cues and recognising disruptors as well as evaluating actions taken in the previous stages deliberating whether to take action or not or to correct existing action (Dove-Steinkamp, 2017). Adjustments to actions might be single or multiple and usually pointed towards team member roles or modifying the goals, refocusing, asking for support from team members, or collectively trying to find the best solution to a challenge (Dove-Steinkamp, 2017).

8.1.2.1 Main Influencing Factors of the Action Phase
Several factors influence the reactive work of the Action phase. Most important influencing processes identified by the IMOI framework seem to be leadership and communication processes as discussed in the previous chapter. When reactively dealing with a challenge, the importance of these processes increases. The processes are supported and mediated by the emergent states, such as interpersonal trust, positive emotions, psychological safety, and the ability to speak up. Morgan et al. (2013) identified managing change, adaptability, prosocial interactions, group cohesion, and past mastery experiences as the key influencers as well as positive emotions (Morgan et al., 2015).

Positive emotions encourage teams to think outside the box and try out new things, as well as to see challenges in a positive way (Meneghel, Salanova, et al., 2016). Furthermore, teams with collective positive emotions deal with challenges more effectively, conquer adversity and see the outcome in a positive light (Meneghel, Salanova, et al., 2016). Vigour and joy during adversity might help the team to overcome it better and absorb the negative effects of stressors. Additionally, positive emotions build “affect” (Dove-Steinkamp, 2017) and “a durable psychosocial emotional space conducive for team resilience” (Morgan et al., 2015, p.98).

The Morgan et al. (2013) study noted the importance of being able to challenge the group norms during challenges. Psychological safety ensures “a shared belief that the team is safe for interpersonal risk taking” (Edmondson, 1999, p.354). Expressing positive and negative emotions constructively and mutually accepting emotions might make the team more alert to the individual needs of team members (Stephens et al., 2013). Additionally, interpersonal trust emerges when team feels that their competence matches the
challenge (Ilgen et al., 2005). Trust is shaped by previous experiences values, attitudes, moods and emotions and it has a positive effect on interpersonal cooperation and teamwork (Jones & George, 1998).

Reactively responding to challenges also requires change management skills, adaptability, and flexibility as well as applying learnings from previous challenges and gaining belief from past successes (Morgan et al., 2013). It also requires prosocial interactions that are supported by positive interactions between team members, a culture where failures do not cause blaming and reciprocate helping of others during challenges (Morgan et al., 2013). Additionally, group cohesion boosted a fighting spirit in situations with adversity, making the team more committed to work together to endure the challenge and commit to the team while sustaining the team’s motivation (Morgan et al., 2013).

8.1.3 ATTAIN

The actions of the final phase of TRAM include restoring actions of reflecting, learning, and regaining the situation. Analysing the current situation, debriefing, addressing any issues that arose from the adversity, and articulating gratitude towards team members is important for this phase (Alliger et al., 2015). The resources are restored by giving and receiving feedback, boosting group identity, cohesion, and bonding (Dove-Steinkamp, 2017). Teams should reflect and learn from the experience they encountered and apply the lessons learned for the future (Dove-Steinkamp, 2017).

8.1.3.1 MAIN INFLUENCING FACTORS OF THE ATTAIN PHASE

Several factors influence the mending and restoring work of the Attain phase. The most important processes identified by the IMOI framework were adapting, bonding, learning, and debriefing. Morgan et al. (2013) identified learning, resetting, and reinforcing, as well as social persuasion and group identity as the key influencers. Additionally, management availability, willingness to accept feedback, shared experiences, and team unity support effective reflective and restoring practises (Dove-Steinkamp, 2017).

Social identity is important for teams because it supports mutual emotional bonds between team members and “strong emotional attachments” when facing challenges (p.98). Social identity boosts mutual decisions to fight back during adversity with aligned thoughts and actions (Morgan et al., 2015). Bonding is seen as the collective feeling of the team toward each other (Ilgen et al., 2005). Deep emotional bonds, loyalty between team members, trust and respect when facing adversity, and friendship beyond team boundaries gave emotional and tangible support to team members (Morgan et al., 2015). Additionally, emotional bonding creates an atmosphere where it is encouraging to learn from mistakes and develop new strategies that will work in a better way when facing adversity in the future (Carmeli et al., 2013; Morgan et al., 2015). Deep emotional bonds also help when adapting is needed for instance in a situation where an individual team member is having personal challenges and the team decides to reduce the workload temporarily by proposing other team members to take on the individuals responsibilities (Dove-Steinkamp, 2017). Adaptation might also be
necessary when a team evaluates its position, choices and opportunities and is able to pursue the initial goals by adapting their operations (Dove-Steinkamp, 2017).

