



Radboud Universiteit Nijmegen

In Search Of M&A Success: Putting Employee Engagement At The Center Of Attention After Post-Merger Downsizing

**A System Dynamics Induced Systematic Literature Review to Propose a
Causal Model of Employee Engagement when Downsizing in the Aftermath
of Mergers**

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Preface

This master thesis is written for the completion of the Masters programme Business Administration with a specialization in Strategic Management at Radboud University Nijmegen. The topic of Mergers and Acquisitions has always piqued my interest. The evolution from alliance to merger, the war between two titan firms over a valuable target: it would always be a transformation with impact. In addition to studying the acquisition process in the legal sphere during my law programme (including experiencing part of a merger process hands on during my internship), this master thesis gave me the opportunity to explore the topic in the business sphere by immersing myself in management theories behind mergers and acquisitions.

While I really enjoyed researching the area of mergers and acquisitions, writing this thesis was not without any obstacles. Especially the exploratory nature of the study made it a longer ride than I initially expected. Still, I learned a lot about the process of designing and conducting research, about a new methodology (system dynamics) which I had never encountered yet, the demanding process of performing a systematic literature review and, of course, about the role of engagement in transformative contexts such as mergers, acquisitions and downsizing. In short: a very educational journey.

I would like to thank my supervisor, dr. Aalbers, for his guidance during the process of writing my thesis. He motivated me to focus on a more challenging thesis design and guided me throughout the process. Even though the journey was long and had its obstacles, he remained supportive. Also, I would like to thank my second supervisor, dr. ir. de Gooyert, for introducing me to the world of System Dynamics and causal loop diagrams modelling. Our meetings helped me understand the basics of the methodology and the role of simulations in understanding interrelationships between constructs in dynamic contexts. I enjoyed our discussions on the topic!

Finally, I am thankful to all my friends and family who supported me throughout my final year as a business administration-student. It was a special year for many reasons and I am glad everyone kept encouraging me to work hard and enjoy life!

I wish you all a pleasant read!

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ABSTRACT

While mergers and acquisitions (M&As) are as popular as ever, disappointing results remain to puzzle scholars on how to achieve M&A-success. When adding the frequently observed post-merger downsizing initiative to the equation, surviving employees need to endure many setbacks throughout the process. Interestingly, little is known regarding employees' engagement in this context, especially regarding causalities in relationship to mergers and downsizing. Therefore, this research proposes a causal model of employee engagement in the context of M&A and post-merger downsizing, including three underlying mechanisms regulating the engagement (i.e. the contagion mechanism, the resilience mechanism and the anchor & adjustment mechanism). The author performed a systematic literature review to find evidence for causalities through theory-based reasoning and inductive-data interpretation. Consequently, the causal model was translated to a causal loop diagram model (derived from system dynamics) functioning as input for simulations to observe the behaviour over time. The simulation findings offer four different patterns in the behaviour of engagement during the merger and downsizing process (Communication Champion, Top Down Management, Resilient Workforce and Disappointed Workforce), where the effect of communication plays an important role. Additionally, the causal model offers opportunities for future research directions and sets the stage for further system dynamics simulations research.

Keywords: M&A, (post-merger)downsizing, employee engagement, social contagion, resilience, anchoring & adjustment, system dynamics, communication.

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1. Introduction

To this date, two conflicting insights remain to puzzle scholars and practitioners in the M&A landscape: the fact that the number of M&A transactions keeps increasing (IMAA, 2019) and the compelling evidence that more than half of the M&As fail to deliver the firm performance that was expected (Roll, 1988; Haspeslagh & Jemison, 1991; Sirower, 1997; Bauer & Matzler, 2014). Still, even with the knowledge of the failure rate at hand, practitioners' apparent enthusiasm for M&A keeps growing, with the number of transactions worldwide reaching new all-time records in 2017: from 3,287 transactions in 1985 to 51,865 in 2018 (IMAA, 2019). The question of why and how M&A fail to realize their potential and expected outcome has yet to be fully answered (Friedman, Carmeli, Tishler & Shimizu, 2016). Therefore, with trillions of euro's being spent on M&A transactions it remains valuable for researchers and practitioners to invest time and energy to attempt to unravel the phenomena in search of 'M&A' success.

Dubbed 'the M&A paradox' (Weber, Oberg & Tarba, 2014), scholars have tried to tackle the reasons for poor results and looked for focal areas to increase M&A performance. What makes this quest even more challenging, given the complex nature of M&A, is the haziness around measuring M&A success (Javidan, Pablo, Singh, Hitt, & Jemison, 2004). Still, early discourse in M&A literature often attributed the failure to pre-merger issues ("why and how are mergers formed") such as strategic misfit between acquirer and target, relatedness, degree of diversification or acquisition experience (Angwin, Mellahi, Gomes, & Peter, 2016). Where the initial focus was more on strategic and financial explanation of the failure rate, the discourse started to shift once scholars discovered that strategic and financial examination provided incomplete explanation (Graebner, Heimeriks, Huy & Vaara, 2017) and their correlations got discredited (King, Dalton, Daily & Cavin, 2004). Thus, the discourse shifted to post-merger issues, or Post-Merger Integration ("PMI"), to understand how performance is affected by the formation and integration process (Angwin et al., 2016; Graebner et al., 2017). Within the merger and PMI literature, research on the 'human side' of mergers started to proliferate and repeatedly being mentioned as most critical aspect to study, considering the various (mostly negative) psychological effects mergers have on their employees (Gandolfi & Hansson, 2011; Stahl et al., 2013; Sarala, Junni, Cooper & Tarba, 2016).

Especially when the integration of both firms is accompanied with subsequent *downsizing* initiatives (Datta et al., 2010; Marks & Mirvis, 2011), also known to have severe negative effects on employees (Datta et al., 2010), the importance of the position of the employee becomes unquestionable. From a resource-based perspective (Barney, 1991) managers opt for downsizing – that is, the planned reduction of employees (Cascio, 1993) – since organizations need to reconfigure their assets to maintain competitive advantage (Graebner et al., 2017). The reconfiguration often includes workforce reduction as it can help managers eliminate redundancies to achieve planned synergies or cut unnecessary costs (O'Shaughnessy & Flanagan, 1998; Marks & Mirvis, 2011). Consequently, downsizing is not

necessarily to be seen as response to an acquisition failure, but as part of the reconfiguration process (Capron, Mitchell, & Swaminathan, 2001). Still, research demonstrates that downsizing, and mergers alike, have mixed to negative performance results (Bauer & Matzler, 2014; de Jong et al., 2016).

Accordingly, mergers and downsizing have two notions in common: (1) they both have mixed to poor results relating to firm performance and (2) they both are known to have severe impact on employees. Thus, my underlying theoretical stance regarding these notions is that it is indeed crucial to understand the role of employees and thus not surprising why the ‘human side’ of mergers has gained popularity.

In this merger and downsizing context, the ‘surviving employees’ – i.e. the employees who stay within the organization after downsizing (Gandolfi & Hansson, 2011) – react to the transformations in many ways (Datta et al., 2010). One particularly interesting way relates to the engagement of the employees (Datta et al., 2010; Marks & Mirvis, 2011). Employee engagement, meaning “the positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption” (Schaufeli et al., 2002, p. 74) is crucial for management to consider when aiming at M&A success, since a growing body of evidence supports the relationship between employee engagement and firm performance (Harter et al., 2002; Schaufeli & Bakker, 2004; Laschinger & Finegan, 2005; Salanova et al., 2005; Laschinger & Leiter, 2006; Macey et al., 2009; Rich et al., 2010). Consequently, putting employee engagement at the centre of attention after mergers and downsizing could assist in the quest for finding “M&A success”.

Interestingly, while research concerning the impact of M&A (hereinafter: “merger”) and downsizing on employees is abundant (Datta et al., 2010; Marks & Mirvis, 2011) as well as the research on employee engagement in general (Saks & Gruman, 2014), limited studies have studied employee engagement in transformative contexts such as mergers and downsizing (Teerikangas & Välikangas, 2015). Also, scholars have argued that many researches over-rely on quantitative, cross-sectional and self-report studies within the field when studying engagement, with limited *claims of causality* (Bailey, Madden & Alfes, 2017). Even after repeated calls upon scholars to study causalities, to date nearly no findings have been able to report empirically validated evidence for causality (Saks & Gruman, 2014; Byrne et al., 2016; Hernandez & Guarana, 2018). To that end, this study takes a different approach.

Looking at engagement in the merger and downsizing context through a ‘causality lens’, this study proposes that mergers and layoffs negatively impact the employees engagement which in turns initiates three feedback mechanisms. The first mechanism, which is becoming more established in management literature, is the contagion of cognition and emotions, also known as social contagion (Elfenbein, 2014). Social contagion refers to the process “in which a person or group influences the emotions or behavior of another person or group through the conscious or unconscious induction of emotion states and behavioral attitudes” (Schoenewolf, 1990, p. 50). Basically, it explains how humans get ‘infected’ by the moods of other humans through every day interaction (Barsade, 2002). When taken

to the context of merger and downsizing, the new organizational configuration and consequential reduction of employees trigger a lot of reactions for the surviving employees (Napier, 1989; Allen et al., 2001), most of which are negative (Gandolfi & Hansson, 2011). As engagement would decrease due to these negative reactions, this negative emotional state is being passed on to other colleagues through social interaction (Barsade, 2002), creating a downward spiral of engagement among colleagues. Hence, the model assumes that the contagion effect further decreases the engagement (Barsade, 2002).

The second mechanism describes the resilience of employees during adverse events (Shin, Taylor & Seo, 2012). Resilience of employees in its most general form refers to the occurrence of growth or positive changes following a stressful event (Britt et al., 2016). Conservation of Resources theory explains the process in which employees seek resources when confronted with significant adversity to 'bounce back' (Hobfoll, 1989; Richardson, 2002; Liu, Cooper & Tarba, 2019). As merger and downsizing are considered to be stressful events for employees (Shoss et al., 2016) their engagement will initially decrease. However, the natural tendency of humans to recuperate from negative experiences will create a balancing effect to bounce back engagement, thereby avoiding employees getting burnout (Youssef & Luthans, 2007; Shin, Taylor, & Seo, 2012).

The third mechanisms affecting the engagement level is the mechanism which regulates the baseline level of engagement: the anchoring & adjustment mechanism (Stermann, 2000). Inspired by the judgement heuristic of Kahneman and Tversky (1974), the mechanism illustrates how changes to a (psychological) system can alter the level of the system which was perceived as 'normal'. In this model, when the engagement drops for a certain period of time employees may get used to their new (lower) level of engagement even though processes such as resilience buffer the decrease in engagement. Over time, the gap between the (old) normal level and the current (lower) level closes, resulting in a 'new' baseline as reference point somewhere in between both levels.

To model these three mechanism and establish their causalities in the merger and downsizing context, this study uses causal loop diagram modelling (Stermann, 2000). Causal loop diagram modelling is based on the methodologies of System Dynamics (SD), a dynamic approach to research which is becoming increasingly popular in management literature (Mezias & Glynn, 1993; Stermann, 2000; Repenning 2002; Vancouver et al., 2010; Anderson & Lewis, 2014). In short, the aim of SD is to understand how certain (complex) phenomena behave over time by mapping out the underlying *causal* relationships (de Gooyert, 2019). Mapping these relationships in the form of causal loops diagrams enables the researcher to structure the cause-and-effect sequences in a clear overview and critically think about their interrelationships (Stermann, 2000).

In addition to the provided clarity and simplicity, modelling the relationships with causal loop diagrams also makes it possible to study the behaviour of the model over time through simulations, also known as dynamic computational modelling (Stermann, 2000; De Gooyert, 2019). The simulation offers the researcher a mean to mathematically define the structure of the model. In turn, the structure helps to

understand ‘what if’ there is a change in the model and not a prediction of ‘what actually happens’ (Sterman, 2000). SD-scholars have often argued that by studying the behaviour of theoretic concepts over time through simulations they are able to build, test and refine relationships proposed in theory (Taber & Timpone, 1996; de Gooyert, 2019). In other words, they claim that running simulations helps build better theory (Vancouver et al., 2010). In addition, this methods enables the study the estimate the impact of the proposed causal relationships in the absence of their empirical data (De Gooyert, 2019).

Therefore, in combining theory-based reasoning and inductive data-interpretation, the purpose of this research is to propose a causal model of employee engagement and three mechanisms when confronted with mergers and downsizing. To achieve this purpose, I conduct a systematic literature review in which I evaluate and synthesize literature dealing with proposed causal relationships and mechanisms within the model (i.e. the effect of mergers and downsizing on employee engagement and the mechanisms of contagion, resilience and anchoring & adjustment which regulate the engagement of employees). Consequently, this study translates the proposed causal model to a causal loop diagram model (based on System Dynamics) in order run sensitivity analysis and observe the behaviour of the model over time. Therefore, this research provides an answer to the following research question: *Does current literature provide evidence for causality regarding the impact of mergers and downsizing on the decrease in employee engagement which in turn initiates a contagion, resilience and anchoring & adjustment mechanism and, if so, how does engagement behaves over time?*

To answer the research question the following sub-questions are answered as well:

1. Does a merger affect employee engagement, and if so, how?
2. Does downsizing affect employee engagement, and if so, how?
3. Does the impact of merger and downsizing on employee engagement initiate a contagion mechanism and how does this happens?
4. Does the impact of merger and downsizing on employee engagement initiate a resilience mechanism and how does this happen
5. Does the impact of merger and downsizing on employee engagement initiate a change in the baseline of the level of engagement through the anchoring & adjustment mechanism?
6. How does the engagement behaves over time when running sensitivity analysis with the causal model through multiple scenarios?

The contributions of this research are fivefold. First, this study provides a first time *causal model* of engagement in the merger and downsizing context. In doing so, the model contributes to the understanding of post-acquisition human behaviour dynamics and opens up the academic debate and motivates scholars to build upon and further refine the model and continue research in causality with the purpose of enhancing M&A, downsizing and engagement literature. Second, most ‘classic’ research methods study relationships in monocausal models for the logic and consistent findings that comes with

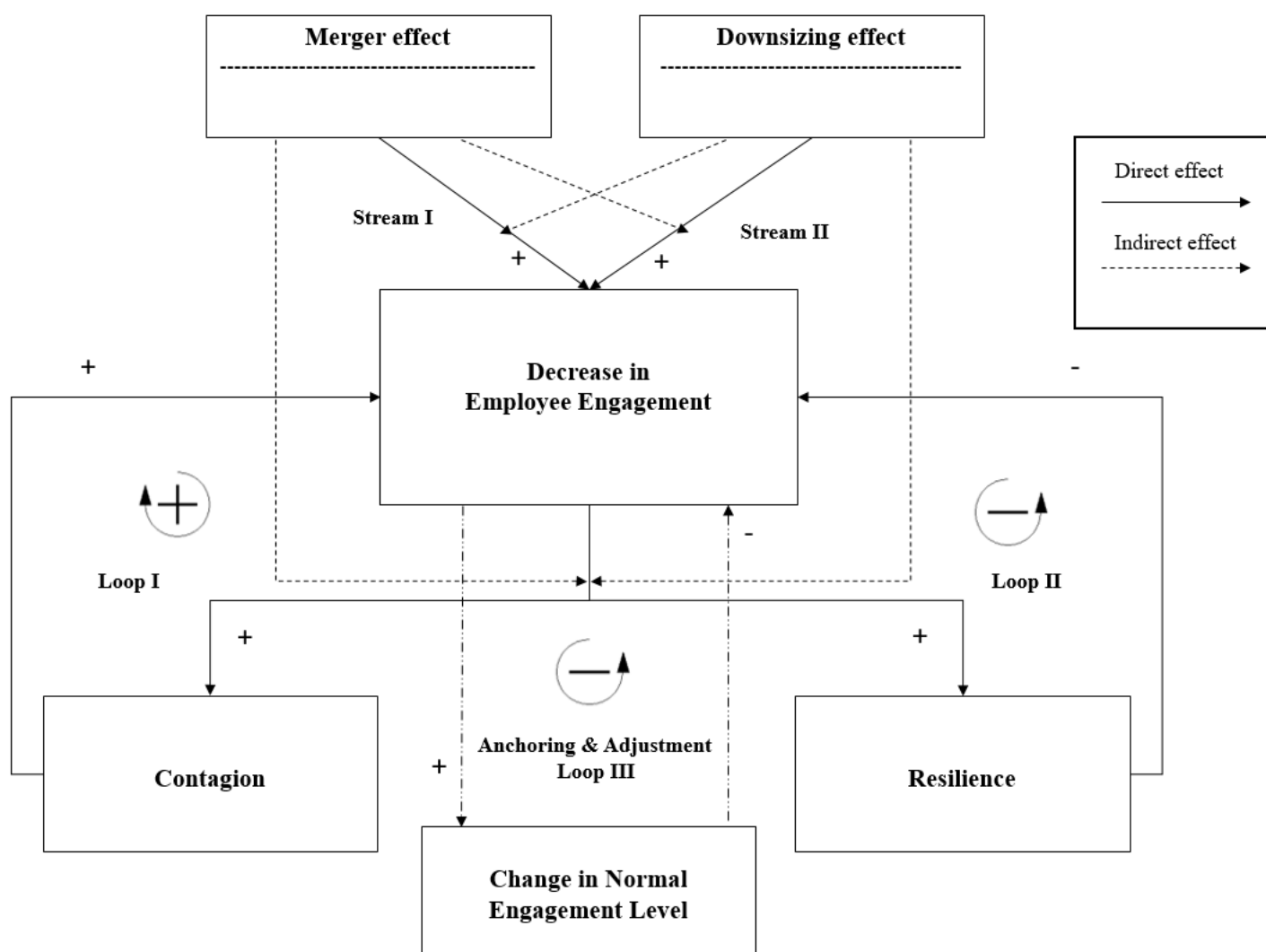
it (Repenning, 2002). However, there has been a call for more use of dynamic causal approaches to complex phenomena in the area of downsizing (Harney, Fu & Freeney, 2018) and especially in the area of human behaviour and attitudes (Sterman, 2000). Thus, this research answers the call by using causal loop diagrams modelling to structure the proposed relationships. In addition, this research uses a more holistic and therefore more realistic approach in modelling the environment by using mechanisms from multiple levels of analysis – that is, the individual- or micro-level and the dyadic/group- or meso-level – by linking social contagion (i.e. meso-level), resilience and anchoring & adjustment (i.e. micro-level) to engagement. Fourth, by running the simulation based on the theoretical findings this study offers a view of how the model behaves over time through four different scenario's, thereby identifying four 'strategies' and their impact on employee engagement. Fifth, where scholars noticed that the relationship between engagement and resilience could be reciprocal (Bakker & Demerouti, 2007) only minor suggestions have been made to the reason why. This research offers an explanation for the mutually reinforcing process by linking both constructs through feedback loops. Finally, this research answers the call for better understanding of social contagion in specific organizational situations where contagion may be particularly pervasive (Barsade, 2002). Where downsizing is often qualified as a 'pervasive event' (Trevor & Nyberg, 2008) this study answers the call for describing the role of contagion in the (merger and) downsizing context.

Regarding the practical contributions, this paper functions as an useful guide for management when planning mergers and downsizing. The research offers better understanding of the repercussions of mergers and downsizing on employee engagement. It provides management with specific areas (i.e. the mechanism but also its position in the cause-and-effect sequence) in the post-merger downsizing process that need extra attention in order to mitigate the often occurring negative effects for employees. As a result, practitioners could develop strategies and tactics which drive the engagement of employees to finally increase the chances of achieving M&A success. As became clear that communication plays a huge role not only in mitigating job insecurity and anxiety but also to prevent rumouring and increasing resilience effects, managers could adopt different communication strategies for each construct to ensure maximum efficiency. Where, for instance, early communications could focus on avoiding anxiety, later communications could focus on tackling information deficiencies to reduce the amount of rumouring and finally focus on presenting the benefits for employees' future career to boost resiliency effects.

Regarding the structure of the thesis, I first present the conceptualization of key constructs and discuss the scope and procedure of the review (2). Then, I discuss the findings of the systematic literature review (3). Consequently, I describe the method behind system dynamics and causal loop diagrams, mathematically specify the model and run the simulation to discuss the results (4). Finally, the Discussion & Conclusion section provides a summary of the findings of the systematic literature review

and the simulation, describes the limitations of the study, offers future research directions and possible recommendations for practice (5).

Figure 1
A Research Model of Employee Engagement
When Merging and Downsizing



2. To Set the Stage: Defining Key Constructs and Scope

2.1 Key constructs

Mergers

To create value, organizations often engage in mergers to gain market power, reduce costs to achieve higher efficiency and/or to redeploy assets and competences to generate economies of scope and synergies (Capron, Dussauge, & Mitchell, 1998; Haleblian et al., 2009). The effectiveness of the merger strategy does not solely rely on decisions taken in the pre-merger phase, such as finding the partner with the best ‘strategic fit’ or negotiating the best price (Homburg & Bucerius, 2006). In line with earlier research, the way how organizations manage the post-merger phase is often cited as decisive for the success of the merger (Haspeslagh & Jemison, 1991; Stahl & Voigt, 2008). Due to the lack of consistent results regarding merger performance, scholars have shifted their focus to events important during post-deal implementation (e.g., Barkema & Schijven, 2008; Stahl & Voigt, 2008; Haleblian et al., 2009; Steigenberger, 2017). Consequently, under the denominator post-merger integration (PMI) research has accumulated different topics all dealing with the phase after the transaction is completed in order to boost merger-performance (Graebner et al, 2017). Among these areas, this study will focus on the impact of the mergers on its employees, thus the ‘human’ area of post-merger integration. It includes all types of organizational mergers (excluding internal mergers), not discriminating between public or private organizations or sizes of the merger.

Downsizing

One of the earlier definitions of downsizing –“... a set of activities, undertaken on the part of the management of an organization and designed to improve organizational efficiency, productivity, and/or competitiveness” (Cameron, 1994, p. 192) – takes a fairly holistic approach with emphasis on increasing firm performance (Gandolfi & Hansson, 2011). However, a different angle is taken by Cascio (1993) with the focus on workforce reduction, describing downsizing as “the planned reduction in the number of the organization’s employees” (p. 95). In this research the latter definition is more suitable because the focus of this review is the effects on employee engagement in the context of *workforce reduction* (‘downsizing’). Therefore, this definition explicitly refers to downsizing where ‘surviving employees’ actually occur, which would not be the case *per se* if downsizing ‘activities’ occur in the meaning of the former definition.

Downsizing is mostly done for cutting costs and more efficient use of human resources (Datta et al, 2010). Commonly, downsizing is associated with initiatives necessary during economic downturn for the survival of the organization (Brauer & Laamanen, 2014). However, taken from an organizational efficiency perspective, it is also justifiable to initiate downsizing when the organization is considered

‘healthy’ (Datta et al., 2010; Datta & Basuil, 2015). This so-called ‘proactive’ downsizing is undertaken in prosperous times with the aim of enhancing the long-term competitiveness (Datta & Basuil, 2015). For that matter, downsizing can be used after a merger to, *inter alia*, aim for positive financial outcomes (e.g. lower costs) (Cascio, Young, & Morris, 1997), positive organizational structure outcomes (e.g. enhance efficiency) and positive human outcomes (Datta et al., 2010). Both forms will fall within the scope of the review, because it is equally possible that the downsizing is initiated due to disappointing results as well as boosting merger performance.

Employee Engagement

Employee engagement literature is still in the initial stages of becoming a formal theory (Turner et al., 2018). It has, however, been gaining momentum in the research field of management (Simpson, 2009; Anthony-McMann et al., 2017) since a growing body of evidence supports the relationship between employee engagement and organizational outcomes, including those which are performance based (Harter et al., 2002; Schaufeli & Bakker, 2004; Laschinger & Finegan, 2005; Salanova et al., 2005; Laschinger & Leiter, 2006). The term *employee engagement*, however, is not the only used version representing the construct of engagement. As Saks and Gruman (2014) justly point out, where some scholars work with the term *employee engagement*, others use the term *job engagement* (Rich et al., 2010) or *work engagement* (Schaufeli & Salanova, 2011) while they all encompass the same construct. Additionally, the construct of employee engagement is often considered to be hard to define and measure (Marcey & Schneider, 2008). Scholars have pointed out that problems regarding the definition is mostly caused by the conceptual overlap of engagement with other (older) attitudinal constructs: job satisfaction, organizational commitment and job involvement (Saks, 2006; Cole et al., 2012; Shuck et al., 2012). As a result, different models and theories of engagement exist, where some take into account the overlap and others explicitly distinguishes the concepts (Saks & Gruman, 2014). A very compelling study performed by Newman, Joseph and Hulin (2010) did the following: to measure the similarity and relationship between the three attitudes and engagement they created a higher order attitude factor (‘factor A’) which underlay commitment, satisfaction and involvement. Subsequently, through meta-analysis of both engagement and factor A they reviewed the overlap and found a correlation or $r = 0.77$ between both constructs. In other words, they illustrated that engagement did not add much compared to the three attitudes when studying employee behaviour. Yet, other studies reported that these constructs were closely related but empirically distinct (Demerouti et al., 2010; Christian et al., 2011; Kim et al., 2017). The argument here is that the overlap does not seem to be severe enough for researchers to simply abandon and replace these constructs for engagement which does not accurately reflects them (Shuck, Nimon, & Zigarmi, 2017). Thus, in line with more recent literature regarding the distinction this review considers engagement a separate construct. However, where data does provide compelling evidence for causality I will cautiously discuss the role of the three constructs.

Accordingly, this research will use the influential definition on employee engagement proposed by Schaufeli et al. (2002) because it is widely used in literature and since their definition has proven to have psychometric quality in defining the multidimensional construct ‘engagement’ (Bakker & Schaufeli, 1999). Employee engagement is defined as “a positive, fulfilling, work-related state of mind characterized by vigour, dedication and absorption” (Schaufeli et al., 2002, p. 74). This definition gives three important components which each represent a dimension (physical, emotional and cognitive) also used by other scholars when measuring engagement (Kahn, 1990; Rich et al., 2010). The first component is vigour (physical dimension), which is regarded as a trait showing high levels of energy and mental resilience, having the will to invest effort at work and persistence in challenging times (Bakker et al., 2008). The second component is dedication (emotional dimension), which is regarded as a trait indicating a sense of significance, enthusiasm, inspiration, pride and challenge (Schaufeli & Bakker, 2004). Finally, absorption (cognitive dimension) is described as being fully and happily involved and concentrated in one’s work, not being aware of the time passing by and where one experiences difficulties with detaching oneself from work (Schaufeli & Bakker, 2004).

Important for defining this key construct is that engagement is considered as a positive state-of-mind, which is commonly assumed to be the opposite pole of *burnout* (Schaufeli & Bakker, 2004; Llorens et al., 2006; Demerouti et al., 2010; Parzefall & Hakanen, 2010). Burnout is defined as a psychological syndrome characterized by exhaustion, cynicism, and inefficacy, which occurs in response to exposure to prolonged stressors (Maslach & Leiter 2005). The multidimensional construct consist of three components: emotional exhaustion, cynicism, and reduced professional efficacy (Cotter & Fouad, 2013). Emotional exhaustion denotes feelings of being drained or depleted from one’s emotional resources (lower energy). Cynicism refers to responses being detached, callous or negative (low involvement). The inefficacy refers to a lack of confidence or sense of inadequacy in being able to do your job (low efficacy) (Simpson, 2009). The research conducted in both constructs, burnout and engagement, found that the core dimensions of each constructs (emotional exhaustion and cynicism for burnout, vigour and dedication for engagement) are indeed counterparts (Gonzalez-Roma et al., 2006). Putting it differently, where low energy, low involvement and low efficacy are characteristics of burnout, high energy, high involvement and high efficacy are part of engagement (Simpons, 2009). Finally, to assess engagement, its antecedents and its consequences, the predominant theory of the JD-R model of Bakker and Demerouti (2007) paves the way to define the scope of this research. The JD-R model builds on the premise that the level of engagement/burnout is results from two processes: job demands and job resources (Bakker & Demerouti, 2007). Job demands refer to features of work that demand sustained physical, mental, social and/or psychological effort. Empirically validated job demands are work overload, job insecurity, role ambiguity, time pressure, and role conflict (Saks & Gruman, 2014). Job resources, on the other hand, refer to features of work that help achieve work goals, reduce job demands and stimulate growth. Examples include pay, career opportunities, team climate and participation in decision-making (Saks & Gruman, 2014). In addition to job resources, Bakker &

Demerouti (2007) expanded the JD-R model by proposing that engagement is also driven by personal resources which are “aspects of the self that are generally linked to resiliency and refer to individuals’ sense of their ability to control and impact upon their environment successfully” (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007, p. 124). Examples of personal resources are resilience, self-efficacy and optimism (Saks & Gruman, 2014). As for the validity of the JD-R model, studies using the model came to the conclusion that job resources are positively related to work engagement and negatively related to burnout (Bakker & Demerouti, 2007). Thus, job/personal resources and job demands will function as important indicators for the regulation of engagement in this research.

The Contagion Mechanism

Understanding social processes in work settings is becoming increasingly important since these processes can serve to understand group dynamics and how these processes occur (Barsade, 2002). The majority of literature dealing with social processes finds its roots in sociology, but scholars with a focus on organizational management are increasingly interested in the field (Hartman & Johnson, 1989; Barsade et al., 2018). Organizational behaviour theory deals with organizational processes such as affective relations of group members (Tickle-Degnen & Rosenthal, 1987). Within this literature, academics have assessed the social contagion phenomenon, that is “the process in which a person or group influences the emotions or behavior of another person or group through the conscious or unconscious induction of emotion states and behavioral attitudes” (Schoenewolf, 1990, p. 50). Underlying the concept of social contagion, two distinct forms in which contagion occur are identified: (1) cognitive contagion, in which ideas and cognitions are shared amongst individuals and (2) emotional contagion, in which the induction of emotional states and behavioural attitudes influence the emotions and behaviours of other individuals (Schoenewolf, 1990). Most scholars use the term ‘emotional’ contagion (Hatfield, Cacioppo, & Rapson, 1994; Barsade, 2002), although ‘affect’ may also be used, since it is accepted that both terms encompass the general phenomena of subjective feelings (Ashforth & Humphrey, 1995).

The distinction between cognitive and emotional contagion is important because they differ on certain points. Cognitive contagion needs words (verbal exchange) to share and understand ideas (Salancik & Pfeffer, 1978), where for emotional contagion words are less important for understanding emotions; for emotional contagion interpersonal contact in the form of face-to-face contact (nonverbal cues) is enough for the transmission of emotions and ideas (Mehrabian, 1972; Ilgen & Klein, 1988). Secondly, more conscious effort is required for cognitive contagion in the form of evaluation, interpretation, expectation and personal goals found in the sharing of ideas (Salancik & Pfeffer, 1978). Conversely, emotional contagion is mostly based on automatic processes and physiological responses indicating lower levels of consciousness (Neumann & Strack, 2000). And finally, emotional contagion is better established in literature than cognitive contagion (Barsade et al., 2018). For instance, much

research is done regarding the level at which emotional contagion can occur. The contagion of emotions can be studied at the individual level (e.g. proneness of getting infected by emotions of others, Hatfield et al., 1994), at the dyadic level (e.g. two colleagues exchanging emotions) or at group-level (e.g. transfer of emotions among group members, Barsade, 2002). Both forms of contagion will be included in the scope of the review.

The Resilience Mechanism

While the main concept of resilience has originally received substantial attention in applications such as the military and sports management (King, Newman & Luthans, 2016), there is a growing recognition in organizational psychology literature regarding the importance of resilience in work-settings (Richardson, 2002; Newman et al., 2014). In academic literature there is a lot of discrepancy regarding the conceptualization of employee resilience. Generally, all conceptualizations concede in the notion that employee resilience refers to an individual showing growth or positive adaptation following a stressful event (Brit et al., 2016). This means that there needs to be (1) a significant adversity and (2) positive adaptation regarding the adversity (Masten, 1999). The fundamental assumption here is that time heals, either because the significant adversity slowly disappears over time and/or individuals seek to revert to their baseline psychological state (Grunberg et al., 2008).

Researchers make an important distinction between *the capacity* (i.e. trait) for resilience and the *demonstration* (i.e. process) of resilience (Brit et al., 2016). When considering employee resilience as a capacity, scholars refer to individuals possessing and using personal resources associated with ability of positive adaptation when encountering adverse events (Masten & Narayan, 2012). Important processes that reflect the capacity for resilience are, *inter alia*, appraisal of adversity, coping strategies and seeking help from others (Brit et al., 2016). Demonstration of resilience, on the other hand, refers to the observation that employees exhibit positive adaptation when facing significant adversity (Bonanno, 2004). This positive adaptation can be reflected in job performance, low adverse symptoms, high well-being and healthy relationships (Brit et al., 2016). Where the capacity describes resilience as a trait employees possess and use, the demonstration emphasizes more on the process or trajectory employees go through when encountering negative effects (Fletcher & Sarkar, 2011).

Since the scope on this research is focused on identifying causal relationships in circular loops (i.e. the causal process of bouncing back), I will discard resilience as a capacity, because if resilience would be defined as trait-based (i.e. only employees with certain traits are able to bounce back) the experience of bouncing back could be framed as a matter of innate disposition. That would suggest that the model would need to include personal characteristics, which is beyond the scope of this research. Thus, the demonstration of resilience will be taken into account since it helps in identifying the visible outcomes stemming from resilience (Britt et al., 2016).

Anchoring & Adjustment Mechanism

An important feature in behavioural dynamic systems is the discrepancy between the ‘desired’ state and the ‘actual’ state when an intervention interrupts the system (Stermann, 2000). Ample empirical evidence supports the existence of such a habituation where humans get accustomed to the present circumstances, adapting to the new situation by increasing/decreasing their standard to the present circumstance (Stermann, 2000). In other words, the individual engages in mental processes to close the gap between the actual state and desired state. Humans, for instance, generally do not feel comfortable failing when trying to reach their goals. Thus, they decide to lessen their goals in order to experience less cognitive dissonance (Lant, 1992). Another example relates to employees’ reactions to high work pressure: Einhorn and Hogarth (1981) found that employees followed an adjustment process by anchoring the current service quality standard and later adjusting the standard above or below this standard depending on the workload they received. When the workload remained below the standard long enough, the standard decreased, resulting in a ‘new’ normal state (Hogarth, 1980). This process has been used frequently in system dynamics, labelled the *anchoring and adjustment* process (Stermann, 2000; Donohue, Katok & Leider, 2018) inspired by the judgement heuristic of Kahneman and Tversky (1974). Thus, the mechanism will be defined as such a system where changes occur in baseline/normal levels.

2.2 The Scope

2.2.1 Systematic Literature Review

Generally, literature reviews – which is “a form of research that reviews, critiques, and synthesizes representative literature on a topic in an integrated way” (Torraco, 2005, p. 356) – are important for any academic field because they thoroughly analyse an accumulated body of research, to finally offer a conceptual model which synthesises the existing research (Webster & Watson, 2002). In management research the literature review is also perceived as a key tool, used to manage the diversity of knowledge surrounding a certain academic topic enabling the researcher to map and assess existing knowledge (Tranfield et al., 2003).

Where quantitative research mainly answers very specific questions, a literature review can identify multiple patterns (e.g. mechanisms in a certain context) and trends in the literature so that it can identify gaps or inconsistencies in a body of literature (Onwuegbuzie and Frels, 2016). Usually, integrative literature reviews are known to be used as research method for fairly mature topics where an abundance of research exists to reconceptualise the expanding and diversified knowledge (Torraco, 2005). However, an integrative review may also serve as a useful strategy for studying topics which have not undergone comprehensive review (Torraco, 2005). Since this review deals with multiple

relationships where some streams have been scrutinized more heavily – the effect of mergers and downsizing on employees (Napier, 1989; Datta et al., 2010) – than others – the engagement and its effect on the proposed mechanisms – an integrative literature can deal with both types of topics (Torraco, 2005). Additionally, because the focus of this research is to construct a comprehensive synthesis of literature to identify the causality regarding different mechanisms affecting employee engagement, performing a literature review will help to collect and identify the status of the proposed relationships for system dynamics research which needs to know the polarity or interactions of relationships when conducting simulation modelling (Sterman, 2000).

When conducting literature reviews, researchers have multiple procedures or so called methods to follow (see Grant & Booth, 2009 for an analysis of 14 different review types). Commonly, researchers choose between a *narrative* literature review or a *systematic* literature review (Green, Johnson & Adams, 2006). The most used approach in management literature – the narrative literature review (Hodgkinson & Ford, 2014) – is regarded as the traditional form of reviews which provide a comprehensive, critical and objective analysis of the current knowledge on a topic (Day, 1998; Onwuegbuzie & Frels, 2016). Most researchers use this approach to often address large and complex areas involving multiple issues (Hammersley, 2001). Its uniqueness lies in the freedom of the author to include articles based on the researchers own criteria, at the beginning of the research as well as during the research (Mulrow et al., 1997). Regardless of its broad usage in management literature, narrative reviews have been widely criticized for being singular descriptive accounts of contributions made, where the inclusion of articles are made through implicit biases of the researcher (Hart, 1998). As Tranfield et al. (2003) describes: “traditional ‘narrative’ reviews frequently lack thoroughness, and in many cases are not undertaken as genuine pieces of investigatory science” (p. 207). Basically, its principal drawback is the inherent subjectivity it compasses (Hodgkinson & Ford, 2014).

Systematic reviews differ from traditional narrative reviews in having the focus on a replicable, scientific and transparent process (Tranfield et al., 2003). It is characterized by specific research questions using a systematic and explicit methodology to identify, select, and critically evaluate results of the studies included in the literature review (Day, 1998). The adjective ‘systematic’ indicates that there is a procedure to be followed for selecting studies for inclusion in the review (Slavin, 1986). When conducting systematic literature reviews in management and organizations studies, academics generally take into account four key principles to ensure the quality of the review: transparency, inclusivity, explanatory and the heuristic nature (Denyer & Tranfield, 2009; Booth et al., 2016). Basically, transparency refers to explicitly and openly communicate the processes and methods employed in the review. By setting up a review protocol describing the search strategy, inclusion/exclusion criteria and process of analyses the reviewer offers this transparency (Denyer & Tranfield, 2009). Second, inclusivity aims at to beware reviewers of limiting the data to a specific hierarchy of evidence. Especially in management literature where there is limited uniformity regarding methods of data collection, analysis, research questions and samples (Denyer & Tranfield, 2009). Therefore, reviewers have been

advised to guard themselves against excluding studies on the basis of quality ratings of journals and to approach studies more with a ‘fit for purpose’ attitude (Boaz & Ashby, 2003). Third, the explanatory principles indicates that the researcher should synthesize the primary studies through a process of conceptual innovation and reinterpretation instead of mere repetition of knowledge (Campbell et al., 2003). By doing so, the review generates ‘new’ value to the scientific debate (Tranfield et al., 2003). Last of all, heuristic refers to the outputs of systematic reviews. Generally, outputs of systematic reviews in management provide relatively abstract answers to what, how and why some relationship happens in the sense that these answers are more likely to be rules, suggestions, guides or prototype protocols useful for the ‘progress’ towards finding the solution of the problem rather than the exact answer itself (Denyer & Tranfield, 2009). In this light, scholars should perceive the outputs as heuristics presented as clues/idea’s, tools or methods for their future studies (Denyer & Tranfield, 2009).

Accordingly, this research will take the *systematic* approach for reviewing the literature to minimize the risk of bias and subjectivity, to make the procedure explicit thereby offering transparency and enabling academics to challenge the review (Hodgkinson & Ford, 2014).

2.2.2 The Procedure

Due to the lack of standardization of systematic literature reviews in management literature various academics have attempted to translate the systematic review procedure originating from the medical science field to a format useful for management scholars (Tranfield et al., 2003). Consequently, several comprehensive resources have emerged to guide authors in performing a systematic literature review (Fisch, & Block, 2018). Although these resources are fairly similar (minor differences aside) one of the more prevalent systematic procedures used in leading review management journals such as *International Journal of Management Reviews* (e.g. Thorpe et al., 2005; Dean et al., 2019; Niesten, & Stefan, 2019) and *Journal of Management* (e.g. Terjesen et al., 2016; Hoskisson et al., 2017; Saebi, Foss & Linder, 2018) is the systematic literature review procedure proposed by Tranfield et al. (2003), fine-tuned by Denyer & Tranfield (2009). Their procedure follows three stages, each consisting of multiple phases (Figure. 2).

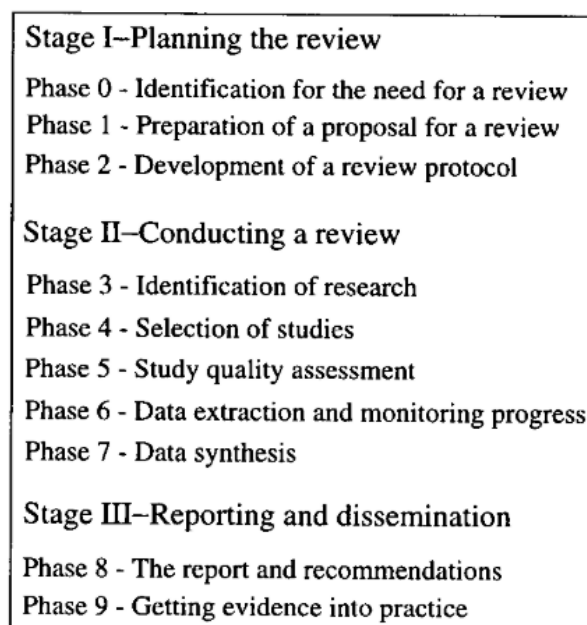


Figure 2. The systematic literature review process (Tranfield et al., 2003)

First the researcher starts planning the review (Stage I) by identifying the need for a review, preparing the proposal and developing the review protocol where the search terms, search strategy and inclusion/exclusion criteria are discussed (phase 0 to 2). Next, the researcher starts conducting the review (Stage II) in multiple phases (3 to 7): first the reviewer identifies and collects the relevant key words and search terms built from the exploratory/scoping study (phase 3). This includes formulating search strings which are appropriate for the research. Then, the author initiates the search for journal articles based on the inclusion criteria to form the dataset (phase 4). The first round only consists of title, abstract and keywords screenings. The approach of first screening title and abstract searches has been recognized to have weaknesses (Pittaway et al., 2004). However, since systematic reviews are generally faced with overwhelming amounts of citations the approach is deemed useful to review a dataset in a short timeframe (Pittaway et al., 2004). After the iteration of removing irrelevant articles, the second round consists of full text reviews based on the inclusion criteria. In the following phases the reviewer assesses the quality (i.e. internal validity) of the selected articles (phase 5) and extracts the data in useful formats – i.e. classifying the literature per concept – (phase 6). Then, in phase 7 the synthesis of studies takes place. Basically, the synthesising process aims at combining all the individual findings together to make a comprehensive and integrated whole that should be more than the sum of its parts (Denyer & Tranfield, 2009). Finally, the reviewer reports the findings (Stage III) and proposes recommendations for theory and practice (phase 8 and 9). Since the first two stages have already been discussed in the introduction and theoretical background, this review will continue at Stage I, phase 2: setting up the review protocol.