Teams should reflect and learn from the experience they encountered and apply the lessons learned to the future. In the Morgan et al. (2015) study, team learning was described as “filing away the knowledge” to reapply it the next time a challenge was upon the team. Additionally, the mutual experiences and “shared knowledge structures” enabled the team to “harness collective sensemaking” during adversity, (p.97). Learning is essential for team resilience and provides a resource bank of tools that help when facing adversity (Lengnick-Hall et al., 2011). Successful resilient teams were able to identify particular information from certain incidents and apply them for the challenging situation at hand (Morgan et al., 2015). During debriefing the group can share their learning and insights that might otherwise be lost. Additionally, contemplating on the best possible outcomes and persuading team members with contradicting beliefs improves team resilience during upcoming challenges, while failing to do so might make teams weaker (Alliger et al., 2015; Gomes et al., 2014; Stevens et al., 2015)

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9 DISCUSSION

The literature review revealed that team resilience is a collective experience and understanding how teams collectively deal with challenges is important. A group of individuals with resilience might not make a resilient team (Alliger et al., 2015; Morgan et al., 2017) and the sum of resilient individuals can also be greater than their individual resilience alone (Decroos et al., 2017). The literature review looked at the current team resilience research through the Input-Mediator-Output-Input (IMOI) framework. The most important inputs were trust, transformational and shared leadership, and team structure. Team structure included team diversity, strategy, physical environment, and training. Most important processes identified by the literature review were planning, leadership and communication processes, adapting, bonding, learning, and debriefing. Emergent states described in the team resilience literature were shared mental models, transactive memory, collective efficacy, interpersonal trust, positive emotions, psychological safety, and the ability to speak up. Outcomes were not discussed to same extent in the literature, but many studies emphasised the improvement in performance, effectiveness, satisfaction, unity, or skills of the team.

Team resilience is an important construct in theory as well as in practice. Yet, existing applications are not sufficient in capturing the dimensions of the process. Due to a lack of cogent definition, also research findings are contradicting and inconclusive. Additionally, adversity is often measured or observed in a single or couple of instances, not taking onto account that team resilience is not static over time (Morgan et al., 2015), and is constantly affected by the internal and external environment (Dove-Steinkamp, 2017). Furthermore, proposing a configuration of actions that resilient teams take to manage adversity remains to be undemonstrated. Therefore, understanding the whole multidimensional process of team resilience and the factors that influence the process at each phase is important. The proposed Team Resilience Action Model (TRAM) aims to address these shortcomings. The TRAM presents team resilience as purpose driven behaviour that can be influenced, trained, and developed. This model recognises team resilience as a dynamic process that is influenced by several different factors at each phase. TRAM consists of three different phases: Anticipate-Action-Attain and multiple influencing factors. The actions of the first Anticipate phase of TRAM include minimizing possible future threats, maximizing emotional and physical response capacity, and planning. The actions of the second Action phase of TRAM include recognising threats, reacting effectively, minimizing impact, and safeguarding stamina. The final Attain phase consist of restoring actions, reflecting, learning, and regaining the situation. Additionally, different factors influence each phase such as team structure, norms, values, organisational resources, and support. Shared mental models, transactive memory, team diversity, strategy, physical environment, and training as well as perceived social support and transformational leadership.

9.1 THEORETICAL CONTRIBUTIONS

This thesis provides a foundation for team resilience research by applying an Input-Mediator-Output (IMOI) framework to team resilience research and creating a better understanding of the different elements affecting team resilience. Teams that want to be
resilient should ensure stable inputs and fluent supportive processes to achieve favourable outcomes. All teams face adversity, but organizations can safeguard its teams by providing resources, tools and processes that can help the teams to overcome and deal with the hardship. Organisations have a significant part in boosting resilience in teams by supporting these resources and increasing performance during crisis (Vera et al., 2017). Teamwork should be facilitated in training and work-family-life balance should be supported in the organisations (Rodríguez-Sánchez & Perea, 2015). Additionally, team resilience is connected to the resources available to the team and is dependent on collective efficacy, transformational leadership, teamwork and positive organizational practices (Vera et al., 2017).

Transformational leadership processes and shared leadership help with creating collective responsibility and mutual sensemaking (Alliger et al., 2015; Morgan et al., 2015, 2017; Rodríguez-Sánchez & Perea, 2015) and motivate the team to proactively approaching challenges (Rodríguez-Sánchez & Perea, 2015; Van Der Beek & Schraagen, 2015). Additionally, team heterogeneity (Amaral et al., 2015; Gomes et al., 2014), coordination (Gomes et al., 2014; Meneghel, Martínez, et al., 2016), and trust (Alliger et al., 2015; Blatt, 2009; Bowers et al., 2017; Meneghel, Martínez, et al., 2016; Sharma & Sharma, 2016; Stephens, Heaphy, Carmeli, Gretchen, et al., 2013) are important inputs.