The Review Protocol

Data sources and search terms

For the systematic literature review the databases of EBSCO Business Source Complete and Web of Science were used for accessibility and practical reasons (Fisch & Block, 2018). Also, for additional searches (e.g. author searches, specific journal searches) the search engine Google Scholar was used. Usually, review articles limit the scope of the study to research reported in leading journals due to the abundance of research available (Haleblian et al., 2009; de Gooyert, 2019). However, given the exploratory nature of this review and the principle of inclusivity discussed above this study also took articles not published in leading journals into account to make sure the dataset was exhaustive enough for analysis (Thorpe et al., 2005; Rudolph, 2009).

Searches were conducted by using three key constructs of the model, that is, merger, downsizing and employee engagement and three constructs representing the mechanisms. In doing so, the aim was to target the right environment (impact of merger and downsizing in an organization on employee engagement) and within that environment search for evidence of contagion, resilience and anchoring & adjustment (see Figure. 3). Remarkably, using this composition provided a limited number of relevant articles. Therefore, to broaden the search scope nearly the same setting was used (merger and downsizing) including (different forms of) the construct ‘reactions’ as umbrella-terms for various responses which can occur when merging and downsizing. The rationale behind this choice was to identify articles dealing with reactions which indicated the occurrence of one of the mechanisms. For instance, an article could report signs of increased emotional exhaustion (a dimension of burnout) during mergers without mentioning the word burnout or any form of engagement.

In order to fully capture the constructs, simple operators such as truncation characters (e.g. ‘merge*’ to include the singular and plural form in search results) were added in the search terms (Denyer & Tranfield, 2009). Also, given the multitude of different terms used to describe the same constructs – a typical phenomenon in the fragmented management literature (Tranfield et al., 2003) – the review included commonly used synonyms and related terms as search terms to limit loss of valuable data. The synonym terms were identified during the exploratory study and can be found in Table 1.

First, for the construct downsizing the terms ‘restructuring’ (Harney et al., 2018), ‘delaying’ (Ebadan & Winstanley, 1997), ‘workforce reduction’ (Datta et al., 2010), Workforce downsizing (Brauer & Laarmanen, 2014), ‘layoffs’ (Gupta & Sucher, 2018; Harney & Freeney, 2018) and ‘personnel reduction’ (Budros, 1999), were used to design the construct downsizing (Cameron, 1994). Regarding the term restructuring, the term does not mean a reduction in headcounts *per se*, since it can also refer to more general organisation reconfigurations (Harney et al., 2018). However, in practice the terms are not mutually exclusive where some scholars also refer to restructuring when reducing the number of employees (Kawai, 2015), hence the inclusion of the term. Second, for the construct merger the search

terms included ‘M&A’, ‘acquisition’ and ‘merger’ (as often being used interchangeably in management literature, Haleblan et al., 2009) and ‘takeover’ (Pablo & Javidan, 2004). It was possible to expand the range of keywords of the merger construct to words such as diversification. However, incorporating these terms yielded an excess in articles dealing with strategies for selecting target companies and therefore not relevant for the topic of the review (Haleblan et al., 2009). Third, the engagement construct included the different terms used for employee engagement: job engagement (Hernandez & Guarana, 2018), work engagement (Schaufeli & Salanova, 2011), staff engagement (Bailey et al., 2017), organisation engagement (Bailey et al., 2017), personal engagement (Bailey et al., 2017), psychological engagement (Bailey et al., 2017) and individual engagement (Bailey et al., 2017). As mentioned earlier much of the engagement research is grounded in the burnout literature, its antonym – (Maslach, Schaufeli, & Leiter, 2001). Thus, articles discussing burnout in the scope of our review were also included for analysis. To capture the field of research dealing with employee’s ‘reactions’ to mergers and downsizing, other terms such as ‘reaction’, ‘response’ and ‘reception’ (in multiple forms) were included (see e.g. Allen et al., 2001; Kernan & Hanges, 2002). Likewise, terms describing the process were also included. Where no source for an operationalization is provided the term is not known to be frequently used as construct. Consequently, I did use the term because in my opinion these words complement the construct or mechanisms and increases the chance in finding relevant data.

Search strategy

To search for relevant articles *block searches* were used as main search strategy. Searches with blocks is a research strategy where a block (i.e. construct) is formed by formulating a search strings consisting of all relevant terms reflecting the construct (Aromataris & Riitano, 2014). The search strings are formed with Boolean logic (Aromataris & Riitano, 2014). This means that with the use of Boolean operator ‘OR’ each block (i.e. a key constructs of the review) was designed by accumulating all the related terms discussed above (Denyer & Tranfield, 2009). After the blocks are formed, they are linked with the Boolean operator ‘AND’ to another blocks, in this case being the two blocks connected via their cause-and-effect relationship (i.e. Stream I and Stream II).

Table 1 Search terms		
Construct	Definition	Included operationalisations
Downsizing	<i>Personnel</i> reductions in the organizational context (Cascio, 1993)	Workforce reduction (Datta et al., 2010). Personnel reduction (Budros, 1999). Workforce downsizing (Brauer & Laarmanen, 2014) Delaying (Ebadan & Winstanley, 1997) Restructuring (Harney et al., 2018) Reorganisation (Datta et al., 2010). Layoffs (Gupta, & Sucher, 2018; Harney et al., 2018)
Merger	M&A is a general term used to describe the consolidation of companies or assets through various types of financial transactions, including mergers, acquisitions, consolidations, tender offers, purchase of assets and management acquisitions (Hayes, 2019)	M&A (Haleblian et al., 2009) Acquisition (Haleblian et al., 2009) Merger and acquisition ((Haleblian et al., 2009) Takeovers (Pablo & Javidan, 2004)
Employee Engagement	A positive, fulfilling, work-related state of mind characterized by vigour, dedication and absorption (Schaufeli et al., 2002)	Job engagement (Hernandez & Guarana, 2018) Work engagement (Schaufeli & Salanova, 2011) Staff engagement ((Bailey et al., 2017) Organisation engagement (Bailey et al., 2017) Personal engagement (Bailey et al., 2017) Psychological engagement (Bailey et al., 2017) Burnout (Antonym) (Maslach et al., 2001)
Reaction	A response to some treatment, situation, or stimulus (Merriam-Webster, 2019)	Response (Paterson & Härtel, 2016)
Mechanism	Definition	Proxies
Contagion	The process in which a person or group influences the emotions or behavior of another person or group through the conscious or unconscious induction of emotion states and behavioral attitudes (Schoenewolf, 1990)	Social contagion (Hartman & Johnson, 1989) Emotional contagion (Schoenewolf, 1990) Cognitive contagion (Barsade, 2002)
Resilience	The demonstration of positive adaptation in the face of significant adversity (Britt et al., 2016)	Flexibility (Youssef & Luthans, 2007) Bounce back (West et al., 2009) Workplace resilience (King, Newman & Luthans, 2016) Organisational resilience (King, Newman & Luthans, 2016) (Positive) Adaptation (Britt et al., 2016) Coping (Fletcher & Sarkar, 2013)

Table 1 (continued)		
Anchor & Adjustment	The process in which a discrepancy between the desired state and actual state gets mitigated but only to a certain extent since the desired state fluctuates to reduce cognitive dissonance (Stermann, 2000)	Adjusting Altering baseline Change in baseline Cognitive adaptation (Taylor, 1983)

As a result, four search strings were used to identify specific articles dealing with their respective interaction. That is, Merger-Engagement and Merger-Reaction in Stream I and Downsizing-Engagement and Downsizing-Reaction in Stream II.

Furthermore, some adjustments were made in the search commands necessary to keep the number of items manageable for analysis. I decided to filter results regarding document type (*articles* as opposed to proceeding papers and meeting abstracts), publication type (academic journals, peer-reviewed as opposed to magazines) and category (for Web of Science the categories Management; Behavioural Science; Business; Psychology, Applied; Psychology, Social; for Business Source Complete see Excel file 'MT – M&A Success Review Workbook, tab BSC' due to the large number of categories). Search blocks including the Loops (I, II and II) generated few articles, possibly due to not being directly linked to engagement. Therefore, additional searches were conducted not in junction with engagement, but as single blocks targeting only one mechanism through search engine searches.

In addition to blocks searches as search strategy, it is common to make use of *reference searches* (also called bibliography searches) when discovering articles containing abundant and valuable information regarding the concept which were not found via electronic searches (e.g. Simpson, 2009; Datta et al., 2010; Shi et al., 2012). This was done during the block search process and even in the review stage to improve inclusivity. To ensure transparency these bibliography citations were documented in the review workbook. Third, articles were found via citation tracking in Web of Science by searching for articles that cited initially found articles through the block searches or bibliography searches.

Finally, in order to mitigate the risk missing recent and valuable articles from top journals due to the formulation of the search strings, I decided to additionally scrutinize the top applied psychology journals: *The Journal of Applied Psychology*, *Personnel Psychology*, *Annual Review of Organizational Psychology and Organizational Behavior*, *Industrial and Organizational Psychology*, *Applied Psychology*, *Journal of Organizational Behavior*, *Human Resource Management Review*, *Journal of Occupational Health Psychology*, *International Journal of Human Resource Management* (Scimago Journal Ranking, 2019) and top management journals: *Journal of Management*, *Academy of Management Review*, *Academy of Management Journal*, *Administrative Science Quarterly*, *Strategic Management Journal* (Inomics, 2018). That is, I searched for articles from 2014-present within the journals to make sure the latest relevant insights and knowledge regarding engagement, mergers, downsizing and the three mechanisms were taken into account.

Article selection criteria

Once the dataset was accumulated through running the searches the articles were assessed according to the inclusion and exclusion criteria (Tranfield et al., 2003). Generally, most reviewers categorize their criteria according to the following categories, although not all need to be addressed: (a) study population, (b) nature of the intervention (i.e. the complication or triggers that manipulates the study population), (c) outcome variables (i.e. what kind of answers need to be given), (d) time period, (e) cultural and linguistic range, and (f) methodological quality (Meline, 2006).

In line with this categorization this research used the following inclusion criteria articles: for the study population (a), employees were the focus of the review, where no discrimination was made between age, sex, cultural background or educational attainment. In addition, this literature review considered employees from both the acquired and acquiring company, since most studies did not differentiate between the two groups of employees when conducting surveys. Second, the nature of the intervention (b) was the occurrence of either a merger, downsizing or both, affecting the employees work life. Only exceptions were made where causal links within the three mechanisms were described outside the occurrence of one of the interventions. Third, the outcome variables (c) of the articles needed provide evidence for (non)existence of relationships between the proposed causal relationships (linkages of the constructs) and how they function. For instance, articles describing effects which reflected symptoms or evidence of increased contagion due to decreased engagement or why contagion decreases engagement, fell within the scope. Next, the time period (d) consisted of articles from 1990-present, since research in ‘employee engagement’ started to occur mostly after the recognition of the construct around 1990 in the key article of Kahn (1990) (cf. Saks & Gruman, 2014; Bailey et al., 2017). For the linguistic range only English written articles were included to ensure the reviewers capability to understand and effectively use the articles and to limit the practical difficulties with multiple languages (Meline, 2006). Finally, regarding methodological screening (f), the review limited itself only to journal articles (peer-reviewed) since the model needed to be grounded on theoretical valid contributions (Fisch & Block, 2018).

Finally, articles needed to discuss (one of) the key constructs of the review in the title, abstract and keywords (Boolean phrase, English, limited to peer-reviewed work in academic journals). Additionally, the research required that the key constructs merger, downsizing and employee engagement to be dealt with in an essential way, therefore eliminating articles that mention (one of) these constructs but fail to explain or use the concepts (Foss & Saebi, 2017). More specifically, I screened for mergers and downsizing articles that adopted a human or employee perspective as additional relevance criterion (Shi et al., 2012).

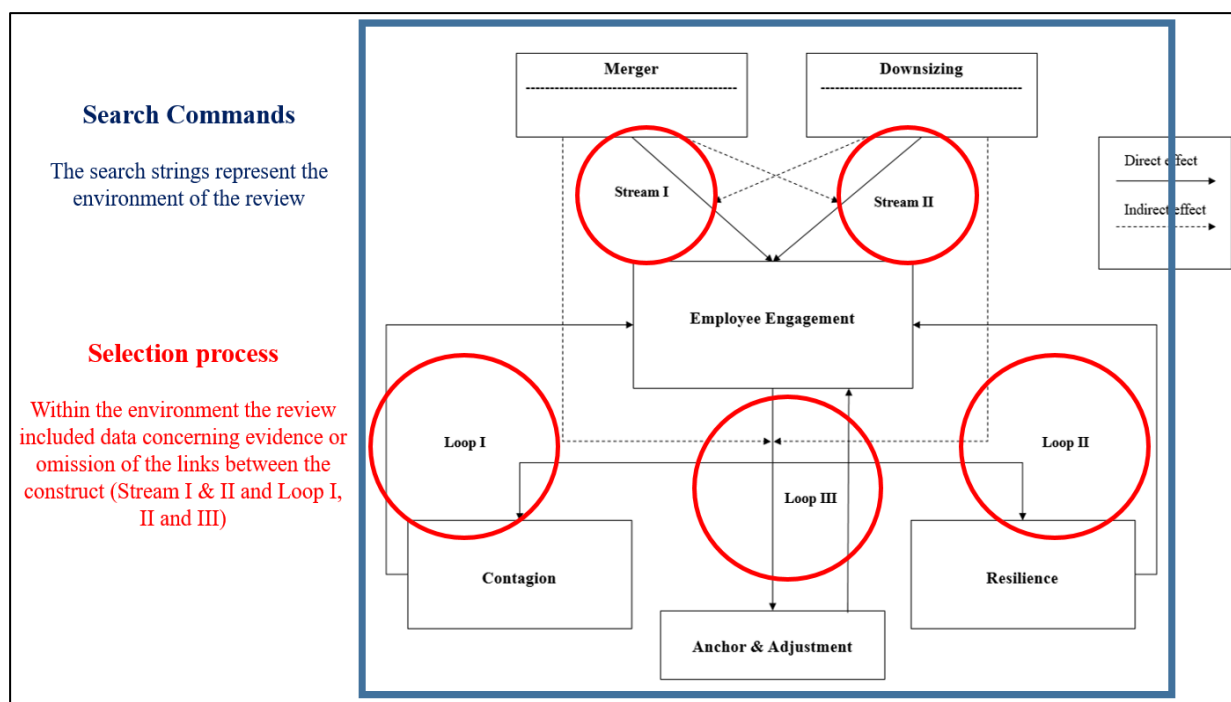


Figure 3. Search strategy

2.2.3 Conducting the Review

Pilot searches

The use of pilot searches was intended to explore the results in terms of content and number of items found, to fine-tune certain filters and search strings and to yield myself against an excess of articles (Bailey et al., 2017). This led to the discovery of important adjustment needed to keep the number of articles manageable, while retaining as many relevant articles as possible. As a result, numerous iterations were made. For instance, when the block ‘merger’ was constructed (including the filters) it generated over more than 8,837 items. However, the results showed an excess of articles dealing with the acquisition of any kind of resource (such as knowledge acquisition, information acquisition, power acquisition and real-estate acquisition), articles dealing with other kinds of merger (such as merger of bacteria, merger of business units and the merger of art influences). To tackle this issue, category filters were added to keep the range of the merger block within scope of the mergers and acquisitions of companies. This reduced the number of articles significantly to 605 articles. This procedure was done for all blocks (see list of categories in the Review Workbook). Additionally, as mentioned earlier, due to the fairly limited number of articles derived from the initial search I decided to add two strings related to ‘reactions’ of employees towards mergers and downsizing to increase the search scope. Furthermore, other terms (e.g. post-merger integration, but also the mechanisms themselves: contagion, resilience and anchor & adjustment) were used in the pilot. Interestingly, however, they did not provide articles dealing with the proposed causal relationships other than already found through the original searches. To that

end, I performed a second wave search to target the key constructs of the mechanisms via the search engine Google Scholar (as mentioned earlier), where the articles were directly added to the review analysis (see Analysis Workbook).

Identification of research and selection of studies

The systematic search took place July 2019, producing 764 items from Web of Science and 1467 items from Business Source Complete, a total of 2259 items (filters included). All citations were copied to the bibliographic software EndNote X9, after which the duplicates, both internal (i.e. within the same database) and external (i.e. between the databases) were removed from the dataset. This resulted in the identification of 190 duplicates which were then merged, bringing the total amount to 2069. Next, the first screening consisted of thorough title and abstracts analysis regarding the relevance of the articles based on the assessment criteria. This yielded an amount of 1919 articles which were not relevant according to the criteria. These were articles, for instance, dealing with the role of external stakeholders during mergers or downsizing, the relationship between managers and employees during downsizing and cultural aspects of mergers. Consequently, 150 articles remained for full-text review.

In the second screening, the remaining articles were fully reviewed (i.e. full text analysis) based on the assessment criteria. This process yielded over 103 exclusions, most articles not dealing with the key constructs of the research. bringing the total amount to 47 articles for the review (Figure. 4).

Data extraction

To effectively evaluate the data, the next step was to develop a coding scheme to categorize the information in the documents to a useful format based on the research outcomes, which is the focus of the thesis (Cooper, 1988). The process of coding is iterative, meaning that the coding scheme may be altered multiple times because, for instance, difficulties arise during the application of the coding scheme (Randolph, 2009).

First, all the articles obtained from the databases were classified by concept, an approach frequently advised by other scholars (Fisch & Block, 2018). This concept-centric approach gave an overview of the quantity of articles per stream and helped in logically and conceptually sound reasoning (Randolph, 2009; Fisch & Block, 2018). Thus, either articles were part of the merger literature, part of the downsizing literature, or dealt with the mechanisms outside the context of mergers and downsizing (these were labelled relevant for both merger and downsizing literature). Second, within a stream each article was analysed and coded according to the developed codes for this research (see provided Excel-document). The coding was done using the reference management software Mendeley™. Each code referred to a specific position in the causal linkages of the constructs, thereby precisely targeting the

area in the model. For instance, the code #MEC refers to information about the **M**erger-**E**ngagement context focusing on the **C**ontagion mechanism (i.e. loop I) and the code #DE refers to information regarding **D**ownsizing-**E**ngagement, thus the effect of downsizing on engagement (i.e. stream II). If an article discussed the relationship between engagement and contagion without mentioning mergers or downsizing, the data would be labelled #MEC ‘and’ #DEC as it could be applicable in both cases.

Finally, after coding all articles the articles were grouped and categorized according to their code, resulting in multiple tables depicting the study (name of authors), the sample, the type of finding (label) and the content of the finding (cf. Datta et al., 2010). If an article contained multiple codes (which was common), they were put in each relevant table to keep a clear and complete overview of the findings per concept.

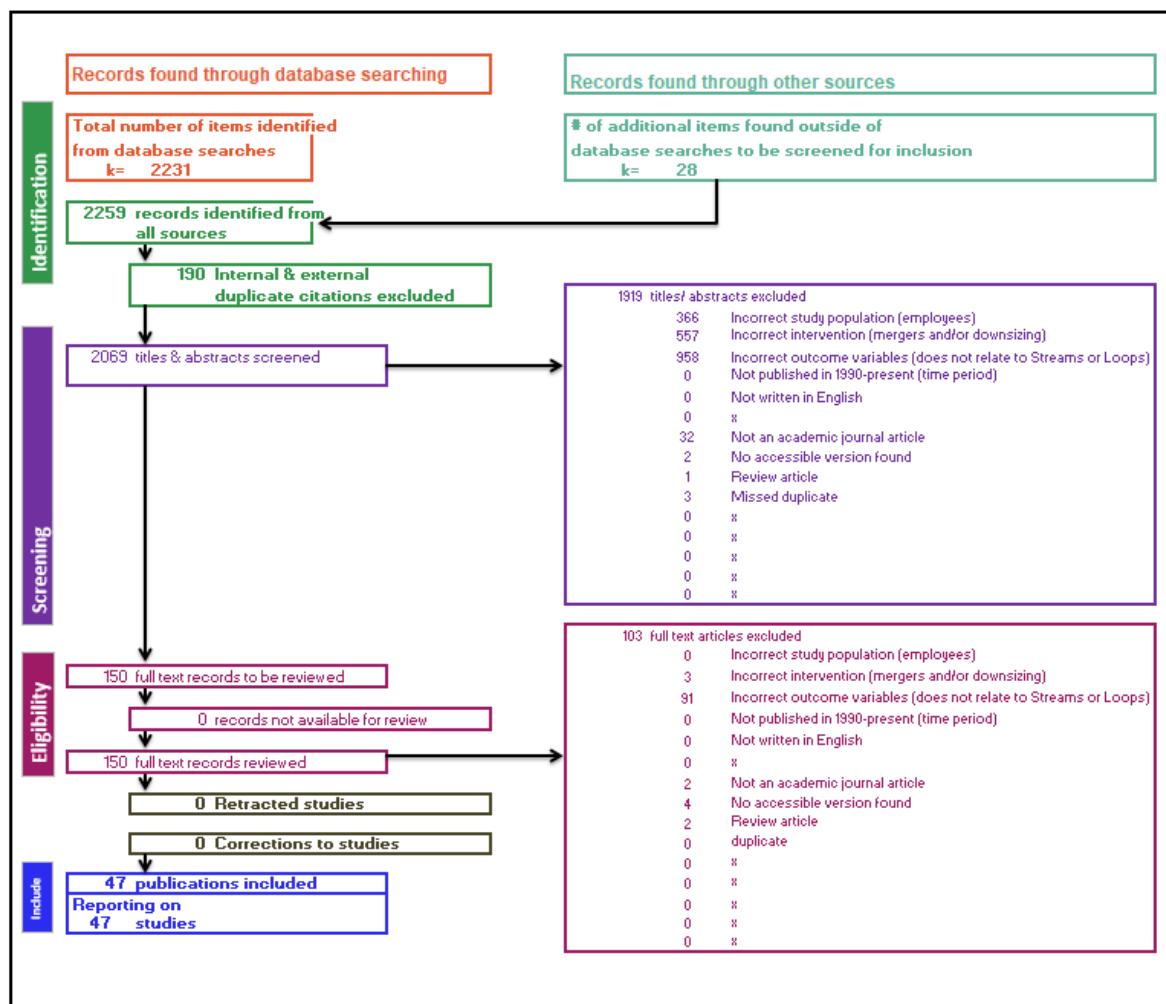


Figure 4. PRISMA flowchart

3. A Causal Model of Employee Engagement

General observations

Most studies falling within the scope of the review were targeted around the stream of downsizing ($N = 12$), the process of contagion ($N = 11$) and the stream of merger ($N = 11$). Interestingly, both for mergers and downsizing in relationship with engagement there were few studies directly reporting on their relationship. Most literature discussing employee engagement studied the construct in static, non-transformative contexts, which made analysis regarding engagement in the merger and downsizing context (i.e. transformative context) more difficult. In the case of mergers, this might be due to the reason the mergers are generally surrounded by confidentiality, not letting scholars study the process (Harwood, 2006). Thus, the management field appears to be lacking in knowledge about engagement during mergers. Also, no articles dealt with the anchor & adjustment mechanism specifically related to engagement. As it seems, little research has been focused on baseline levels of psychological constructs such as engagement. Fortunately, the aim of this study was to provide arguments for causality through theory-based reasoning and inductive data-interpretation. Thus, with an exploratory perspective related constructs were analysed as to provide some validation of causality. In the remainder of this section I discuss, for each stream and loop, the reviewed articles, synthesize the accumulated evidence and discuss its implications for modelling the causalities.

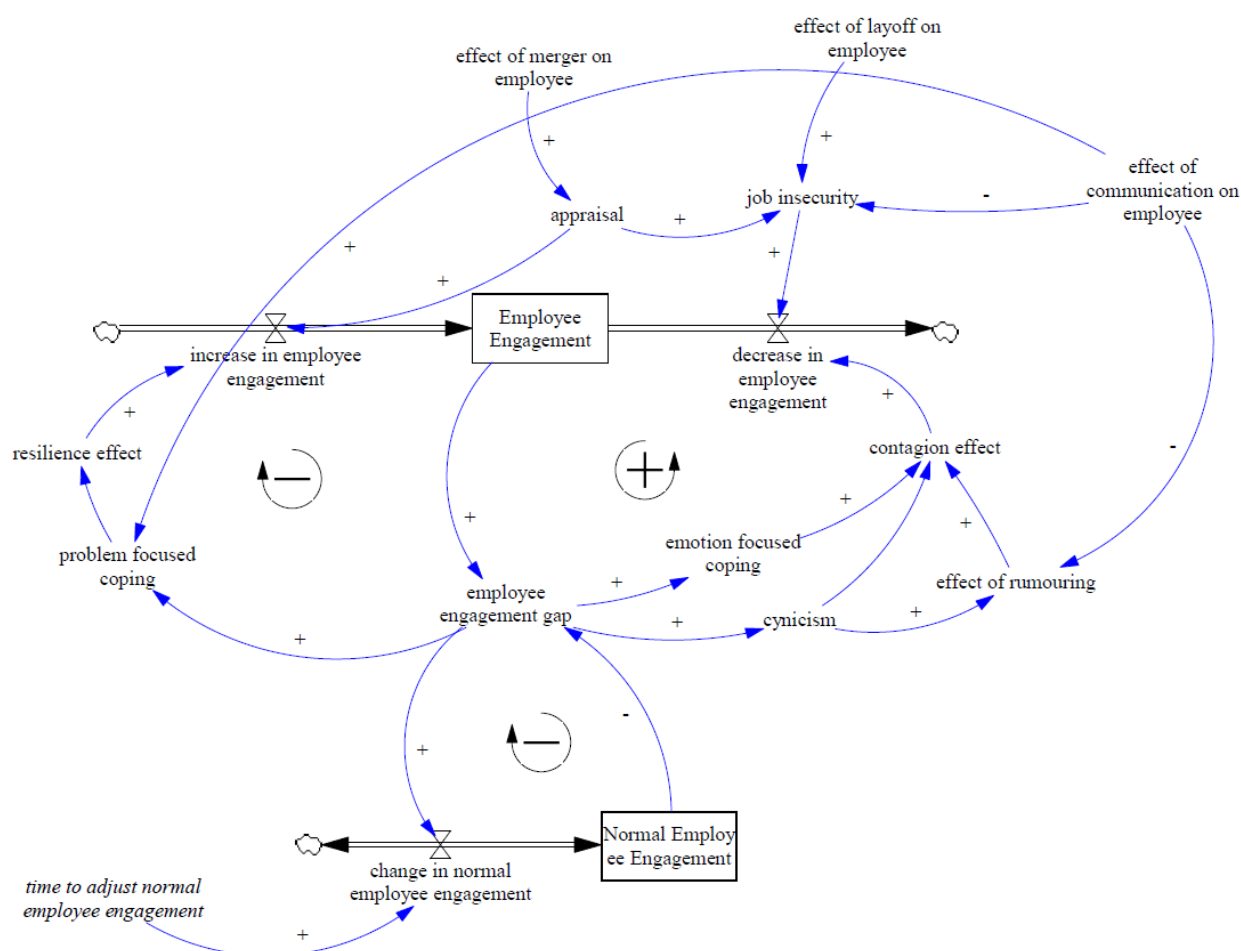
Stream I – The Effect of Merger on Employee engagement

One case study reported decreased engagement after the occurrence of a merger (Magano & Thomas, 2017). A selection of employees from a pharmaceutical company were interviewed to gauge their work experience since the merger. The employees reported an absence in engagement since the merger. As an employee stated (Magano & Thomas, 2017):

“After the mergers and acquisitions, the anxiety grew especially as the processes unfolded and the organisation started getting big. The realities of the mergers were realised when the organisation started retrenching staff ... People became disengaged, morale was affected” (p. 6).

A study conducted by Febriani and Yancey (2019) focused on the mode of the merger in relation to, *inter alia*, engagement. They described four different integration modes and tested them during a merger, where they found that the more pervasive the integration was (i.e. from being managed as separate entities to full integration of both cultures and companies) the greater the decrease in engagement was.

Figure 5
A Causal model of Employee Engagement
When Merging and Downsizing



Negative psychological responses

Most studies considering the consequences of mergers related to one important reaction of employees: uncertainty, resulting in anxiety ($N = 5$). Some observed reactions were the preoccupation of employees with uncertainty regarding the organization's future structure, governance model (who will they report to), unfamiliar communication patterns and the impact on their salary and benefits (Bligh & Carsten, 2005). In line with anxiety theory (Seo & Hill, 2005), uncertainty creates anxiety. Fostering the anxiety is the uncertainty of the situations where employees ask themselves "What is going to happen with us" and "Does our company have a future?" (Teerikangas, 2012). A study of a merger between two airlines found that the most frequent psychological state coming from such a change was uncertainty (Terry &

Jimmieson, 2003). Employees associated the discontinues organizational change with the possibility of mass redundancies due to new organizational structures, which terrified them (Sinkovics, Zagelmeyer, & Kusstatscher, 2011; Sung et al., 2017). The stress and anxiety for redundancies was not only a general worry (i.e. the future of the company) but, obviously, more of a personal worry for possibly losing their jobs (Magano & Thomas, 2017). Even if downsizing was not mentioned during the merger, these downsizing concerns would still exist increasing the experienced stress (Jordan, Ashkanasy, & Hartel, 2002).

Stress has, more interestingly, been linked to (dimensions of) engagement and job demands. Bakker and Demerouti (2007) found that, as stress and anxiety increases, job demands would also significantly increase thereby most likely negatively impacting engagement (Bakker & Demerouti, 2007). Anthony-Mcman et al. (2017) found that increased stress reduced the focus or absorption of employees while working. As absorption (i.e. the cognitive dimension, one of the three core dimensions of engagement) decreased, logically, the engagement would also take a hit. In addition, stress resulted also in distractions from work (Brockner, Grover, Reed, & Dewitt, 1992; Jordan, Ashkanasy, & Hartel, 2002) thereby hindering absorption in one's tasks.

Positive Psychological Responses

Where most finding relate to the negative effects of mergers, some articles mentioned the positive effects mergers have on its employees. Two studies highlight the fact that some employees respond more positively to mergers when perceived as opportunities rather than threats (Teerikangas, 2012; Raitis, Harikkala-Laihin, Hassett, & Nummela, 2017). The latter study explains, for instance, that employees become happier and more optimistic because they see the mergers as providing them with new personal and organizational opportunities. Likewise, Xanthopoulou (2009) illustrated that optimism is positively related to engagement. Consequently, Balducci et al. (2011) provided support for the link between promotion prospects (as job resource) and increased engagement.

Role of Communication

Where job uncertainty and anxiety originating from the merger seems to be to primary cause of decreased engagement, the role of communication comes into play. When organizations use communications during the merger process they reduce the uncertainty among employees (Allatta & Singh, 2011). However, in line with the findings of Angwin et al. (2016) reduction of uncertainty does depend on the effectiveness of the communications, where effectiveness is measured by frequency and richness (i.e. the content) of the communications.

Table 2
Stream I: Impact of Merger on Employee Engagement

Study (and Loop)	Sample	Type of Finding	Findings
Febriani & Yancey (2019)	101 employees, a merger of two mining companies, with two different integration approaches used for different business units	Parameters	Employees who underwent transformational approach (most pervasive from) experienced greater decrease in engagement.
Magano & Thomas (2017)	12 employees selected for interviews in a case study of a pharmaceutical company involved in multiple mergers in the last 6 years	Engagement	9 of the participants mentioned the absence of engagement after the mergers, 6 of the participants mentioned increased anxiety and stress due to uncertainty, job-insecurity
Terry & Jimmieson (2003)	Study 1: a merger between two airlines (487 employees)	Uncertainty	The most frequent psychological state resulting from organisational change is uncertainty.
Sinkovics, Zagelmeyer, & Kusstatscher (2011)	18 employees were selected for interviews regarding four cross-border M&A cases.	Uncertainty	Employees frequently associated the announcement of M&As with 'mass redundancies', where managers state that: 'When employees hear about an acquisition they usually associate it with dismissals. Employees are completely frightened by that'
Anthony-Mcmanan et al. (2017)	472 employees (IT-professionals) working in different hospitals participated in the survey regarding stress and engagement	The role of work-induced stress on absorption	The study focused on the relationship between engagement and work stress and burnout. One of the findings suggests that, as predicted, an employee's focus or absorption at work (dimensions of engagement) may be hindered by workplace stress.
Angwin et al. (2016)	Using data drawn from a single clearly defined M&A wave in the Nigerian banking sector	Communications	Reduction of uncertainty depend on the effectiveness of the communications (frequency and richness) with each being higher results in lower uncertainty
Hubbard & Purcell (2001)	Two potential acquisition target case studies	Communication	Frequent communication reduced stress
Sung et al. (2017)	Data from 599 employees experiencing a major corporate merger in the US	Uncertainty	job security relates to how employees perceive their social exchange relationship with the organization and therefore affect organizational attachment.
Bakker & Demerouti (2007)	Derived from their JD-R model	Anxiety	As anxiety increases (job demand) engagement decreases as well
Brockner et al (1992)	Survey among 579 small retail stores in the US	Job insecurity and anxiety	Job insecurity, stress and anxiety results in being more distracted at work
Balducci et al. (2011)	A sample of 818 public-sector employees	Promotion prospects	For the JD-R model, promotion prospects function as job resource and increase engagement

Companies deploying communication strategies with high levels of richness see a significant decrease in employee uncertainty regarding their jobs (Zhu et al., 2004; Weber et al., 2014; Angwin et al., 2016). The fact that companies take the time to provide clear explanations for why the merger took place helps employees understand the reason for the merger as well as helps them through the process of change (Angwin et al., 2016). In addition to richness, the frequency of communicating information regarding the merger also impacts the level of uncertainty (Hubbard & Purcell, 2001), with more

frequent communications resulting in less job insecurity among employees (Schweiger & DeNisi, 1991). In the study of Angwin et al. (2016) it was found that high richness and high frequency in communications (termed ‘the *immersive* approach’) resulted in better coping with the adverse effects.

Synthesis

Taken together, the impact of a merger will most likely decrease employee engagement. This is not a direct effect, however, but happens due to the job insecurity and related anxiety that comes with it. This nuance is important for the model, because the literature amply describes the importance of communications and its relationships with anxiety, not engagement directly. Thus, adding anxiety in the model allows the take into account the communication strategy of the company (high/low frequency and high/low richness) which has a negative association with anxiety, meaning: the more and better the communications are, the lower the anxiety will be. Finally, the job insecurity and anxiety leaves the employee with worry and less absorption in its tasks. As a result, the employees become less engaged in their work and more preoccupied with dealing with the worries, experienced through increased job demands (Figure. 6).

Conversely, literature also explains that some employees do experience positive feelings such as optimism due to new possibilities for career prospects. The fact that both these reactions exist has to do with the appraisal of the event. According to appraisal theory (Lazarus, 1991) the reaction towards an event will depend on the sense-making of the individual experiencing the event. In this case, it either perceives the merger as a threat (thus inducing job insecurity and anxiety) or as an opportunity (new career prospects and optimism for something new). To that end, the model will make a distinction where, depending on the appraisal, it either increases the job insecurity felt or it increases the engagement due to higher feelings of optimism. Still, due to the nature of mergers, being dramatic and disruptive, these events are more likely to create negative reactions within the organization and the possibility of deeper attitudinal and behavioural change among employees (Grunberg et al., 2008).

Stream II – The Effect of Downsizing on Employee engagement

Job demands

As with merger, most studies in this stream reported that downsizing strongly induced job insecurity ($N = 4$). Grunberg et al. (2008) found in a study among surviving employees from multiple organizations who recently underwent downsizing demonstrated increased job insecurity. Subsequently, higher job insecurity was associated with multiple negative attitudes.

Table 3
Stream II: Impact of Downsizing on Employee Engagement

Study	Sample	Type of Finding	Findings
Grunberg, Moore, Greenberg & Sikora (2008)	A Longitudinal study focused on 525 employees who experienced multiple downsizing events. T1= baseline, T2= 3 years later, T3= 6 years later and T4= 8 years later	Anxiety and uncertainty	These multiple changes created anxiety and uncertainty among them and, as we saw, produced deterioration in many of their attitudes to their work and to the organization.
Cuyper, Witte, Van der Elst, & Handaja (2010)	122 employees from an Belgium company who recently announced its intention to downsize	Job insecurity and engagement (vigour)	The study found that job insecurity is positively associated with strain, where strain is measured with the positive pole 'vigour' and negative pole 'emotional exhaustion'.
Cotter & Fouad (2013)	The sample consisted of 203 employees who survived the downsizing	Job insecurity and cynicism	Job insecurity in positively related to the exhaustion and cynicism forms of burnout.
Vedina & Dolan (2014)	Cross-sectional survey in different Spanish companies which had recently implemented a downsizing	Anxiety and burnout (opposite of engagement)	One-time layoffs, besides being the most frequent type of organizational restructuring and change, have the strongest negative impact on employees' burnout, anxiety, and depression.
Harney, Fu, & Freeney (2018)	A sample of 5510 employees representative for the Republic of Ireland in 2009, who were part of restructuring and downsizing in their company.	Downsizing and resources	Following the logic of the JD-R model, our findings evidence that employee experiences of restructuring and downsizing directly deplete the well-being
Bankins (2015)	A mixed methodology, with a four-wave longitudinal survey (n = 107 graduate newcomers) and qualitative interviews (n = 26 graduate newcomers)	Psychological contract violation	Violating the contract results in withdrawal, but also initiates coping activities to reassess the contract (reciprocity)
Gakovic & Tetrick (2003)	Employees (N = 161) from a large financial corporation completed questionnaires assessing work-related attitudes and behaviors.	Psychological contract violation	The results suggest that psychological contract breach contributes to employee experience of job strain (i.e. the opposite of vigor)
Shoss, Jiang & Probst (2016)	Two studies: the first cross-sectional design study consisted of 1071 employees working at a university which recently underwent restructuring and downsizing. The second study used a representative working population sample of the United States (617 employees), coming from the Bureau of Labour Statistics.	Job insecurity and emotional exhaustion and cynicism	Job insecurity was positively associated with emotional exhaustion and cynicism.
DeMeuse, et al. (2004)	Data from Forbes annual survey among employees of 500 largest US Corporations	Downsizing and psychological contract	The suggestion that layoffs often result in violation of psychological contracts
Rayton and Yalabik (2014)	Longitudinal survey data from 191 employees	Psychological contract violation	Violations are reciprocated by lowering work engagement
Alfes et al. (2013)	Data from 297 employees in a service sector organisation in the UK	Psychological contract violation	Reciprocity for how organizations treat employees
Angwin et al. (2016)	Using data drawn from a single clearly defined M&A wave in the Nigerian banking sector	Communications	Reduction of uncertainty depend on the effectiveness of the communications (frequency and richness) with each being higher results in lower uncertainty

and employees (Rousseau & Tijoriwala, 1998). As a result of these breaches or ‘violations’, employees will continuously reevaluate and renegotiate their contracts (Pate et al., 2000; Shield et al., 2002; Sels et al., 2004). When translating the theory to a situation of downsizing, the theory would define the contract as the employee’s expectation that efforts and contributions at work will be reciprocated by the employer though ensuring a stable and positive work environment (Datta et al., 2010). The contract is based on trust and the implicit agreement that “employees are expected to do a ‘fair day’s work’ and receive a ‘fair day’s pay’” (Datta & Basuil, 2015, p. 201). Since downsizing does the exact opposite - creates an unstable and mostly unpleasant work environment – the initiative is often experienced as a breach of contract by the employees (De Meuse et al., 2004). Consequently, Rayton and Yalabik (2014) as well as Alfes et al. (2013) found that a breach of this ‘implicit’ contract is reciprocated by employees decreasing their engagement. Bankins (2015) linked the violation of contract with withdrawal behaviour as compensation. She demonstrated that the downsizing event triggered a revaluation of contract and the consequential employment of copings strategies to adapt and respond to the discrepancies. Gakovic & Tetrick (2003) also found evidence for the association between the failure of the organization to meet its ‘implicit’ obligations and emotional exhaustion of employees.

In the context of downsizing, communication also seems to be important to reduce negative reactions of surviving employees. Angwin et al. (2016) pointed out that reducing the number of employees (i.e. *downsizing*) also increases job insecurity when no frequent, timely and clear explanation is given to reassure the employees. The importance of the communication strategy and the experience of the downsizing process have been acknowledged.