Making sure that team members understand the situations in the same way and follow the same psychological processes is also vital to coping with adversity (Morgan et al., 2017). Expressing emotions constructively (Stephens, Heaphy, Carmeli, Spreitzer, et al., 2013), quality of interpersonal relationships (Carmeli et al., 2013), together with bonding and feeling safe with your team members (Alliger et al., 2015; Meneghel, Martínez, et al., 2016) as well as a strong social identity (Morgan et al., 2017; Stephens, Heaphy, Carmeli, Spreitzer, et al., 2013) boost team resilience and affect team performance (Meneghel, Salanova, et al., 2016).

Learning is also an important part of fostering team resilience. Briefing and planning beforehand and debriefing after as well as supporting a common vision of adversity as a challenge instead of a setback all support team resilience (Alliger et al., 2015; Gomes et al., 2014; Morgan et al., 2015; Stevens et al., 2015; Van Der Beek & Schraagen, 2015).

The actions of resilient teams are somewhat overlooked in current team resilience research, thus making it difficult for teams to design interventions or plan coping and training strategies for the future. This thesis synthesises the existing resilient action knowledge, and together with the results from the IMOI framework, proposes a theoretical Team Resilience Action Model (TRAM) that considers the needed action before, during, and after stressful events and the main influencing factors at each stage. Thinking about what resilient teams actually do (Patterson, 2002), provides a viewpoint of resilience as a series of actions or responses that evolve with the situations. When defining resilience as a dynamic process, assumptions can be made about what kind of actions are needed to address challenges and what kind of inputs and mediators influence the team members while reacting to the challenge (Bowers et al., 2017). Conceptualizing team resilience as a multifaceted dynamic process that impacts and is influenced by many internal and external team
variables, also expands the intervention possibilities. As the process of team resilience becomes clearer, also the possible intervention and exposure points, training and guidelines could be designed more accurately for the most risky and most secure stages (Dove-Steinkamp, 2017).

9.2 MANAGERIAL IMPLICATIONS
Reflecting on my experience as a product manager and several discussions with other managers and team leaders, teams usually have quite a good understanding about their functionality and the challenging areas for their team. Many times, however, they know something is not quite right, but pinpointing what it is and when the issue matters the most is difficult. What is lacking is the exhaustive knowledge about managing disruption ahead of time and the issues that influence the team at each stage. The Team Resilience Action Model can provide support for team leaders and managers by providing a comprehensive view of the team resilience process, the actions needed to be taken before, during and after an adversity and shedding light on the influencing factors at each stage.

The TRAM model developed in this thesis could be used to identify team’s properties in need of development, assess the whole lifecycle of the team, and the challenges it could face, as well as to design training interventions for the overall improvement of team resilience. The model could help practitioners proactively address team resilience and the adversity and stress teams might encounter. This process should be viewed as a long-term commitment that needs to be considered in all actions, not just reactively before a challenge. As multiple different events at the same time might have an impact on the team (Alliger et al., 2015), time and team maturity should be taken into consideration when designing interventions. All teams should therefore look at their processes as a whole and identify key areas that seem challenging and need interventions. Improving in one area can influence the whole process and improve team resilience.

Training interventions could also be designed after the necessary areas have been identified. Training would be important for teams collectively, but also for team leaders. Transformational leadership skills and shared leadership have been noted to make a big impact on team resilience. Transformational leadership boosts the relationships between leaders and followers and aims to produce a climate where everyone can achieve their best potential while believing in a mutual shared goal (Morgan et al., 2015).

9.3 LIMITATIONS AND FUTURE RESEARCH
The main limitation of this study is the relatively small sample of team resilience articles. Only 28 papers were identified and only 18 of these contain original empirical research. The study could have benefitted from individual or organisational level resilience analysis or a broader team research perspective. The IMOI framework was a good starting point for looking at team resilience, especially when it is conceptualised as a process. The IMOI provides a natural systems perspective and helps in identifying key areas in a time
sequence. However, its application on teams that don’t have clear boundaries and whose members might work simultaneously in multiple different teams on multiple different projects, producing unmeasurable outputs, is limited.

The proposed Team Resilience Action Model (TRAM) should be tested empirically in a longitudinal study to determine its impact on team resilience and wellbeing. Since clear and precise conceptualisation in general team resilience literature is still missing, this action model provides a general overview of the influencing factors on team resilience and the action needed before, during, and after adversity. This view is not common in the existing team resilience research and could provide interesting angles and insights of team resilience processes. Furthermore, more consideration needs to be given to the possibility that developing, improving, and growing stronger because of adversity also provides opportunities for developing growth strategies prior to adversity when the intervention points have been identified.