Synthesis

Interestingly, there seem to be two different processes through which the employee lets the downsizing initiative impact its well-being. The first process I would describe as the *passive* response to downsizing. As with the impact of the merger, downsizing increase the levels of job insecurity and related anxiety. Especially since worries originating from the earlier merger are now confirmed, employees realize that the possibility becomes realistic for them to lose their jobs. This refers to JD-R theory, where increased uncertainty and anxiety (i.e. demands) deplete the level of engagement. The second process refers to the reciprocity between the organization and the employees. Here, employees react more *actively* to the downsizing by lowering its efforts since the organization apparently does the same. In line with psychological contract theory, the violations influences employees to withdrawal, feel more emotional exhaustion and decrease engagement. Where these two theories describe distinct processes, in terms of causality, they both acknowledge the negative impact of the layoffs on the engagement of employees. Therefore, the model will incorporate a negative effect of layoffs on engagement.

Additionally, the review revealed that communication also plays a role for the perception of the downsizing by employees. The feeling of possibly losing the job already exists, but the extent to which employees are timely and well informed regarding the process of the downsizing does buffer the effect of the layoffs on their anxiety levels. Where communications serve to reduce anxiety (related to the *passive* response) it also functions as mean to give explanation for the downsizing which could decrease the reciprocal behaviour of employees (the *active* response). The effectiveness of the communications performed by the organization does, however, depend on the frequency and the richness of the communication. To that end, both dimensions will be included in the model to formulate the effect of communication on the anxiety (Figure. 7)

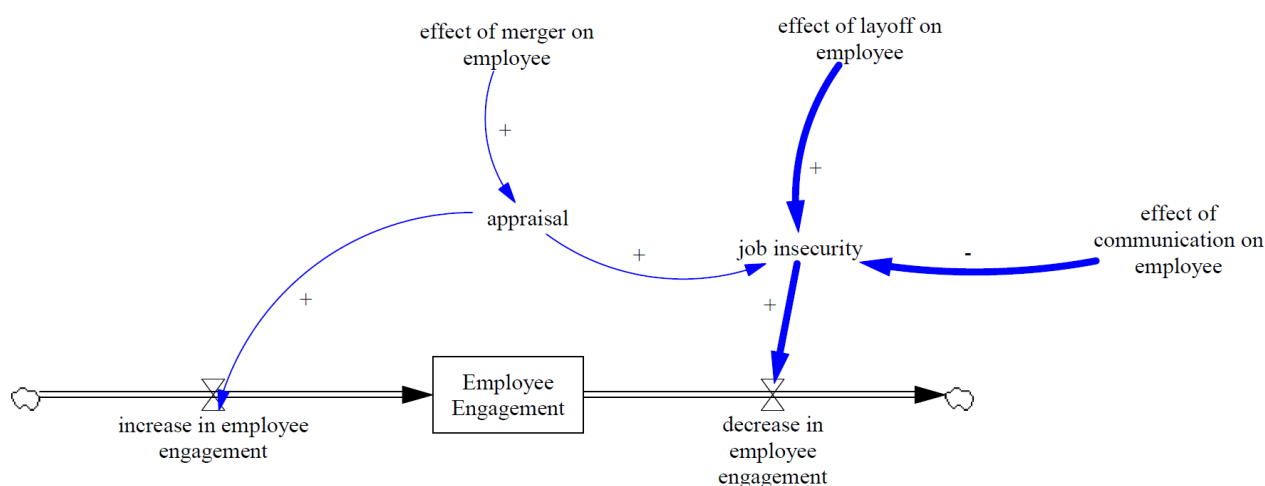


Figure 7. The effect of downsizing

Loop I – The Contagion loop

When the engagement of employees drop, employees will initiate a contagion effect through which the decreased engagement will infect fellow employees thereby decreasing their engagement in turn. The systematic review found evidence in different areas of social psychology and human resource management literature on how the contagion loop affects engagement: namely by the display of multiple negative attitudes and behaviours as a consequence of lower engagement.

There were few studies who captured the occurrence of contagion in direct relationship with (dimensions of) engagement. Bakker et al. (2005) was one of the first to discover that feelings of vigor and dedication could actually influence other people. Later, Bakker and Xanthopoulou (2009) illustrated again that engagement crosses from one employee to another when communicating. They found that by frequent interactions through nearly all communication channels available for employees (e.g. face to

face talks, e-mails or phone calls) engagement crossed over between employees. Additionally, the crossover of vigour has also been acknowledged by Westman et al. (2009).

Going more into depth regarding how employees infect each other, however, rumouring (i.e. gossip) seems to be one of the main channels of contagion in both merger and downsizing context. The study of Sinkovics, Zagelmeyer and Kusstatscher (2011) focused on the role of employees' emotions in four cross-border mergers. In their study they discovered that employees who felt worried and frustrated would engage in longer coffee breaks and conversations with co-workers, through which the amount of rumouring increased.

“(…) Yes, employees talk a lot about it [the dismissals] - at the coffee machine, on the phone, during lunchtime” (p. 41).

Likewise, looking back at psychologic contract theory, Kuo et al. (2015) illustrated that a violation of the contract induces job-related rumouring. They found that the more employees perceived their implicit contract to be violated, the more they engaged in rumouring.

Two forms of contagion

Interestingly, the above acknowledges the existence of the crossover of engagement and the existence of an contagious environment. It does not, however, describe the process through which decreased engagement spreads across the organization. Two different processes could explain the contagion: *affective* contagion and *attitudinal* contagion.

In regard to the lower spectrum of engagement – burnout – when employees express their burnout symptoms they apparently (un)intentionally transfer these symptoms when interacting in both formal and informal settings (Bakker, Emmerik & Van Euwema, 2006). Conversely, the study of Bakker et al. (2006) also demonstrated to same effect of displaying engagement symptoms (e.g. positive attitudes). This means that, depending on the level of engagement (may it be more towards burnout or more towards engagement) the display of *attitudes* will always influence colleagues. A more specific burnout symptom frequently observed in downsizing is employees displaying cynicism. Two studies performed by Byrne and Hochwarter (2008) found that cynicism-manifested reactions or behaviour included ‘badmouthing the company’ to others. The study of Kuo et al. (2015), mentioned earlier, also revealed that the rumouring also mediates the relationship between psychological contract breach and employee cynicism. In other words, violation does not only increases gossip, but also initiates cynicism via gossip. They try to explain this phenomena by suggesting that the effects of the violation may additionally be felt ‘outside’ of work. However, it seems in line with this current research that the reinforcing effect of the contagion is the reason why they observed mediation through rumouring. They excluded the fact that this is not a unidirectional contagion but a circular contagion: the gossip was a

consequence of cynicism which was caused by violation of the contract. Thus, contagion would decrease engagement (i.e. *increase* the level of cynicism).

Affective contagion, that is, the crossover of emotions, also plays a role in the diffusion of decreased engagement in an organization. Returning to the role of anxiety, one study reported that when anxiety increases due to a merger it can motivate employees to find support with colleagues, what presumably would ‘ease the pain’ (Terry & Jimmieson, 2003). However, Terry and Jimmieson (2003) also found that talking with fellow employees can heighten the threat appraisal due to anxiety provoked through social interaction.

An important link was found not only regarding the communication of the company and the perceived anxiety, but also regarding the communication and the level of rumouring. Angwin et al. (2016) found that where communication was low, the amount of rumouring increased. They explained this relationship by proposing that a perceived deficiency of information regarding merger process triggers a dysfunctional rumour mill to fill an information vacuum (McClurg, 2002; Angwin et al., 2016). As it turns out, not only do employees engage in talks about the merger or downsizing to deal with their personal worries, the frequent interactions between employees is also driven by the will to seek information.

Reversed relationship

Once the negative attitudes of employees ‘infect’ fellow employees (thus, contagion occurring), through a series of dyadic or group-level infections the contagion loop closes due to the infection returning to the employee at hand. Evidence for this argumentation was, *inter alia*, put forward by Byrne and Hochwarter (2008). They spoke of a downward spiral of cynicism, a trend which was linked to the continued disengagement of employees. Once the engagement of fellow employees decreased, the engagement of the individual in turn decreased due to the individual-level engagement being influenced by group-level engagement (Griffin, 2015). The contagion literature itself provides evidence why contagion is not a one-way-street. Contagion does not only occur in a dyadic relationship (i.e. from employee A to employee B) but also at group-level (i.e. from group 1 consisting of employees A, B and C to group two consisting of employee D, E and F, etc., Felps, Mitchell & Byington, 2006). Thus, when employee A infects employee B, through a series of ‘infections’ employee H in turn can interact with employee A and further decrease A’s engagement. In other words, the colleagues in the direct environment of an employee significantly influence the behaviour of that same employee, even in a later stage. Where this is the case for *attitudinal* contagion (Byrne & Hochwarter, 2008), Felps et al. (2006) also provided evidence for situations where emotions of individuals influence emotions of groups (affective contagion), which could spiral and further perpetuate through the group.

Table 4
Loop I: The Contagion Mechanism

Study	Sample	Type of Finding	Findings
Byrne & Hochwarter (2008)	Two studies conducted, with 1,256 employees in study 1 and 2,143 employees in study 2. On the behaviour of cynicism	Cynicism, Rumouring and Contagion	For many employees downward spirals of cynicism exist, and this trend manifested by continued disengagement and distrust affects a myriad of work outcomes. Cynicism manifested behaviour includes 'badmouthing' the company to others.
Sinkovics, Zagelmeyer, & Kusstatscher (2011)	18 employees were selected for interviews regarding four cross-border M&A cases.	Rumouring during M&A and Contagion	Information related to M&A processes, whether rumours among colleagues or the official announcement, can trigger such processes (<i>emotions received from the environment. red.</i>) leading to emotional responses In order to come to terms with emotions, worrying and frustrated employees seem to require long coffee breaks and conversations with their colleagues, and rumours increase.
Bakker, Emmerik & Van Euwema (2006)	2,229 employees working in 85 teams surveyed regarding (change) in work engagement	Burnout and engagement contagion	The study provides evidence for the crossover of burnout and work engagement. Burnout symptoms expressed by colleagues may transfer to individual employees when they socialize with one another on the job or in informal meetings. The presumed antipode of burnout, work engagement, may also crossover within work teams
Terry & Jimmieson (2003)	Study 1: A merger between two airlines (487 employees)	Contagion Mechanism	Colleague support (interaction between employees) can increase uncertainty through heightened threat appraisals. Consequently, this results in maladaptive coping responses because of the anxiety
Angwin et al. (2016)	Using data drawn from a single clearly defined M&A wave in the Nigerian banking sector	Communication and rumouring	Where the amount of communication is low, rumouring tends to increase
Griffin (2015)	A national employee opinion survey in Australia and New Zealand, with 46,546 employees from different organizations.	Contagion Mechanism	The findings show that the collective behaviour of work groups (group-level engagement) affect individual behaviour, (individual-level engagement)
Kuo et al. (2015)	The study analysed survey data in a two-stage process, from 362 employees across a range of industries in Taiwan	Rumouring and Cynicism	Psychological contract violations predicted rumouring, where the amount of rumouring predicted the cynicism
Bakker et al. (2005)	Data were collected among 323 couples working in a variety of occupations	Contagion of burnout and engagement	The study found evidence for the crossover (i.e. contagion) of burnout and engagement
Bakker & Xanthopoulou (2009)	A study of 62 dyads of employees colleagues (N=124)	Contagion of Engagement	Engagement crosses from employee to employee, where more frequent interaction increases the crossover
Westman et al. (2009)	The sample consisted of 275 business travellers and their working spouses	Contagion of vigour	Vigour crossed over from partner to partner
Felps et al. (2006)	Integrative literature review on contagion	Negative Contagion	Contagion can go through a chain of dyads instead of single dyads

Synthesis

The model has thus far provided causal arguments on the relationships between merger, downsizing and engagement. The next step is to introduce the contagion mechanism. The decrease in engagement creates a downward change in engagement (labelled ‘employee engagement gap’). Where evidence was brought forward that engagement can be contagious, the decrease in engagement in this model prompts employees to become more cynical (Byrne & Hochwarter, 2008). On the one hand, employees become more cynical towards the organization and their fellow colleagues. As their attitude becomes more cynical, employees express these negative thoughts during the long coffee breaks, where the rumouring starts about “who is next?” and other worries, creating a contagious atmosphere in which employees infect their colleagues. Apparently, the cynical behaviour functions as an attitudinal contagion in which their negative thoughts regarding the merger and downsizing crossover from one to another. These cynical survivors tend to use their voice in a destructive way, militating against the merger and downsizing process rather than support it (Mishra & Spreitzer, 1998). On the other hand, the emotional exhaustion and reduced engagement also initiates an affective contagion where not necessarily the rumours and badmouthing practices infect the employees, but the mere expression of negative emotions on the work floor itself (i.e. anxiety, being moody, not being enthusiastic etc.). Thus, where emotional exhaustion is prone for contagion through general interactions, cynical behaviour both induces contagion via gossip and as itself. Finally, where communication plays a role in managing expectations and uncertainty for mergers and downsizing, it also impacts the need for employees to start the rumour mill (McClurg, 2002). The finding shows that there is a direct relationship between the communication and the amount of rumouring. Therefore, the increase in the effect of the communication should decrease the effect of rumouring (Figure. 8)

Loop II – The Resilience loop

On the one hand, employees will incite each other with their worries, anxiety and cynical behaviour thereby further decreasing their own engagement as well as the engagement of others. On the other hand, humans have the tendency to put effort in de-escalating the negative situations and bounce back to stable levels.

To start, no studies found evidence for causality from engagement to resilience (i.e. engagement as antecedent of resilience). Generally, most of the reviewed studies in the engagement literature treat *resilience* as the antecedent, being a personal resource of engagement (Bakker & Demerouti, 2007, 2008; Scrima et al., 2014; Cooke et al., 2016). Still, there is theoretical evidence for a demonstration of resilience as a result of decreased engagement or resources.

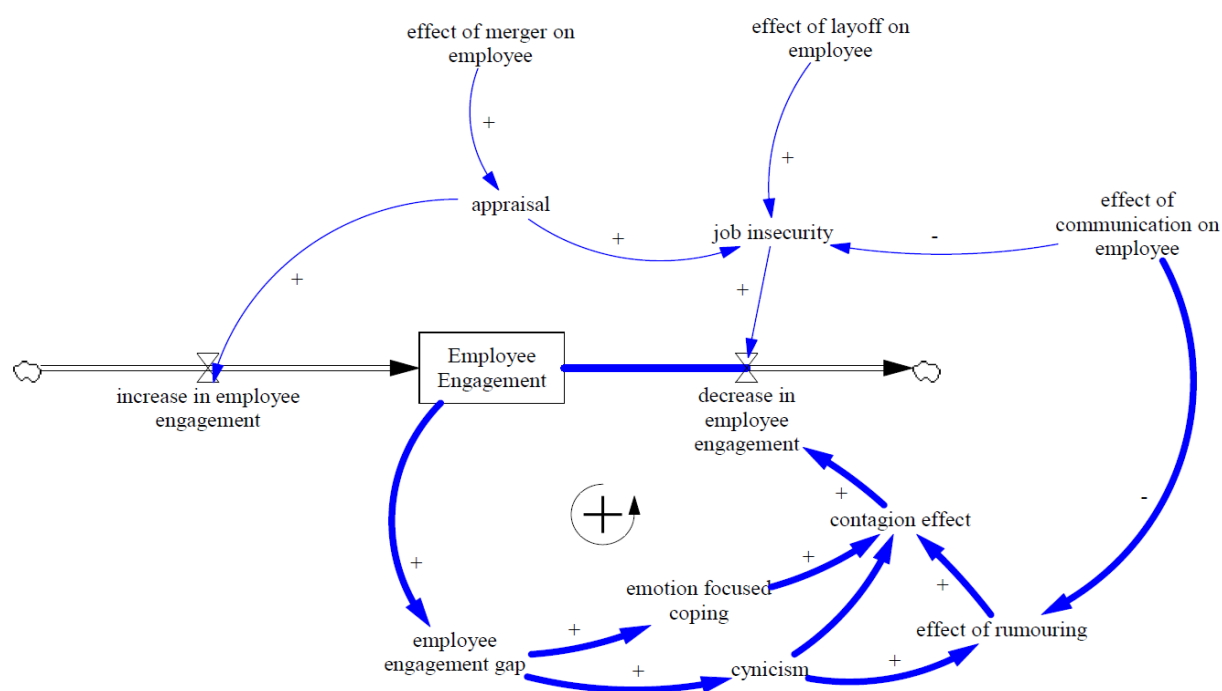


Figure 8. The Contagion Mechanism

From a JD-R theory perspective, for engagement to be able to ‘bounce back’ after engagement drops, either job and/or personal resources should increase or job demands should decrease. Therefore, studies explaining the motivation to acquire new resources during adverse events could function as demonstration of resilience (i.e. the process of bouncing back the level of engagement). One such explanation comes from the Conservation Of Resource (“COR”) theory (Hobfoll, 1989). Basically, the theory is based on the premise that individuals seek to preserve and *acquire* all kinds of resources (Bailey et al., 2017). In the present context, the loss in resources due to anxiety, insecurity and emotional exhaustion trigger the employee to preserve their resources by disengaging and seeking resources to replenish their reservoirs.

As mentioned earlier, most studies provide evidence for resilience as antecedent of engagement. Cooke et al. (2016) found support for the argument that resilience increases employee engagement. With the goal of understanding the role of high-performance work systems for engagement, they found that resiliency as personal resource was a significant factor in explaining the increase in engagement. The study of Shoss, Jiang and Probst (2016), however, used resilience as a moderator. In their study resilience buffered the impact of job insecurity on burnout. Taken to the context of the model, the fact that resilience buffered the impact of job insecurity (caused by merger and downsizing) on burnout (engagement construct) can be explained by the continuous cycle of resilience (the resilience mechanism). As long as the merger and downsizing impacts employee engagement, the resilience mechanism mitigates the negative impact, which is presented in Shoss et al. (2016) as ‘buffering’ effect.

An important distinction, however, needs to be made in the way how resilience occurs for it to have positive effects on engagement (Greenglass & Burke, 2000; Carmona et al., 2006). Two studies reported that employees who displayed resilience in the form of problem-focused coping were the ones who increased their engagement (Greenglass & Burke, 2000; Van der Colff & Rothmann, 2009). Employees who engaged in avoidance coping (emotion-focused coping) instead, increased their job insecurity, anxiety and levels of cynicism (Greenglass & Burke, 2000; Scheck & Kinicki, 2000). This means that while there can be a positive effect of resilience on engagement, attention has to be paid on the methods through which employees cope with the decreased engagement. Thus, proposing that resilience positively affects engagement as causality does not contradict the notion that resilience buffers job insecurity's impact on engagement. The study also confirmed Greenglass and Burke's (2000) finding in distinguishing both types of coping, where problem-oriented coping reduced the impact of job insecurity on emotional exhaustion. This supports the notion that while engagement is decreasing, a balancing force (resilience) tries to mitigate the decrease. In line with the suggestions made by multiple studies that the relationship between engagement and job/personal resources is not only unidirectional but could also be mutual (Hakanen et al., 2008; Schaufeli et al., 2009), this finding theoretically confirm such a relationship, thereby closing the resilience loop (Figure. 9).

Multiple studies also confirmed the existence of a mutually reinforcing relationships between engagement and resilience (Xanthopoulou, 2009; Weigl et al., 2010). In the longitudinal study of Weigl et al. (2010) they found that the engagement of employees both function as antecedent and consequence of problem-focused coping behaviour. Based on COR theory, this behaviour can be explained by the gains spiral of resources: where problem-focused coping helps mitigate the negative effect of de adversity and increases the engagement, the increase in engagement in turn provides the employee with more resources to deal with (new) other adversities, thus re-increasing the resilience effect.

The demonstration of resilience

One study approached the question of the impact of downsizing on employees by using longitudinal research settings in order to see the effects over time (Luthans & Sommer, 1999). The study found that, after the initial shock or impact (i.e. the initiation of the downsizing), there were signs of improvement. They studied the impact of downsizing on multiple employee attitudes in three intervals (the initiation of the downsizing, one year later and two years later). Two interesting attitudes for this research were job satisfaction and commitment. It appeared that job satisfaction initially dropped, but after a year showed signs of improved which continued in the second year. Conversely, commitment further

Table 5
Loop II: The Resilience Mechanism

Study	Sample	Type of Finding	Findings
Amiot et al. (2006)	Longitudinal study on a merger implementation with 220 employees, 3 months after the implementation (T1) and 2 years after the implementation (T2)	Resilience mechanism	Study discussed two coping mechanisms: problem-focused coping and avoidance-coping. Problem-focused coping predicted increased job resources (e.g. job satisfaction and organizational identification)
Luthans & Sommer (1999)	Longitudinal study over 3-years in healthcare sector, where an organization underwent downsizing, with 848 employees. T1= baseline (no downsizing yet), T2= one year after initiation downsizing, T3= two years after downsizing (process considered complete).	Resilience Mechanism	The “rebound effect” for employee opinions about their work group might suggest that initial effects are felt within the unit, but the group is able “to pull together,” to rally in mutually confronting and overcoming the challenges presented by the major changes imposed by “them” (upper management).
Greenglass & Burke (2000)	1363 employees (nurses) from multiple hospitals which underwent downsizing in Canada	Coping	<p>The data suggest that use of control coping was associated with greater job satisfaction and greater professional efficacy.</p> <p>In contrast, escape coping was associated with increased job insecurity, lower job satisfaction and higher levels of psychological distress including depression, anxiety, emotional exhaustion and cynicism.</p>
Carmona et al. (2006)	A survey among 558 teachers at T1 = start of first term (baseline) and T2= start of third term of the academic year (6 months later).	Resilience mechanism	The use of a direct coping style was negatively related to burnout, and the use of a palliative coping style was positively related to burnout.
Shoss, Jiang & Probst (2016)	Two studies: the first cross-sectional design study consisted of 1071 employees working at a university which recently underwent restructuring and downsizing. The second study used a representative working population sample of the United States (617 employees), coming from the Bureau of Labour Statistics.	Resilience mechanism	Psychological resilience mitigated the negative impact of job insecurity on burnout and psychological contract breach; similarly, resilient coping attenuated the lagged impact of job insecurity on emotional exhaustion.
Cooke et al. (2016)	A survey was distributed among 14 banks in China, with 2040 employees participating in the survey.	Resilience and Engagement	There was a positive relationship between employee resilience and engagement which supports the argument that through personal qualities such as resilience, employees can become more engaged as they may have greater ability to control their work environment.
Van der Colff & Rothmann, (2009)	A survey among a population of 818 registered nurses.	Coping	Problem focused coping enhances work engagement

decreased at both time intervals. The authors did note that the time effect for commitment was not significant, where it was the case for job satisfaction.