As the literature review discovered, multiple conceptualisations still exist about team resilience, and while all of them are equally present, it is difficult to define what is being studied. There is therefore room for a clearer definition of team resilience and a “systems view” of the different conceptualisations that might help in defining their relations, similarities, and differences. Additionally, clearer distinction between adaptation, coping, and team resilience should be established. Especially adaptation has very contradicting research results that suggest adaptation is a part of resilience (Dove-Steinkamp, 2017) or that team resilience is an emergent state and an outcome of adaptation (Kennedy et al., 2016).

Multiple different events at the same time might affect the team (Alliger et al., 2015) and those events might have a different impact depending on the maturity of the team (Kennedy et al., 2016; Morgan et al., 2015), it would be therefore beneficial to study teams over longer periods of time (Dove-Steinkamp, 2017; Kennedy et al., 2016). This is even more important for the future work teams that operate in a very complex system matrix. Team members might work simultaneously in multiple different teams on multiple different projects, producing unmeasurable outputs, with no clear team boundaries. Future teams might consist of members who have worked together a long time before or members who are just there to do a single job. They might work from multiple different cities around the world, only meeting in person occasionally, and leadership can be acquired via a service (LaaS). Team composition might change according to the project stage or requirements, making some individuals work together in an intense manner, while others are only loosely connected to the group. It is therefore quite probable, that unexpected replacements happen in team composition, workloads and responsibilities, leaving some members under a lot of pressure or stress, while others’ progress might hinder. Additionally, organisations and customers need to change, affecting the team in a different way each day. Observing such teams on a couple of occasions will not provide accurate insights on their resilience.

As described above, multiple different events at the same time might push the team to adapt its processes (Alliger et al., 2015) and those events might affect the team in a different way depending on the maturity of the team (Kennedy et al., 2016; Morgan et al.,
Time and team maturity should therefore also be taken into consideration when measuring, improving or training for team resilience.

Surprisingly, almost all the research ignored the negative side effects of being resilient. For instance, Dove-Steinkamp (2017) point out that some team members might not agree or feel safe with the way challenges were dealt with, which might weaken their commitment to the team. Additionally, coping with these negative side effects has not been addressed at all (Lundberg & Rankin, 2014). It is therefore important to acknowledge that over time team resilience can increase or decrease, and different inputs and mediators are needed depending on the maturity of the team.

Most importantly, the connection of empathy and compassion to team resilience should be studied. Being empathetic towards your team members and helping those in need is a key element of team resilience, but team members are willing to help each other out only if they feel empathy towards each other. Otherwise, struggling team members actions can be interpreted as weakness or sluggish (Dove-Steinkamp, 2017).

10 CONCLUSION

Teams are faced with several challenges in the future. Those designing the work teams of tomorrow should also consider that ways teams can manage disruptions and develop their processes without compromising their performance. Integrating the results from the input-mediator-output (IMOI) framework to an action-based view point on team resilience, this thesis has proposed a theoretical Team Resilience Action Model (TRAM). TRAM aims to understand the whole multidimensional process of team resilience: the actions resilient teams take and the factors that influence the actions at each phase. The TRAM presents team resilience as purpose driven behaviour, that can be influenced, trained, and developed. TRAM consists of three different phases: Anticipate-Action-Attain, and several influencing factors at each phase.