The study of Bankins (2015) illustrated that the violation of the psychological contract of employees initially produces a negative reaction and withdrawal of perceived contributions, but eventually engage in coping strategies to adapt and respond to these violations. This can be interpreted as the sequence of downsizing induced resilience, where the violation (i.e. downsizing) triggers withdrawal of perceived contributions (i.e. being engaged) but is later followed by a process of responding to the breach by adaptation (i.e. resilience). To explain this sequence from withdrawal to adaptation, COR-theory makes a good case in arguing that employees seek to conserve their resources and engage in coping.

Finally, the construct of communication reappears in the relationship with resilience. Two studies reported that communication regarding organization change (in this case merger) not only has a positive impact on the perceived level of anxiety, but also on the degree of coping and adjustment (Schweiger & DeNisi, 1991; Amiot et al., 2006).

Synthesis

While the proposed contagion mechanism (Loop I) creates a negative spiral for the level of engagement of employees, the resilience mechanism (Loop II) does the opposite. The effect of the merger and subsequent downsizing creates a situation that disrupts the normal daily routine, creating feelings of stress and anxiety (Kets, de Vries, & Balazs, 1997; Seo & Hill, 2005) and thus reduces engagement. This loss of resources prompts employees to adapt to the new situation by making conscious and/or subconscious efforts to maintain the balance between new external demands and to keep performances adequate at work and to stay engaged (Oreg et al., 2011). This is in line with COR-theory, providing that employees will be motivated to respond to the loss in resources by seeking resources (and aiming to bounce back). There are, however, two distinct processes employees use to cope with the adversity: problem-focused coping and avoidance (emotional) coping. When employees engage in problem-focused coping, they experience positive adaptation of job performance and high well-being (Britt et al., 2016). On the other hand, when employees resort to avoidance (emotion focused) coping, they express their negative feelings, which actually ‘infects’ people on the work floor. Therefore, the latter coping strategy reflects an affective contagion process as a result of the employee engagement gap.

As a result, problem-focused coping initiates a resilience effect, which in turn induces higher levels of wellbeing (Paton et al., 2008) which is a personal resource that positively influences engagement according to the JD-R model (Bakker & Demerouti, 2007). Therefore, the model will propose that the initial negative impact on the engagement of employees may vanish over time, bouncing the engagement back to their previous ‘normal’ levels in the merger and downsizing context. The

existence of this reciprocal relationship has been suggested in literature (Christian et al., 2011) as well confirmed (Weigl et al., 2010). Regarding the strength, as noted by Shoss, Jiang and Probst (2016), the higher the perceived job insecurity (which decreases the engagement) the stronger the resilience influences the outcomes (which in their case was engagement). In other words, when faced with stronger declines in engagement employees put more effort in bouncing back, displayed by the increased positive impact of resilience on engagement. This is reflected in the model by the greater the employee engagement gap, the greater the effect is passed forward to coping efforts and, conversely, also to the contagion mechanism (Figure. 9).

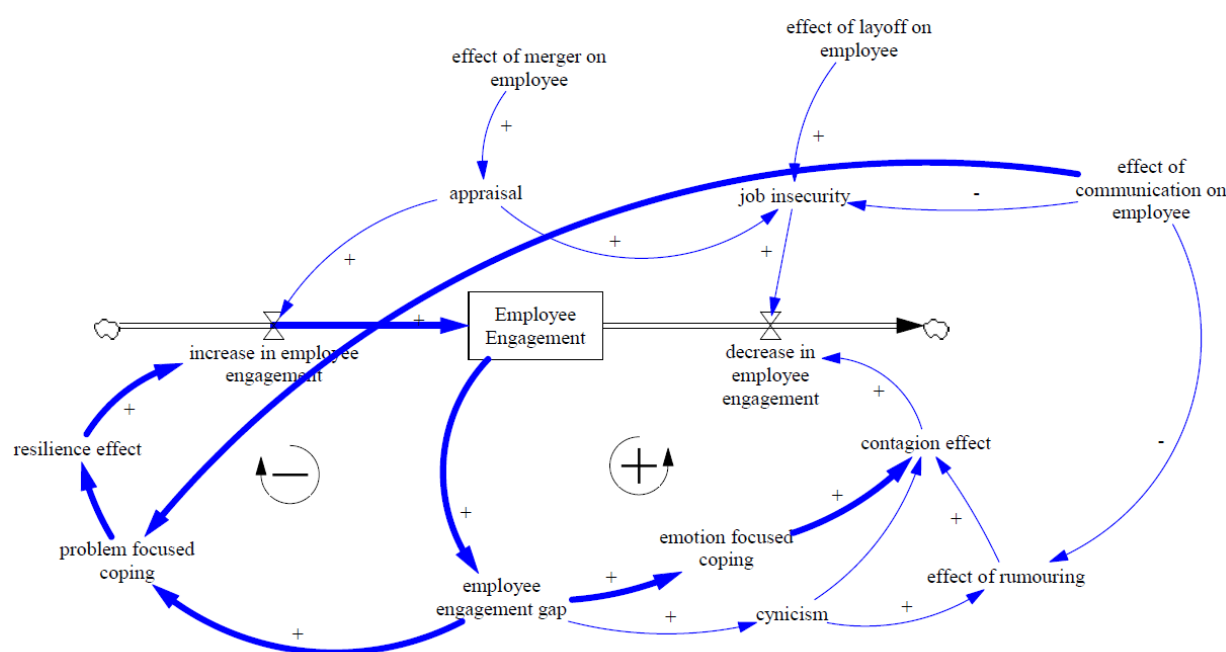


Figure 9. The Resilience Mechanism

Loop III – The Anchor & Adjustment loop

The most promising article was conducted by Tomprou, Rousseau and Hansen (2015). In their article they proposed an explanation for the behaviour of employees after a violation of the psychological contract (Rousseau, 1990). They argued the existence of a self-regulation process, labelled as discrepancy feedback loop, in which individuals reduce discrepancy between the current experience of the contract relative to the original standard of the contract. Where this article linked the feedback loop only to psychological contract violations, the mechanism explains and demonstrates that the standard (or goal) adjusts to align with the current level. This self-regulation process has two implications for the resilience mechanism as well as the anchoring & adjustment mechanism. First, and also proposed by

Wrosch et al. (2003), employees will alter their goal for alignment with the current level. As this process happens in a feedback loop (Tomprou et al., 2015) the anchoring & adjustment mechanism matches the function and purpose of the feedback. The second process relates to the motivation of the individuals to counter the negative effects coming from the discrepancy. In my model, this refers to the resilience mechanism, in which the employee actively seeks resources to bounce back to the initial level.

Where the above describes a similar mechanism to anchoring & adjustment in psychological contract theory, I also sought to find empirical (longitudinal) evidence that demonstrates changes in baseline. As this was not clear cut available in engagement literature, the review found analogous evidence for employee attitudes other than engagement where baseline changes were reported.

To that end, three studies related to commitment and involvement provided indirect evidence for changing baseline levels. The study of Grunberg et al. (2008) is one of few which followed employees who experienced multiple downsizing events for a time span of 8 years, including a baseline measurement. While they found that most work views after 8 years returned to their baseline level, specifically job involvement and job commitment never regained their baseline levels. While this was not a study on engagement, the two attitudes (i.e. job involvement and organizational commitment) have strong correlations with engagement, where they for the most part capture the same variation (Newman, Joseph & Hulin, 2010). The second study was conducted by Allen et al. (2001). In a longitudinal study starting one month after the initiation of a downsizing up to 16 months after the initiation they found that, job involvement and commitment never returned to their original levels. The reason they gave for this effect was that employees were more reluctant to immerse themselves in their work. And this was a behaviour which would persist for a considerable time after the downsizing event.

Additionally, one study referred to psychological contract theory as reason for the change in baseline (Turnley & Feldman, 1998). The authors performed three different studies in which they investigated the effects of downsizing on surviving employees. They noted that the breach resulted in multiple negative responses with irreparable harm done to these employees. While the study did not explicitly found evidence for permanent changes in engagement, the fact that the changes were assigned to breaches of the psychological contract does suggest that violations of the contract can result in adaptation to new standards. That is, violations to the psychological contract result in irreparable damage. Since the negative impact of downsizing also relates to the psychological contract breach, is could be very likely to observe the same effect for engagement. Continuing on the premise that job satisfaction, commitment and involvement explain much of the same variation as engagement does, Allen et al. (2001) found that negative impact on attitudes mostly occur at the beginning of the downsizing process. When following the employees for a longer period of time, attitudes started to become more positive again, where some returned to pre-downsizing levels. Another study provided that for some employees post-breach (i.e. psychological contract breach) commitment levels bounced

back to their initial levels, some employees even surpassed their initial levels and others never fully recovered (Solinger et al., 2016).

Synthesis

Aggregating the above findings, the evidence put forward by Tomprou et al. (2015) and Wrosch et al. (2003) provides the best evidence in the existence of an anchoring & adjustment mechanism regarding psychological states. The argument that employees mitigate cognitive dissonance by adjusting their goal level towards their current level reflects the anchoring & adjustment mechanism to a great extent. The added value of reported findings regarding commitment, involvement and satisfaction relates to the kind of input that is suitable for the mechanism. All three constructs are human *attitudes* (Newman, Joseph & Hulin, 2010), as is the main construct of this research engagement (Bakker & Demerouti, 2007). Thus, with analogous reasoning engagement could also be susceptible for the mechanism. In other words, the anchoring & adjustment mechanism is the vehicle and based on the findings *attitudes* are appropriate passengers of the vehicle, ‘including’ engagement.

Both these conclusions are the reasons why the causal model incorporates the normal engagement variable (as ‘goal level’) which is linked to the engagement variable (as ‘current level’) via engagement gap (the difference, or delta). This represents the anchoring and adjustment mechanism and with the inclusion of this mechanism, the causal model based on the literature review is finalized.

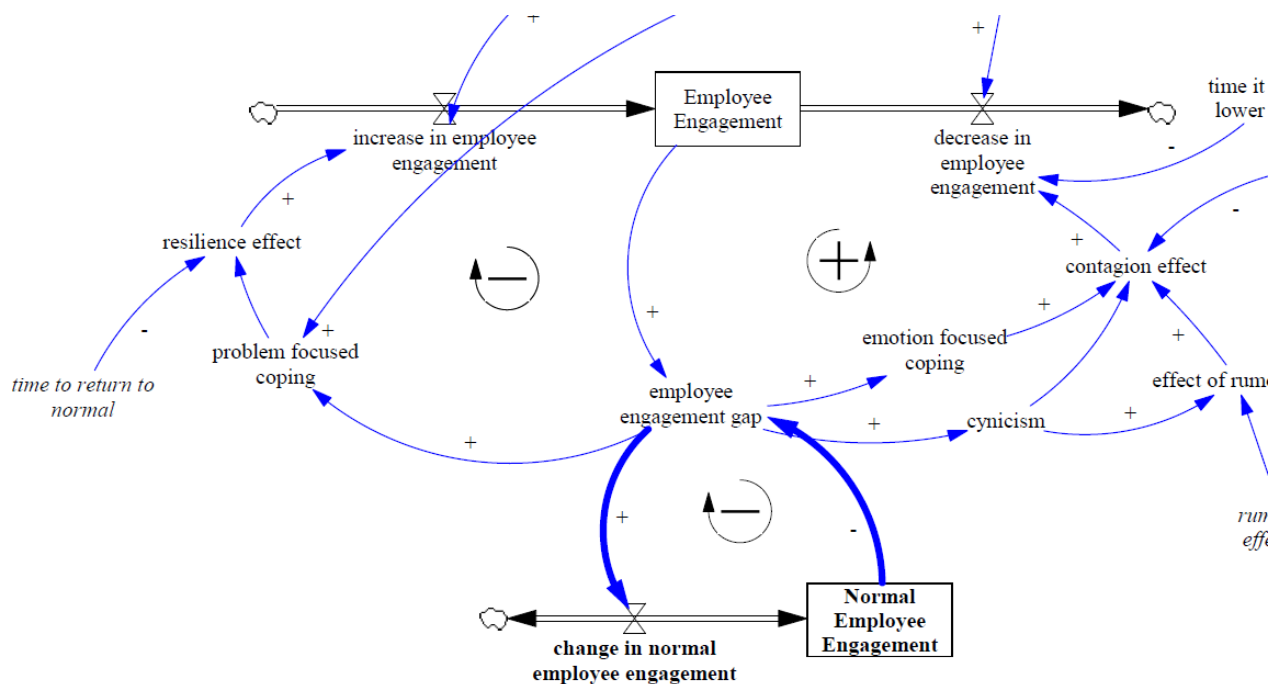


Figure 10. The Anchoring & Adjustment Mechanism

Table 6
Loop III: The Anchor & Adjustment Mechanism

Study	Sample	Type of Finding	Findings
Grunberg, Moore, Greenberg & Sikora (2008)	A Longitudinal study focused on 525 employees who experienced multiple downsizing events. T1= baseline, T2= 3 years later, T3= 6 years later and T4= 8 years later	Anchor & Adjustment of engagement	At Time 4 there was a noticeable rebound. Most of their (i.e. employees) views about their work and the organization recovered to Time 1 levels. But some attitudes and orientations did not return to Time 1 levels. Workers never quite regained the levels of job involvement or organizational commitment they had at Time 1, although the trend was one of improvement
Allen et al. (2001)	106 employees who experienced downsizing were interviewed at three intervals, T1= one month after downsizing, T2= four months after downsizing, T3= 16 months after downsizing	Anchor & Adjustment of engagement	Significant differences between Time 1 and Time 3 indicate that over a longer period of time, attitudes do not return to their original level. Support for this hypothesis was found for job involvement and job commitment. Employees may continue to be reluctant to immerse themselves fully in their work for a considerable period of time following the downsizing event.
Turnley & Feldman (1998)	Three studies, where study 1 focused on 223 bank employees who recently experienced heavy mergers and acquisitions, study 2 focused on 105 agency employees who recently experienced restructuring and reorganization and study 3 consisted of 213 employees from different organizations who recently underwent downsizing.	Anchor & Adjustment of engagement	It was reported that violations of the psychological contract due to downsizing resulted in harm done to employees who were not able to fully recover afterwards
Tomprou et al (2015)	Narrative literature review	Self-regulation model	The model prescribes a self-regulation model which resembles the anchoring & adjustment model
Wrosch et al. (2003)	Review article on Self-regulation adaptation	Self-regulation model	Individuals will employ goal disengagement to reduce discrepancy
Solinger et al. (2016)	longitudinal design in a sample of young academics who reported breach events while undergoing job changes (N= 109).	Psychological contract violation and adaptation	Many attitudes recovered but only to a certain extent, indicating an adjustment of baseline

4. System Dynamics

4.1 Method

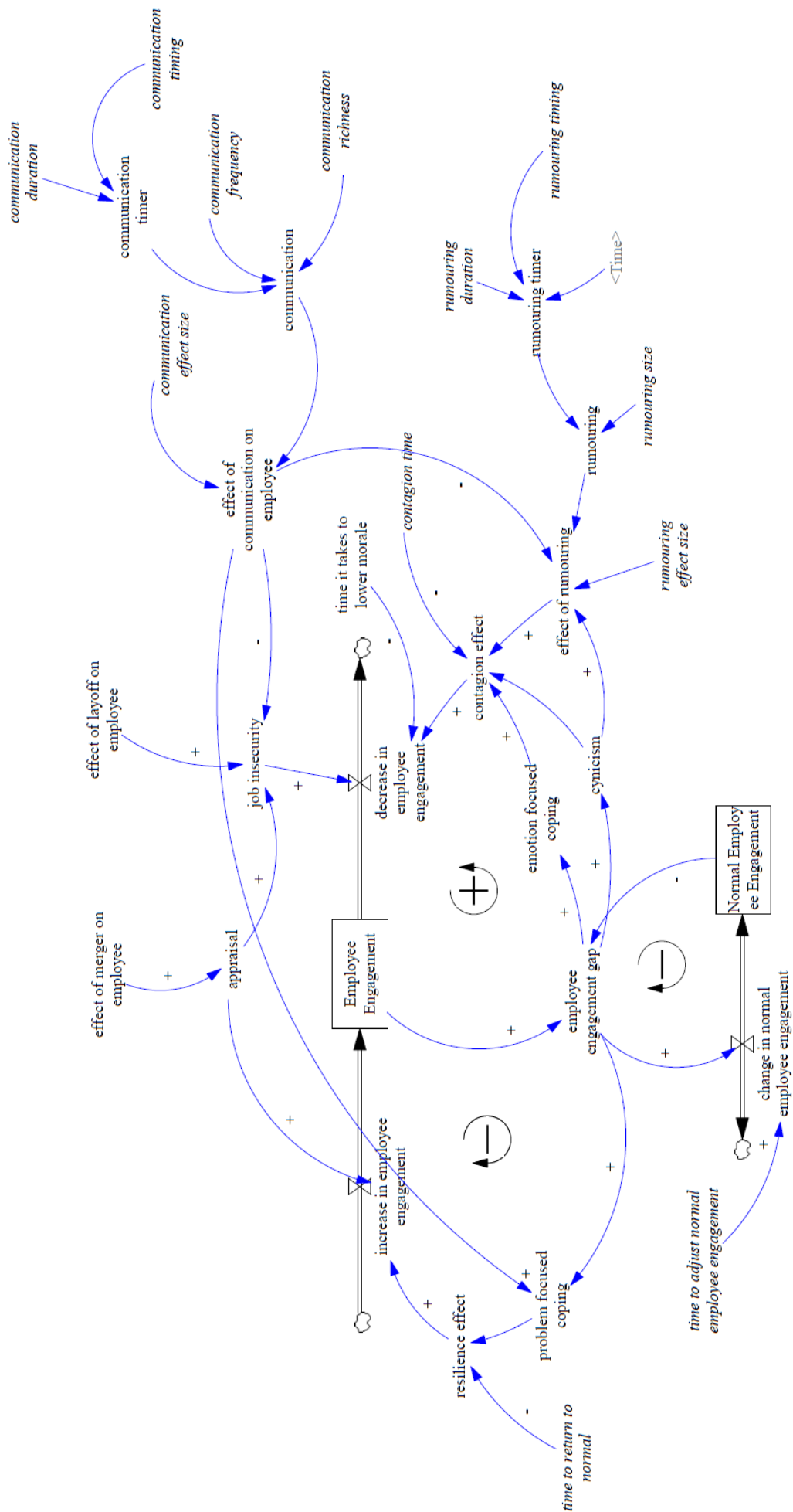
Now that the literature has been consulted to establish the causal model it is time to use these findings for simulation and discover if the simulation can offer additional insights regarding the behaviour of engagement over time.

When using SD-methodology, scholars use causal loop diagrams to model a certain environment in a structural way (Sterman, 2000). Basically, causal loop diagrams exhibit influences of certain variables on each other in the form of feedback structures. The accumulation of variables connected in one feedback structure can do one of two things: it can create a negative feedback loop or a positive feedback loop. In short, the positive feedback loop *further* decreases or increases (depending on the initial disturbance) the system of which it is part of. As the name suggest, it has a positive relationship with the disturbance. The negative feedback loop, on the other hand, seeks to return the system to equilibrium through which it functions as a counter force (Sterman, 2000).

The structure of these loops are represented by stock variables (state) and flow (rate) variables (Georgiadis, Dimitrios & Eleftherios, 2005). The stock variable (i.e. engagement in this model) can be seen as an inventory within the system, where it represents the net result of the inflows and outflows variables. When modelling these stocks and flow variables, the polarities assigned to them are crucial for the structure (Sterman, 2000). Polarities indicate whether an increase (decrease) in the independent variable causes an increase (decrease) in the dependant variable (i.e. both moving the same direction, thus labelled a positive effect '+') or whether an increase (decrease) in the independent variable causes a decrease (increase) in the dependant variable (i.e. moving in opposite directions, labelled a negative effect '-'). This is important, because by knowing the polarities of the relationships it becomes possible to describe the *structure* of the relationships (Sterman, 2000).