* * *
11 REFERENCES


### APPENDIX 1- DEFINITIONS OF TEAM RESILIENCE

<table>
<thead>
<tr>
<th>AUTHOR</th>
<th>DEFINITION</th>
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<tbody>
<tr>
<td>Sutcliffe, K., &amp; Vogus, T. (2003).</td>
<td>Resilience is the capacity to rebound from adversity strengthened and more resourceful. (p. 6)</td>
</tr>
<tr>
<td>Blatt, R. (2009).</td>
<td>“The capacity to rebound from adversity strengthened and more resourceful” (p. 1)</td>
</tr>
<tr>
<td>West, B., Patema, J., &amp; Caesten, M. (2009).</td>
<td>Team resilience is “the ability to either thrive under high liability situations, improvise and adapt to significant change or stress, or simply recover from a negative experience are less likely to experience the potentially damaging effects of threatening situations” (p. 254).</td>
</tr>
<tr>
<td>Bennett, J., Aden, C., Broome, K., Mitchell, K., &amp; Rigdon, W. (2010).</td>
<td>“The outcome and processes of achieving positive adaptation in the presence of risk or adversity” (Masten et al., 2006). (p. 224)</td>
</tr>
<tr>
<td>Furniss, D., Back, J., Blandford, A., Hildebrandt, M., &amp; Broberg, H. (2011).</td>
<td>“Processes that enable an effective response to unexpected events and vulnerabilities that lie outside the scope of formal procedures can be described as being resilient” (p. 1)</td>
</tr>
<tr>
<td>Van Der Kleij, R., Molenaar, D., &amp; Schraagen, M. (2011).</td>
<td>“Team resilience is the ability of teams to respond to sudden, unanticipated demands for performance quickly and with minimum decrement of performance”. (P. 2158)</td>
</tr>
<tr>
<td>Edson, M. (2012).</td>
<td>“Adaptation that supports successful achievement of goals and objectives, as well as learning for future planning and preparation” (p. 2)</td>
</tr>
<tr>
<td>Carmeli, A., Friedman, Y., &amp; Tishler, A. (2013).</td>
<td>“A team’s belief that it can absorb and cope with strain, as well as a team’s capacity to cope, recover and adjust positively to difficulties” (p. 149)</td>
</tr>
<tr>
<td>Morgan, P., Fletcher, D., &amp; Sarkar, M. (2013).</td>
<td>“A dynamic psychosocial process which protects a group of individuals from the potential negative effects of the stressors they collectively encounter. It comprises of processes whereby team members use their individual and combined resources to positively adapt when experiencing adversity” (p. 522).</td>
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<tr>
<td>Stephens, J., Heaphy, E., Carmeli, A., Spreitzer, G., &amp; Dutton, J. (2013).</td>
<td>“Resilience refers to the ability of individuals, groups, and organizations to absorb the stress that arises from these challenges and to not only recover functioning back to a “normal” level but also learn and grow from the adversity to emerge stronger than before (Sutcliffe &amp; Vogus, 2003)” p.3</td>
</tr>
<tr>
<td>Gomes, J., Borges, M., Huber, G., &amp; Carvalho, P. (2014).</td>
<td>“Resilience can be very widely defined as the capacity of the system/organization to successfully handle disturbances, including the surprising ones”. P.782</td>
</tr>
<tr>
<td>Lundberg, J., &amp; Rankin, A. (2014).</td>
<td>”resilience—their ability to adapt to circumstances outside of plans made in advance”. P.1</td>
</tr>
<tr>
<td>Rahimnia, F., Nazemi, S., &amp; Moradian, Y. (2014).</td>
<td>the ability of individuals, groups and teams in order to absorb pressure, improve organizational performance when dealing with internal and external challenges, coincided with the revival of mishaps, failures and further prepare for various events (Sutcliffe &amp; Vogus, 2003).</td>
</tr>
<tr>
<td>Alliger, G., Cerasoli, C., Tannenbaum, S., &amp; Vessey, W. (2015).</td>
<td>“... the capacity of a team to withstand and overcome stressors in a manner that enables sustained performance; it helps teams handle and bounce back from challenges that can endanger their cohesiveness and performance” (p. 177).</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Quote</td>
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<tr>
<td>Amaral, A., Fernandes, G., &amp; Varajão, J. (2015).</td>
<td>“The resilience of a team can be defined as the team’s ability to deal with problems, overcome obstacles, or resist the pressure of adverse situations, without entering into rupture, and allowing a positive adjustment to successfully perform particular tasks, increase reliability, longevity, and the overall performance” (p. 1182).</td>
</tr>
<tr>
<td>Morgan, P., Fletcher, D., &amp; Sarkar, M. (2015).</td>
<td>“A dynamic psychosocial process which protects a group of individuals from the potential negative effects of the stressors they collectively encounter. It comprises of processes whereby team members use their individual and combined resources to positively adapt when experiencing adversity” (P. B. C. Morgan et al., 2013, p. 522).</td>
</tr>
<tr>
<td>Kennedy, D., Landon, L., &amp; Maynard, T. (2016).</td>
<td>“team resilience as a shared belief held by the team that it can respond to disruptive and challenging events, recover from setbacks, and thrive as a team under these conditions”. P.468</td>
</tr>
<tr>
<td>Maynard, T., Kennedy, D. M. (2016).</td>
<td>team resilience is an emergent phenomenon; one that can be developed through training and learning</td>
</tr>
<tr>
<td>Meneghel, I., Martínez, I., &amp; Salanova, M. (2016).</td>
<td>“the capacity to bounce back from failure, setbacks, conflicts, or any other threat to wellbeing that they may experience” (West et al., 2009, p. 253).</td>
</tr>
<tr>
<td>Meneghel, I., Salanova, M., &amp; Martínez, I. (2016).</td>
<td>“the process to face off, per-severe and respond positively in the face of adversity”. P.250</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Definition</td>
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<tr>
<td>Sharma, S., &amp; Sharma, S. (2016).</td>
<td>Team resilience is the ability of the teams/groups to bounce back and sustain in the facade of adverse conditions. P.37</td>
</tr>
<tr>
<td>Bowers, C., Kreutzer, C., Cannon-Bowers, J., &amp; Lamb, J. (2017).</td>
<td>“team resilience is a critical team level capacity that facilitates the rebound of teams after an adverse event” p.2</td>
</tr>
<tr>
<td>Dove-Steinkamp, M. (2017).</td>
<td>Team resilience is an iterative process of managing disruptor cues, disruptors, and disruptions which includes five primary action phases: specification, mobilization, detection, determination (adjustment, as necessary); and reset. P. 145</td>
</tr>
<tr>
<td>Morgan, P., Fletcher, D., &amp; Sarkar, M. (2017).</td>
<td>“A dynamic psychosocial process which protects a group of individuals from the potential negative effects of the stressors they collectively encounter. It comprises of processes whereby team members use their individual and combined resources to positively adapt when experiencing adversity” (P. B. C. Morgan et al., 2013, p. 522).</td>
</tr>
<tr>
<td>Vera, M., Rodríguez-Sánchez, A., &amp; Salanova, M. (2017).</td>
<td>“Team resilience is the collective construct in which all members perceives the whole team as a a homogeneous group with plenty of resources, a common leader that guides them in a transformational way, with very clear objectives to achieve, within an organization that helps them” P.132</td>
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</table>