Finally, to model dynamic relationships via causal loop diagrams, the model is constrained to certain fundamental modes of dynamic behaviour for it to be suitable for simulation (Sterman, 2000). These modes describe the behaviour and feedback structure of corresponding constructs, where three pivotal modes are at the basis of this proposed model. First, the exponential growth mode (i.e. positive feedback loops) functions as behaviour which reinforces the change. Second, the goal-seeking mode (i.e. negative feedback loop) functions as mode which balances the growth mode by aiming for equilibrium, thus bringing the state of the system back to the desired state. Important to note is that this 'balancing' feedback loop needs not to be a conscious effort of the individual; it can be an unconscious process (Sterman, 2000). For instance, to recover from a shortage of sleep it is not the conscious thought, but the body that controls the amount of sleep needed to feel well again. Finally, the oscillation mode (i.e. a negative feedback loop with time delays) illustrates the behaviour where corrective actions are taken

Figure 11
Engagement Causal Loop Diagram



to eliminate discrepancies, but in doing so, continuously overshoots the goal level followed by reversal and undershooting the goal level (Sterman, 2000).

As can be seen (Figure. 11), the contagion loop represents the exponential growth mode, thereby reinforcing the decrease in engagement. The resilience loop, however, functions here as a goal-seeking mode aiming at countering the decrease in engagement by increasing the engagement. Lastly, the anchoring & adjustment loop represent the oscillation mode in trying to adjust the engagement baseline level towards the current level but constantly lags behind due to the change in current engagement level.

4.2 Modelling the findings

In order to simulate the behaviour over time I used conceptual virtual laboratory as research strategy (De Gooyert, 2019) which is a strategy where existing ‘simple’ theories are used and modelled through which implications of combining theories are ‘discovered’ through sensitivity analyses (Davis et al., 2007).

Based on the above literature findings, the following causal loop diagram is designed to map the causalities offered by the synthesis of reviewed literature (Figure. 11). Consequently, for the model to be used in a simulation and for it to provide realistic output, four steps needed to be taken: (1) designing a merger and downsizing environment (i.e. including multiple variables and parameters representing different characteristics of the events, see Figure 12), (2) incorporating variables which represent the ‘time’ dimension of certain effects, (3) translate all relationships to mathematical differential equations and (4) orchestrate multiple scenario’s (i.e. different settings of parameters) to see the different behaviours of engagement over time.

First, I used a merger and downsizing structure where *the effect of merger on employee* as well as *the effect of the layoff on employee* were contingent on their timing, duration, size and effect size (Figure 12). I will elaborate more on their properties in the following section. Important to mention, during the sensitivity analyses their properties were not altered since the focus of the current study was on the mechanisms and not the characteristics of the merger and downsizing.

Regarding the time dimension, since running simulations (i.e. sensitivity analysis) does so by incorporating the time, additional variables were added to the model regarding the three mechanisms and communication: *time to return to normal* (i.e. time it takes for an employee to recuperate from the decrease in engagement), *contagion time* (i.e. the time it takes for the negative effects to spread across the organization), *time to lower morale* (i.e. time it takes for employees to feel the full impact of the merger and downsizing), *time to adjust normal employee level* (i.e. time it takes for the ‘anchor’ level to reach the current engagement level), *rumouring timing* (i.e. when does the rumouring start), *rumouring duration* (i.e. how long does the rumouring persists), *communication timing* (i.e. when does the organization communicates information regarding the merger and downsizing to its employees) and

communication duration (i.e. for how long will they continue in providing communications). These are all parameters which enable me to manipulate the magnitude of variables over time. They are measured in ‘Month’ units, to incorporate the influence of time and duration of variables.

Next, the constructs and relationships between the constructs (i.e. the structure) were mathematically translated to differential equations, which were then numerically solved via simulation (Georgiadis, Dimitrios & Eleftherios, 2005). To translate the causal loop diagram into a computer modelling environment, I used the high-level graphical simulation program ‘Vensim PLE 7.3.5.’ as it is a widely accepted tool for system dynamics modelling (Inam et al., 2015). For all variables, including the parameters, mathematical equations were constructed to give relative weights and causal meaning to the relationships. (See Appendix I for an overview of the variables and their unit level).

Equations

To start, the model makes frequently use of the same equation structure to avoid unit of analysis errors. That is:

$$\text{timer} = \text{IF THEN ELSE} (\text{Time} \geq \alpha : \text{AND: Time} \leq \alpha + \beta, 1, 0) \quad (1)$$

where α stands for the timing (of merger/downsizing) and β represents the duration (of merger/downsizing). In this way, I can decide on the exact month in which either events take place and for how long their presence can affect engagement;

$$\text{Merging/Downsizing} = \text{IF THEN ELSE} ([\text{merger/downsizing}] \text{timer}, \text{size}, 0) \quad (2)$$

where *size* stands for either the merger or downsizing *size* and the *timer* represents the timer of the construct that is measured, to ensure that once the timer kicks in, the effect can start taking place;

$$\text{Effect of (layoff/merger) on employee} = \Omega * \mu \quad (3)$$

where μ represents the *effect size* of either downsizing or merger (depending on the effect) and Ω represents either *downsizing* or *merger* (depending on effect);

$$\text{Appraisal} = \text{effect of merger on employee} \quad (4)$$

where I left the value of appraisal similar to the value of the effect of the merger. This was done, so that I could change the weight assigned to appraisal in the *job insecurity* and *increase in employee engagement* equation. Therefore, when employees perceived the merger as a threat (negative) the

distribution was [appraisal * 1] for *job insecurity* and [appraisal * 0] for *increase in employee engagement*, but if employees perceived the merger as an opportunity (positive) the distribution was [appraisal * 0] for *job insecurity* and [appraisal * 0.5] for *increase in employee engagement*). The lower weight for *increase in employee engagement* (0.5) was to incorporate the fact that, according to COR-theory, the loss of resources generates larger effects than the gain of resources (Hobfoll, 1989).

Regarding the remaining equations, they were all separately constructed since their properties are not always similar. The communication construct is mathematically defined in the following way:

$$\text{Communication timer} = \text{IF THEN ELSE}(\text{Time} \geq \text{communication timing}; \text{AND} \quad (5) \\ : \text{Time} \leq \text{communication timing} + \text{communication duration}, 1, 0)$$

where the timer is instructed to initiate the *effect of communication* once the designated month is reached (i.e. *communication timing*), otherwise being zero.

$$\text{Communication} = \text{IF THEN ELSE}(\text{communication timer}, (0.5 * \text{communication} \quad (6) \\ \text{frequency}) + (0.5 * \text{communication richness}), 0)$$

where the value of communication depends on the *frequency* and the *richness of the communication*, both accounting for half of the total value. Note that no scenarios were designed where one of both elements is at value zero, since there would be no effect if richness is at its peak, but there is no communication at all (frequency at 0), and vice versa.

$$\text{Effect of communication} = \text{communication effect size} * \text{communication} \quad (7)$$

where the *communication* represent the value of the construct and the *communication effect size* represent the magnitude or strength of the construct.

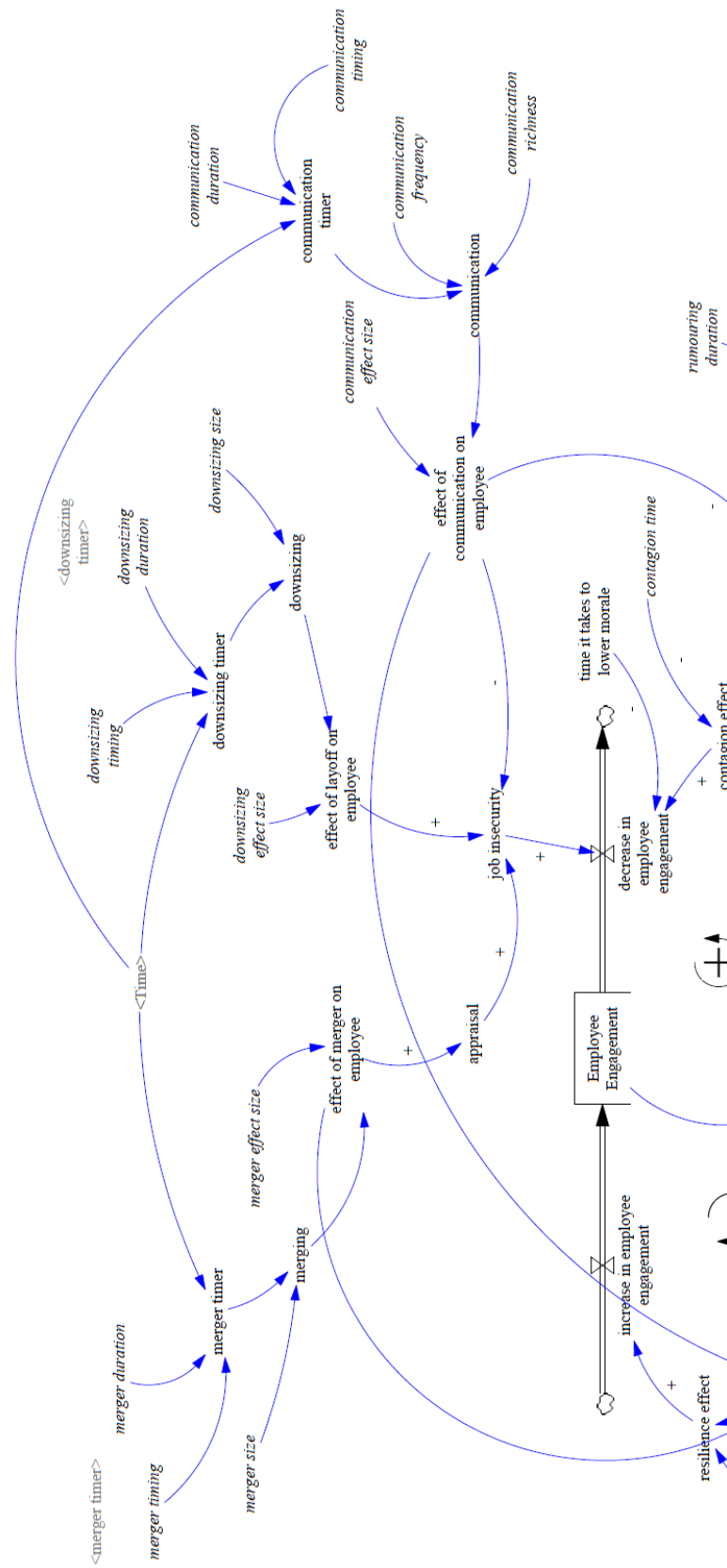
The following formulas were used to aggregate the effects of the three constructs (merger, downsizing and communication) on *job insecurity* and *engagement*:

$$\text{Job insecurity} = ((\text{appraisal} * x) + \text{effect of layoff on employee} \quad (8) \\ - \text{effect of communication on employee})$$

where *appraisal* represents *the effect of the merger on employee* (when giving weight ‘1’ as employees appraise the event as a threat, weight ‘0’ when appraised as opportunity), *the effect of layoff on employee*

Figure 12

The Merger and Downsizing Modelling Structure



is added as additional force reducing engagement and *the effect of communication on employee* counters their effect, thus reducing *job uncertainty*;

$$\text{Decrease in employee engagement} = (\text{job insecurity} / \text{time it takes to lower morale}) + \text{contagion effect} \quad (9)$$

where the right hand side of the formula describes that *job insecurity* decreases engagement, but that *time it takes to lower morale* is the ‘time’ dimension providing that the longer it takes for the morale (i.e. engagement) to decrease, the more the negative impact of *job insecurity* is spread out across the merger and downsizing process and the strength decreases. Finally, the *contagion effect* is added since it also decreases the engagement level;

$$\text{Employee engagement} = \text{increase in employee engagement} - \text{decrease in employee engagement} \quad (10)$$

where the sum of the *increase* and *decrease of engagement* pertains the engagement level. The initial level of *Employee Engagement* is ‘1’ as baseline level (not maximum engagement level);

$$\text{Increase in employee engagement} = \text{resilience effect} + (\text{appraisal} * x) \quad (11)$$

where *resilience effect* and *appraisal* (if perceived as opportunity) both define the magnitude of which engagement increases;

$$\text{Employee engagement gap} = \text{Normal Employee Engagement} - \text{Employee Engagement} \quad (12)$$

where the difference between the *Normal Employee Engagement* level and *Employee Engagement* level (i.e. the current level) results in the gap;

$$\text{Emotion focused coping/cynicism} = \text{employee engagement gap} \quad (13)$$

where both *emotion focused coping* and *cynicism* are equal to *employee engagement gap*, since they both receive the value from the gap as catalyser for their effect. However, to avoid the effect of the engagement gap to be doubled, the *contagion effect* formula adds both variables and divides them by two, resulting in one time the value of the gap. I made this distinction because *cynicism* also has a positive effect on the *effect of rumouring* (Byrne & Hochwarter, 2008), where the review did not provide evidence for emotion based coping as antecedent of rumouring (see equation 17). Thus to direct value

from the employee engagement gap to rumouring I linked them through rumouring for mathematical validity as well as theoretical validity.

The final series of equations represent the contagion mechanism, the resilience mechanism, the anchoring & adjustment mechanism and the rumouring construct:

$$\begin{aligned} \text{Contagion effect} = & (((\text{emotional focused coping} + \text{cynicism}) / 2) \\ & + \text{effect of rumouring}) / \text{contagion time} \end{aligned} \quad (14)$$

where the *contagion effect* is a sum of *employee engagement gap* (represented by *emotion focused coping* and *cynicism* divided by 2; see description formula 13 for reason) plus the effect of rumouring (reinforcing *contagion effect*), where *contagion time* represents the time that the effect of contagion needs to spread out across the organization. Thus, the higher the contagion time, the longer it takes for the *contagion effect* to be felt and therefore the lower the direct impact of contagion on *the decrease in employee engagement*;

$$\begin{aligned} \text{Rumouring timer} = & \text{IF THEN ELSE}(\text{Time} \geq \text{rumouring timing}; \text{AND:Time} \\ & \leq \text{rumouring timing} + \text{rumouring duration}, 1, 0) \end{aligned} \quad (15)$$

where the timer is instructed to initiate the *effect of rumouring* once the designated month is reached (i.e. *rumouring timing*), otherwise being zero;

$$\text{Rumouring} = \text{IF THEN ELSE}(\text{rumouring timer}, \text{rumouring size}, 0) \quad (16)$$

where the activation of the *rumouring timer* results the *rumouring size* to enter the simulation, otherwise being zero;

$$\begin{aligned} \text{Effect of rumouring} = & (\text{rumouring} * \text{rumouring effect size}) + (\text{cynicism} * 0.28) \\ & - (\text{effect of communication on employee}) \end{aligned} \quad (17)$$

where the effect is a sum of the rumouring construct ‘plus’ the effect of *cynicism*. The weight of 0.28 is given as the only parameter I could infer from the literature review was the correlation of 0.28 between gossip and cynicism found in the article of Kuo et al., (2015). Because otherwise, and not realistic for the model, the full value of cynicism would be used both directly and indirectly via gossip. Therefore, assigning this weight aids in running more realistic simulations;

$$\begin{aligned} \text{Problem focused coping} &= \text{employee engagement gap} \\ &+ \text{effect of communication on employee} \end{aligned} \quad (18)$$

where the gap creates the initiations of *problem focused coping* and *the effect of communication* enhances the ability to cope with the merger and downsizing;

$$\text{Resilience effect} = \text{problem focused coping} / \text{time to return to normal} \quad (19)$$

where the results of the *problem focused coping* is buffered by the time it takes for employees to return the engagement level back to normal;

$$\text{Normal Employee Engagement} = \text{change in normal employee engagement} \quad (20)$$

where the initial value of *Normal Employee Engagement* is set on '1' and the *change in normal employee engagement* is the only input that impacts this variable;

$$\begin{aligned} \text{Change in normal employee engagement} &= -\text{employee engagement gap} \\ &/ \text{time to adjust normal employee engagement} \end{aligned} \quad (21)$$

where the change is the value of the *employee engagement gap* (i.e. the difference between the current and normal engagement level) and where *time to adjust normal employee engagement* represents the time it takes for the anchor of engagement to move in the direction of the current level.

Parameter values

The values for the fixed parameters were based on a few assumptions. First of all, I chose a lower effect size of the merger (*base case value* = 0.1) compared to the effect size of downsizing (*base case value* = 1) for a theoretical and mathematical reason. The first reason for this choice was because the review of literature indicated that a lot of anxiety felt by employees due to the merger were worries of job insecurity and since their insecurity later got confirmed due to the layoffs the anxiety effect accumulates (Turnley & Feldman, 1998). Thus, the impact of the layoffs weighs heavier than the impact of the merger. Second, since I wanted to simulate a full takeover the *merger size* (note: not *merger effect size*) was represented by the value '1'. The *downsizing size*, however, was set on value '23' to indicate a workforce reduction of 23%. Therefore, the *effect sizes* of both events needed to balance the size of the events themselves, resulting in ('merger effect = 0.1 * 1' and 'downsizing effect = 1 * 0.23'). The effect size of communication was kept below the effect sizes of downsizing and merger (*base case value* = 0.025) as the assumption derived from literature was that communications positively impact engagement

by buffering the negative effects on employees, but not completely mitigating them (Angwin et al., 2016). Also, the rumouring timing (*base case value* = 6) was set six months before merger implementation as it is likely and realistic that employees will grasp some information regarding possible mergers beforehand and start rumouring.

In addition, the parameters regarding the merger and downsizing were designed in such a way that the trajectory reflects a fairly mainstream merger-downsizing event. That is, finding an acquisition target on top management level (Month 1-12), starting with the merger event (Month 12), the implementation of the merger (Months 12-18), a small intermezzo of six months for management to detect where changes in resources are needed (Month 18-24), the initiation of the downsizing (Month 24), the implementation of the downsizing (Month 24-27) and the remaining time for the employees the recalibrate. These parameters, as mentioned earlier, were not changed. For an overview of the base case values, see Table 7.

Table 7: Parameters

Parameter	Base case value	Minimum sensitivity value	Maximum sensitivity value	Unit
Merger timing	12	0	24	Month
Merger duration	6	1	24	Month
Merger size	1	0	1	Dml
Merger effect size	0.1	0	1	Engpoints
Downsizing timing	24	1	24	Month
Downsizing duration	3	1	24	Month
Downsizing size	0.23	0	1	Dml
Downsizing effect size	1	-	-	Engpoints
Communication timing	12	1	24	Month
Communication duration	15	1	48	Month
Communication richness	0.5	0	1	Dml
Communication frequency	0.5	0	1	Dml
Contagion time	8	1	24	Month
Rumouring timing	6	1	48	Month
Rumouring duration	21	1	48	Month
Rumouring size	0.3	0	1	Dml
Rumouring effect size	0.05	0	1	Engpoints
Time to return to normal	5	1	24	Month
Time it takes to l. morale	3	1	24	Month
Time to adjust to normal	24	1	48	Month

Note: Dml = Dimensionless; Engpoints = Engagement points.

Scenario's

Based on the review findings and parameters, different scenarios were formulated, that is, assigning different values to each parameter to see how engagement behaves over time (Georgiadis, Dimitrios & Eleftherios, 2005). The scenarios were designed to test if certain relationships provided less/more

decrease in engagement *relative* to the other scenario's. I constructed the following scenarios (for the configuration values see Appendix II):

- Scenario 1: **Communication Champion**
 - Characterized by employees who initially perceive the merger as a threat, but where the organization tries to be as transparent as possible therefore minimizing rumouring.
 - Configuration: negative appraisal merger, high communication frequency and richness, low rumouring size, low rumouring effect size, high contagion time, low time to return to normal, high time to lower morale, high time to adjust normal employee engagement.
- Scenario 2: **Top Down Management**
 - Characterized by no communication at all, where the employees are in a constant state of not knowing what is going on, thereby increasing contagion and rumour rate.
 - Configuration: negative appraisal merger, low communication frequency and richness, high rumouring size, high rumouring effect size, low contagion time, high time to return to normal, low time to lower morale, low time to adjust normal employee engagement.
- Scenario 3: **Resilient workforce**
 - Characterized by employees who initially see the merger as an opportunity, are fairly resilient and less prone to contagion and rumouring even though the organization does not provide good communication regarding the merger and downsizing.
 - Configuration: positive appraisal merger, low communication frequency and richness, high rumouring size, high rumouring effect size, high contagion time, low time to return to normal, high time to lower morale, high time to adjust normal employee engagement.
- Scenario 4: **Disappointed workforce**
 - Characterized by vulnerable employees who first see the merger as an opportunity but later on get disappointed by the downsizing, even though information was provided for the reason why the (in the eyes of the employees) sudden downsizing was necessary.
 - Configuration: positive appraisal merger, high communication frequency and richness, high rumouring size, low rumouring effect size, low contagion time, high time to return to normal, low time to lower morale, low time to adjust normal employee engagement.