Appendix 1. Definitions of team resilience.
## APPENDIX 2- SLR IMOI EXTRACTION DATA

<table>
<thead>
<tr>
<th>Author</th>
<th>INPUT</th>
<th>Emergent State</th>
<th>Process</th>
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<tbody>
<tr>
<td>Sutcliffe, K., &amp; Vogus, T. (2003).</td>
<td>accumulated prior knowledge, group diversity</td>
<td>collective efficacy</td>
<td>communication processes, processes that promote competence, enhance human, social, and material assets (e.g., learning capabilities)</td>
</tr>
<tr>
<td>Blatt, R. (2009).</td>
<td>team diversity, team structure, trust</td>
<td>quality of relationships</td>
<td>creativity</td>
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<tr>
<td>West, B., Patema, J., &amp; Caesten, M. (2009).</td>
<td>Team efficacy, Team optimism, positive emotions</td>
<td>team resilience</td>
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<tr>
<td>Bennett, J., Aden, C., Broome, K., Mitchell, K., &amp; Rigdon, W. (2010).</td>
<td>interpersonal relationships, team orientation, positive attitudes (internal locus of control, optimism, and positive self-image), capacity to organize their lives, supportive relationships, team awareness,</td>
<td>group cohesion, group commitment to common goals</td>
<td>adaptation, group processes, positive communication, stress management, and providing social support, help-seeking behaviors, employee assistance utilization, supervisor responsiveness to troubled workers</td>
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<tr>
<td>Van Der Kleij, R., Molenaar, D., &amp; Schraagen, M. (2011).</td>
<td>Transformational leadership, shared leadership</td>
<td>shared leadership of Transformational leadership processes</td>
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<tr>
<td>Edson, M. (2012).</td>
<td>leadership, planning</td>
<td>organizational culture, inflection points, nested adaptive cycles</td>
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<tr>
<td>Carmeli, A., Friedman, Y., &amp; Tishler, A. (2013).</td>
<td>connectivity, relational connections between TMT members</td>
<td>adaptation, learning, collective consciousness, collective action, renegotiation of group norms, leadership, and innovation</td>
<td></td>
</tr>
<tr>
<td>Morgan, P., Fletcher, D., &amp; Sarkar, M. (2013).</td>
<td>formal structure, group norms and values, and communication channels, shared leadership roles, shared vision, past mastery experiences</td>
<td>strategic decision making, Adaptability</td>
<td></td>
</tr>
<tr>
<td>Stephens, J., Heaphy, E., Carmeli, A., Spreitzer, G., &amp; Dutton, J. (2013).</td>
<td>Trust, expressing emotions, group heterogeneity, Emotional carrying capacity, resources</td>
<td>learning orientation, effective behavioral responses, and managing change, structured, detailed team briefings, planning, trust, supportive processes, selfless exchanges</td>
<td></td>
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<tr>
<td>Gomes, J., Borges, M., Huber, G., &amp; Carvalho, P. (2014).</td>
<td>Team diversity, Team communication, Team organization, Physical distribution, Team size, Small/Modular Plans, Visual Support, workspace redesign, visual</td>
<td>expressing emotions constructively, learning from experiences, process of facing the challenge, leadership</td>
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<td>communication, structured/coordinated planning.</td>
<td>Team reorganization, Team coordination activities, Debriefing</td>
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<tr>
<td>Authors</td>
<td>Topics</td>
<td>Leadership</td>
<td>Quote</td>
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<tr>
<td>Lundberg, J. &amp; Rankin, A. (2014)</td>
<td>emergence, structure, role</td>
<td>improvisation, planning, team player attitude</td>
<td>looking after each other</td>
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<tr>
<td>Rahimnia, F., Nazemi, S., &amp; Moradian, Y. (2014)</td>
<td>positive emotions, communication</td>
<td>cohesion, efficacious beliefs</td>
<td>connectivity, cooperation, learning, processing of information, adaptability</td>
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<tr>
<td>Amaral, A., Fernandes, G., &amp; Varajão, J. (2015)</td>
<td>shared transformational leadership</td>
<td>proactive awareness to promote an emphasis on team improvement</td>
<td>teams adaptability, thoughtful interactions amongst team members during unexpected situations, team connectivity</td>
</tr>
<tr>
<td>Morgan, P., Fletcher, D., &amp; Sarkar, M. (2015)</td>
<td>positive emotions, transactive memory</td>
<td>transformational leadership, shared team leadership, team learning, social identity, and positive emotions, planning</td>
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<tr>
<td>Author(s)</td>
<td>Flexibility, Individual protective resources, well-being, communication</td>
<td>Collective efficacy, motivation, work-life balance, skills development, career development</td>
<td>Transformational leadership, teamwork, communication</td>
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<tr>
<td>Van Der Beek, D., &amp; Schraagen, J. (2015).</td>
<td>Team responding, Shared Transformational Leadership, reward systems, resource availability, management/ supervisory control, education systems and information systems</td>
<td>Organizational climate, proactive awareness of envisioned unexpected situations</td>
<td>Team responding, Shared Transformational Leadership, cooperation with other teams, and heedful interrelating amongst team members during unexpected situations</td>
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<tr>
<td>Kennedy, D., Landon, L., &amp; Maynard, T. (2016).</td>
<td>Team resilience</td>
<td>“A team that adapts in the face of a disruption is apt to enhance the team’s feelings regarding resilience, and possessing such resilience is likely to set the team up for better adaptation in the face of future triggers”. P.469</td>
<td></td>
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<tr>
<td>Maynard, T., Kennedy, D. (2016).</td>
<td>Diverse teams, accumulated knowledge, experiential diversity, emotional carrying capacity, team leadership, autonomy, improvised work, physical environment, organisational structures, a smaller team size, a conducive organisational structures, and communication.</td>
<td>Team resilience, psychological empowerment</td>
<td>Communication, briefing/debriefing, collaborative cross-checking, decision making processes</td>
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<td>Source</td>
<td>Key Concepts</td>
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<td>Meneghel, I., Salanova, M., &amp; Martínez, I. (2016).</td>
<td>Job social resources, positive relationships, support, trust, honesty, self respect, team-based job design, broader job descriptions, team roles and responsibilities</td>
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<tr>
<td>Sharma, S., &amp; Sharma, S. (2016).</td>
<td>Positive emotions, high quality group relationships</td>
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<tr>
<td>Bowers, C., Kreutzer, C., Cannon-Bowers, J., &amp; Lamb, J. (2017).</td>
<td>Mastery approach, social capital, group structure and, task design, task composition and group norms, team, network ties, shared language and trust</td>
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<td>Respectful interaction, team culture</td>
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<td>Leadership, collaborative problem solving, communication</td>
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<td>Close ties between group members, relationship quality, emotional intelligence, efficacy, hope, optimism, and resilience</td>
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<td>Enhancing group process, creating and maintaining group bonds</td>
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<td>Perceived efficacy of team members and perceived efficacy for collective team action</td>
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<td>Team learning orientation, team flexibility, network ties, shared language</td>
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<td>Task adaptability, cohesion, collective efficacy, culture, shared mental models, familiarity, resilience, transactive memory, psychological safety</td>
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<td>Forceful backup, planning, leadership, adaptability, compensatory behavior, performance monitoring, shared decision making</td>
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<td>Maintenance, growth, decay, and transformation, participation in group decision-making (shared, reflection (team learning))</td>
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<tr>
<td>Vera, M., Rodríguez Sánchez, A., &amp; Salanova, M. (2017).</td>
<td>team affective resources, appropriate team structure and management and communication</td>
<td>collective efficacy, teamwork, organisational practises: work-life balance, skills development, career development, wellbeing, equity</td>
<td>transformational leadership, teamwork</td>
</tr>
</tbody>
</table>

Appendix 2. Inputs-Emergent States-Processes of team resilience
APPENDIX 3. Summary of existing team resilience process descriptions. Author compilation of primary data.

<table>
<thead>
<tr>
<th>Resilient team characteristics and “enabling” conditions</th>
<th>Team resilience Actions</th>
<th>OUTPUT PERFORMANCE</th>
<th>SKILLS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td>Decrease of failures, improved readiness for challenges. Less affected by routine and adversity, improved durability and security of organizational growth. Collective commitment of team members to the team.</td>
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<td></td>
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<td>Development of creative ways to work and utilize untapped resources when responding to adversity. Improved skills to Link, merge or modify existing resources to better suit the unexpected situation. Vision of challenges as opportunities. Improved cohesion, cooperation, coordination. Empowered teams about their options of the future.</td>
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<td>MINIMIZE (before)</td>
<td>Anticipate challenges and plan contingencies</td>
<td>MANAGE (during)</td>
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<td></td>
<td>Formal structure</td>
<td>Recruiting and selecting “team players”</td>
<td>Thorough preparation to withstand stressors</td>
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<td></td>
<td>Strategic competition planning and management</td>
<td>Refusal to give up despite setbacks</td>
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<td></td>
<td>Emotional support</td>
<td>Digging in when facing challenges</td>
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<td></td>
<td>Tangible support</td>
<td>Sustaining high effort levels in difficult moments</td>
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<td>Extensive support</td>
<td>Not dwelling on setbacks</td>
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<td>Informational support</td>
<td>Communication channel</td>
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<td>Group norms and values</td>
<td>Open and honest communication</td>
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<td></td>
<td>Reflecting on the shared vision</td>
<td>Using frequent communication</td>
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<td></td>
<td>during adversity</td>
<td>Positive verbal communication</td>
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<td></td>
<td>Agreed behavioral principles in difficult times</td>
<td>Using humor during setbacks</td>
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<td>Group accountability</td>
<td>Effective behavioral responses</td>
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<td>Managing change</td>
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<td>Adapting</td>
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<td>Gaining experience of challenging situations</td>
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<td>Flexibility</td>
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<td>Prosocial Interactions</td>
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<td>No blame culture when experiencing failure</td>
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<td>Selfless exchanges during challenging situations</td>
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<td>Frequency of positive interactions</td>
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<td>Group cohesion</td>
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<td>Fighting spirit in challenging situations</td>
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<td>Sticking to the task in difficult moments</td>
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<td>Commitment to the team</td>
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<td>Sustaining team morale</td>
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<td>Working together during setbacks</td>
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<td>Past mastery experiences</td>
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<td>Gaining belief from past successes</td>
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<td>Drawing on experience of adversity</td>
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<td>Learning orientation</td>
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<td>Focusing on learning and improvement as a group</td>
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<td>Reshaping the team to focus on alleviative pressure</td>
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<td>Reinforcing positives from poor performances</td>
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<td>Keeping a broadened perspective</td>
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<td>Social persuasion</td>
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<td>Others spreading belief after failure</td>
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<td>Exhibiting a positive team attitude</td>
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<td>Gaining feedback after disappointment</td>
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<td>Group identity</td>
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<td>Deep emotional bond</td>
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<td></td>
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<td>Loyalty to each other during adversity</td>
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<td>Trust and respect in tough times</td>
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<td>Friendship in times of need</td>
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</tbody>
</table>

Influential factors identified by the IMOI-Analysis

<table>
<thead>
<tr>
<th>INPUT</th>
<th>PROCESS</th>
<th>OUTPUT</th>
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<tbody>
<tr>
<td>Trust, transformational and shared leadership and team structure: team diversity, strategy, physical environment and training.</td>
<td>Planning, leadership and communication processes.</td>
<td>TEAM learning, Team Social identity, positive emotions.</td>
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<tr>
<td>EMERGENT STATES</td>
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<tr>
<td>Shared mental models, transactional memory, collective efficacy, interpersonal trust, positive emotions, psychological safety and the ability to speak up</td>
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</tr>
</tbody>
</table>
Laura Roman 2018 / MANAGING DISRUPTION

SUPERVISOR: Peter Mcgrory/Director IDBM/ Aalto ARTS,
ADVISOR: Niina Nurmi / Director IDBM, ADVISOR: Matti Vartiainen / Professor Work and Organizational Psychology.
Aalto University School of Arts, Design and Architecture / International Design Business Management