4.3 Results

The first step before discussing the implications of the findings is shortly confirming if the behaviour of the model is a valid representation of the proposed causalities and their assumed effects (Anderson & Lewis, 2014). If the model is valid, the simulation should reflect the same effects as were derived from the literature review.

First, the graph (Figure 13) shows for the merger timing (month 12) and downsizing timing (month 24) a decrease in engagement if both events are perceived as threats ('Communication Champion' and 'Top Down Management'), which reflects anxiety theory (Seo & Hill, 2005) and psychological contract theory (Rousseau, 1990). If the merger is perceived as an opportunity (for scenario 'Resilient workforce' and 'Disappointed workforce') the engagement level correctly initially increases as employees are excited and opportunistic regarding new professional prospects (Teerikangas, 2012). This increase happens just up to the moment when the downsizing process starts. In addition, where there is high communication and consecutive low rumouring ('Communication Champion') the negative impact of the merger and downsizing is correctly buffered, illustrated by low variance from the engagement mean (i.e. '1'). Finally, the increase in time for contagion and anchoring & adjustment to take place correctly diminishes the negative impact on engagement as the time spreads the effect out ('Resilient workforce'), which is indicated by faster recovery effects.

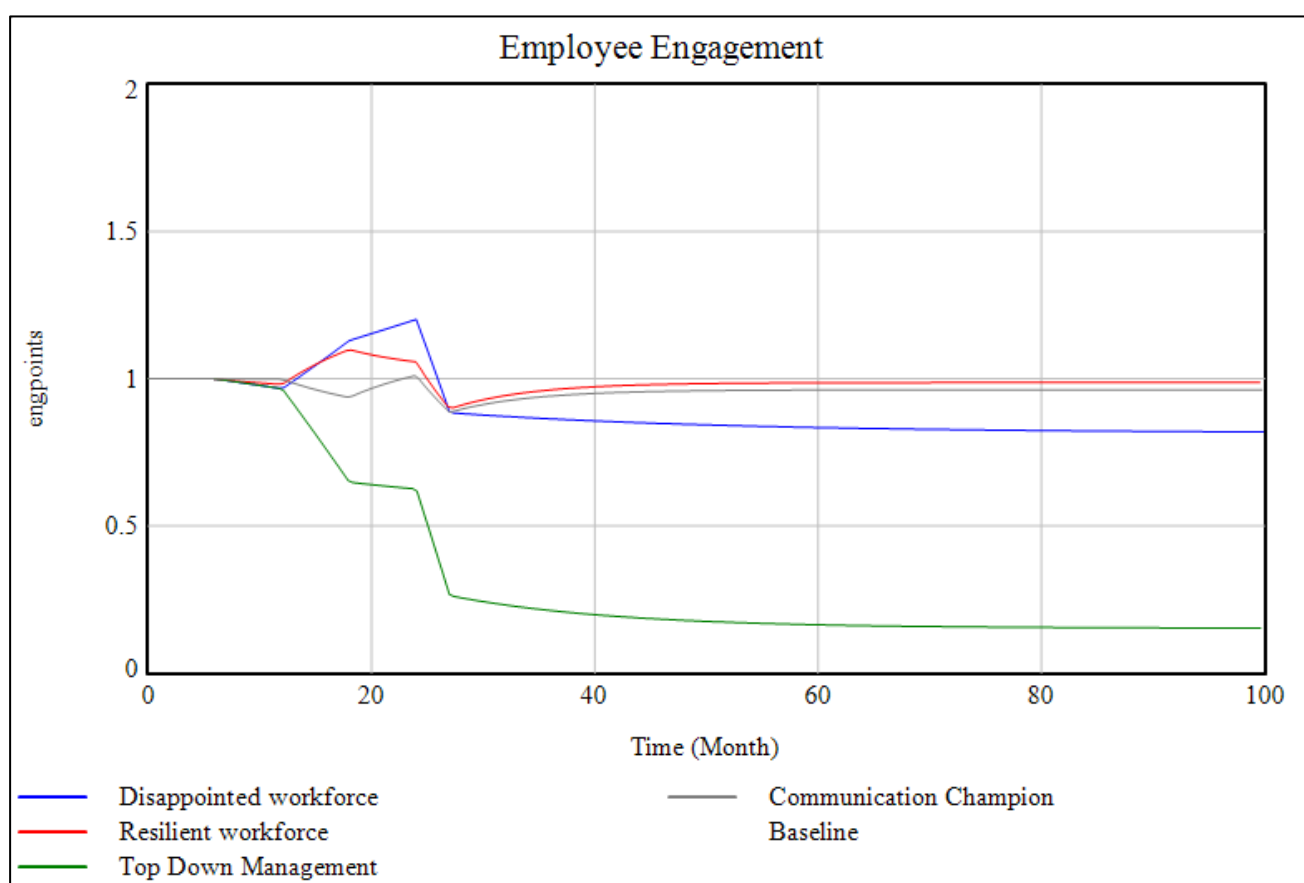


Figure 13. Behaviour of Strategies Over Time

The results of the simulation have various implications. First, as was expected, where the organization uses frequent and rich communication to inform employees on the merger and downsizing the negative impacts is greatly buffered ('Communication Champion' engagement $T2 = 0.887$ against weak communication 'Top Down Management' engagement $T2 = 0.265$). Thus, where the organization decides to be transparent and provides good justifications for both events, employees do feel a drop in engagement but tend to stay near their pre-merger and downsizing engagement level far after the events took place (engagement $T4 = 0.960$). If management decides to keep both events secret without informing employees ('Top Down Management') it increases the amount of rumouring due to information deficiency and an anxious environment arises where employees constantly infect each other with their worries and cynicism. To that end, the engagement significantly drops and never fully recovers (engagement $T4 = 0.17$). Note that reaching engagement level '0' would not imply that an employee stops working. It merely indicates that the employee is *not* engaged at all, which most likely would result in employee turnover or other negative responses (Bakker & Demerouti, 2017). Furthermore, when taking into account the appraisal of employees being positive regarding the merger, the initial increase reflects the positive view ('Resilient workforce' and 'Disappointed workforce'). However, both strategies illustrate that the subsequent downsizing is severe enough to push engagement below the baseline ('Resilient workforce' engagement $T4 = 0.984$; 'Disappointed workforce' engagement = 0.843).

Table 8 Engagement Levels

Strategy	Time	Engagement level
Communication Champion	T1	0.936914
	T2	0.886926
	T3	0.948882
	T4	0.960332
Top Down Management	T1	0.649725
	T2	0.264516
	T3	0.202095
	T4	0.174615
Resilient workforce	T1	1.09975
	T2	0.898666
	T3	0.971084
	T4	0.984473
Disappointed workforce	T1	1.13
	T2	0.88584
	T3	0.858959
	T4	0.842712

Note: T1 = At end merger duration (Month 18); T2 = at end downsizing duration (Month 27); T3 = one year after end downsizing (Month 39); T4 = two years after end downsizing (Month 51).

An interesting implication, however, is the difference between an initially optimistic yet vulnerable workforce prone to anxiety, contagion and rumouring which receives good communication (i.e. ‘Disappointed workforce’) versus a resilient workforce less prone to anxiety, contagion and rumouring without receiving additional good communications (i.e. ‘Resilient workforce’). When comparing engagement levels two years after the events, $engagement = 0.842$ and $engagement = 0.984$ respectively, it indicates that it might be better to have a resilient workforce instead of a vulnerable but informed workforce. This could explain that employees who ‘go with the flow’ and who have plenty of personal resources to their disposal can better cope with such adversities (Bakker & Demerouti, 2007).

Furthermore, a fourth observation relates to the small proximity of ‘Resilient workforce’ and ‘Communication Champion’, respectively $engagement\ T4 = 0.984$ and $engagement\ T4 = 0.960$. With an engagement difference of ‘0.024’ points, the result is nearly identical. The importance here lies in the trajectory beforehand where, for instance, the ‘Communication Champion’ delivers less variation than ‘Resilient workforce’ (i.e. the largest difference at ‘Month 18’, for the former strategy -0.0631 and the latter +0.0997). An interesting discussion here would be if the extra benefit of having the workforce more engaged (above ‘1’) during the merger but subsequently letting them down offsets the trajectory where employees are being informed but never perceive the merger as an opportunity.

The last interesting observation is the resemblance of the commitment level trajectories prescribed by Tomprou et al. (2015) after psychological contract violations and the trajectories from my simulation. In their study, they found different trajectories in which commitment levels responded to the breach, where they identified a *reactivation* trajectory (i.e. returning to pre-violation levels), a *dissolution* trajectory (i.e. the level significantly drops and actually never recovers), an *impairment* trajectory (i.e. the level drops but does not fully recover) and the *thriving* trajectory (i.e. the recovery surpasses the initial pre-violation level). When comparing their trajectories with the formulated strategies of my simulation, it seems that the ‘Communication Champion’ and ‘Resilient workforce’ strategies closely resemble the reactivation trajectory, where engagement nearly ends up at the pre-merger and downsizing engagement level. The ‘Disappointed workforce’ strategy resembles the impairment trajectory where the end result is a decrease in engagement but with more variation in the process. Finally, the ‘Top Down Management’ strategy reflects the dissolution strategy in which the engagement nearly dissolves over time. The resemblance between both models indicates that the simulated strategies appear to reflect more often observed trajectories in research, thus confirming to some extent the validity of the causal model.

5. Discussion and Conclusion

5.1 Summary

As long as M&A business booms and shareholders keep putting pressure on management for more efficiency and removal of unnecessary costs, employees will have to deal with the repercussions when management decides to downsize after a merger. As a matter of fact, due to the apparent enthusiasm for mergers and the frequently observed downsizing events (Datta et al., 2010; IMAA, 2019), odds are that most employees will at least once in their lives be part of a merger or downsizing (De Jong et al., 2016). For some employees this means reorienting and looking for new jobs. For others, the survivors, this means staying at the company and dealing with the accompanied negative consequences. It cannot be stated enough that these survivors are of crucial importance for management to consider when aiming for M&A success: they are the ones that keep the organization running. And as mergers and downsizing have numerous implications for the survivors, an important one is the impact on their engagement, which has shown to be strongly related to firm performance (Laschinger & Leiter, 2006; Macey et al., 2009; Rich et al., 2010). To that end, this study focused on the role of employee engagement in the merger and downsizing process in the search for M&A success.

The purpose of this research was to proposed a causal model of employee engagement when confronted with mergers and downsizing. By performing a systematic literature review and combining theory-based reasoning with inductive data-interpretation, the causalities proposed in the model where evaluated in order to establish the status of their relationships. That is, the effect of mergers and downsizing on employee engagement and the mechanisms of contagion, resilience and anchoring & adjustment which regulate the engagement of employees. Consequently, the question was to assess the (non)existence of their causal relationships, and how they were linked.

The review analysis found that, as expected, mergers cause a decrease in the engagement of employees. While one article confirmed the direct relationship (Magano & Thomas, 2017) most studies provided evidence through job insecurity which resulted in feelings of anxiety and stress (Terry & Jimmieson, 2003; Seo & Hill, 2005; Sinkovics, Zagelmeyer, & Kusstatscher, 2011; Teerikangas & Välikangas, 2015; Sung et al., 2017). Consequently, the stress hinders the employee in being engaged at work since it distracts them of being focused on their tasks (Anthony-Mcman et al., 2017). On the other end of the spectrum, the review also found evidence for causality in positive appraisal of the merger. Where employees perceived the merger as providing opportunities for their careers, they became more optimistic and felt more engagement at work. Thus, depending on the appraisal of the employee the engagement would either increase (due to related optimism) or decrease (due to related anxiety). In addition to mergers, the findings showed that downsizing induces job insecurity, resulting in a drop in engagement. The insecurity causes feelings of exhaustion and cynicism, both core

dimensions of burnout (Cotter & Fouad, 2013; Shoss, Jiang & Probst, 2016). Additionally, the job demands increased (e.g. higher workloads) which further decreased the levels of engagement. A buffering effect of the merger and downsizing induced anxiety was found in the level of communication of the organization (Angwin et al., 2016). Depending on the frequency and richness of the messages towards the workforce, their insecurity and anxiety drops when both communication modes were high. Contagion seemed to occur through emotion focused coping ((Bakker, Emmerik & Van Euwema, 2006) and the expression of cynicism, where cynicism increased the amount of rumouring (Sinkovics, Zagelmeyer and Kusstatscher, 2011) thereby intensifying the contagion effect on engagement. Rumouring, in addition, was likely to decrease when the organization provided frequent and rich content regarding the merger and downsizing, because it mitigated the information deficiency among employees. Through Conservation of Resource Theory it was possible to explain the initiations of problem-focused coping to start the resilience effect: employees seek to preserve and acquire resources to deal with the loss in job and personal resources due to the merger and downsizing. The demonstration of resilience on the other hand, was found in research such as longitudinal studies indicating growth after initial drops (Grunberg et al., 2008). Moreover, there was evidence for the reciprocate effect: resilience, as personal resource, directly increased engagement (Cooke et al. (2016). Important here was the distinction between the form in which resilience occurred: engaging in problem-focused coping strategies showed positive developments in engagement (Amiot et al., 2001; Carmona et al., 2006) which were additionally intensified by the effect of the communication (Angwin et al., 2016). Conversely, avoidance coping had the opposite effect: decreasing the level of engagement (Greenglass & Burke, 2008). Lastly, while no direct evidence was found for changes in baseline in engagement, the purpose and functioning of the anchoring & adjustment mechanism was also found to be used in psychological contract violation models (Tomprou et al., 2015). To that end, inferring the mechanism to engagement enabled me to link the anchoring & adjustment heuristic from system dynamics to the current causal model. As for the applicability, studies reporting other *attitudes* not being able to recover to previous levels provided evidence for demonstration of such mechanism: baselines never fully recovered due to the severe impact of adversities (Turnley & Feldman, 1998; Allen et al., 2001; Grunberg et al., 2008).

By specifying the literature-based causal model to mathematical differential equations I was able to design four different scenario's or 'strategies' over time, that is, the 'Communication Champion', 'Top Down Management', 'Resilient workforce' and 'Disappointed workforce'. As it turned out, according to the model it is best for organizations to invest in (the development of) resilient employees in order to buffer the impact of mergers and downsizing as much as possible ('Resilient workforce'). This scenario demonstrated most recovery in the aftermath of the events. Although they perceived the merger as an opportunity, they received little communication and still remained more engaged than employees in the 'Communication Champion' strategy who's resilience effect needed more time to kick in but did receive frequent and rich (content-wise) communications. The 'Top Down Management'

strategy resulted in irreparable damage done to the engagement. The negligible effort of the organization to provide transparency regarding the events (depicted as low communication) combined with increased rumouring on the work floor due to information deficiencies were strong predictors of the irreparable damage. The ‘Disappointed workforce’ strategy illustrated that it might not be a good idea to temporarily profit from enthusiastic employees regarding the merger without letting them know a subsequent downsizing is approaching them. The disappointment felt after the positive appraisal of the merger resulted in a decrease in employees engagement, where the surprise of the layoffs increased rumouring and employees their ability to cope with the set-back.

5.2 Theoretical implications

To my best knowledge, this study is one of the first attempts to propose a causal model of employee engagement that includes situational (merger and downsizing), intrapersonal (engagement, resilience and anchoring & adjustment), and inter-group (contagion, communication, rumouring) variables. In doing so, multiple implications can be made. First, while the literature on engagement is abundant (Saks & Gruman, 2014), most of these studies only investigated engagement in cross-sectional settings. To build upon the argument of Weigl et al.’s (2010) that this ‘one-sided approach’ could misconstrue the role of engagement, this study underpinned the importance of approaching engagement in dynamic transformative contexts (Harney et al., 2018). That is, the present study demonstrated that engagement is an attitude which is in constant flux during transformations such as mergers and downsizing. A cross-sectional study would simply discover that the impact of a merger and downsizing decreases engagement, that related variables in certain modes such as timing, duration and magnitude either increases or decreases that impact, and that resilience and contagion increases and decreases engagement, respectively. The present study and simulation illustrates that these events and related mechanisms influencing engagement all play different roles on different moments in the duration of the events (and even beyond). For instance, where contagion of cynicism and emotional exhaustion takes longer to spread out across the organization (‘Communication Champion’) engagement shows more gradual changes as opposed to direct hits. The cross-sectional study would not identify this nuance, it would only find a correlation value between engagement and contagion including time as a moderator. To that end, the finding stresses the importance of the time dimension: as long as scholars study engagement in monocausal relationships, findings will be less representative for reality through ignoring the dynamic and temporal nature of engagement in transformative contexts such as merger and downsizing.

On the intrapersonal level, despite the fact that scholars have always associated the adaptation process of resilience with time, little research attempted to build models including resilience in dynamic systems (Britt et al., 2016). Consequently, the present causal model assigned resilience a position in

dynamic and transformative systems (i.e. downsizing and mergers), concluding that within the scope of this research changes in engagement can initiate problem-focused coping, ultimately increasing resilience effects and engagement. Interestingly, where literature dealt with factors either hindering or increasing resilience and processes (i.e. appraisal, coping and seeking help) that influence the trajectory (Britt et al., 2016), the findings of this study presents the process of *anchoring & adjustment* as fourth process to understand the recovery trajectory stemming from resilience. Resiliency aims for recovery towards a goal level (normally the original baseline), but the anchoring & adjustment system define the boundaries of the recovery by adjusting goal-levels depending on the current (engagement) level. This mechanisms thus adds the time dimension in resilience, in that the length of the recovery (resilience) trajectory is subject to the anchoring & adjustment process which regulates the goal-level over time.

Next to the role of anchoring & adjustment in relationship with resilience, the mechanisms also contributes to system dynamics theory itself. The anchor & adjustment mechanism has mostly been used in system dynamics for conscious *decision-making* situations (e.g. Sterman, 1989; Kleinmuntz, 1993; Georgiadis et al., 2005), since the mechanism was derived from the *decision* heuristic of Kahneman and Tversky (1974). Situations consisted of a decision-maker having to decide to increase or decrease a quantity (e.g. ordering materials) based on the expected demand of the quantity. Based on previous decisions or known quantities (i.e. anchor) and the current demand (i.e. current level) the decision-maker would adjust the quantity (i.e. the new decision) in order to achieve the goal-level. However, this study extends the use of the anchoring & adjustment mechanisms to *non*-decision-making situations with the presumption that the mechanism is also applicable to situations where individuals subconsciously use reference points for the adaptation process. This implication might also explain the psychological contract violation trajectories of Tomprou et al.'s (2015) model, in which an adjustment of baseline is described without mentioning anchoring & adjustment as mechanism regulating the psychological contract. Therefore, the current study contributes to system dynamics and psychological contact theory by linking them with the mechanisms of anchoring & adjustment.

Finally, the causal model gives an initial explanation to the frequently mentioned reciprocal relationships between engagement and resilience (Hakanen et al., 2008; Schaufeli et al., 2009). Most scholars identified the reciprocity, but only went as far as suggesting that engaged employees seem to be better at developing personal resources and that more resources increase engagement. Thus, this research suggests that the reciprocity can be explained through viewing engagement in a causal and circular relationship with resilience. To that end, the correlation found with resilience as an antecedent and as an outcome of engagement can be credited to the resilience loop, thereby extending resilience theory.

5.3 Practical implications

When managers consider to merge and downsize in the future, they should consider some of the findings of the present study. For instance, while contagion of negative feelings towards the intervention is fairly hard to manipulate, managers should not underestimate the magnitude of rumouring on the work floor. The contagion mostly occurs due to uncertainty about the situation and future of the company including their own job. To that end, managers should aim to communicate as clearly as possible what the ramifications of the merger and downsizing are. By letting the employees know what they could expect, less room is left for rumouring therefore reducing the amount of contagion.

To some extent it is impossible fully mitigate the decreased engagement when employees face mergers and downsizing. However, the way how employees cope with the situations does make it possible to faster bounce back the level of engagement. As found by the study there is an important difference between problem-focused coping and avoidance coping (Greenglass & Burke, 2000). Managers should therefore train, coach or offer programmes to employees in which they learn how to use problem-focused coping strategies as opposed to avoidance coping. Then, when employees face these interventions, the decrease of engagement can be buffered so that the engagement stays high in the organization.

5.4 Limitations

Like any other scientific study, this study was also subject to multiple limitations. The limitations are categorized as theoretical limitations and methodological limitations.

First and foremost, the proposed causal model is designed through theory-based reasoning and inductive-data interpretation. Accordingly, the validity of the model could be questionable since different scholars with different opinions could draw other inferences from the literature. Especially since the model pertains *causal* relationships, where most studies included are all performed in cross-sectional designs only accounting for correlations. Therefore, to tackle this issue longitudinal studies had the preference as they surpass cross-sectional studies in explaining causality (Britt et al., 2016). Still, the number of longitudinal studies on engagement and contagion, for instance, were limited.

Also, the ambiguity of the main construct engagement made it hard to precisely tackle which variables could influence the construct and which did not. As most studies regarding attitudinal constructs were focused on commitment, satisfaction and involvement, and they are highly correlated with engagement (Newman et al., 2010) it became hard to assess to what extent relationships towards those three attitudes differed from the ones towards engagement. I did use some evidence for the anchoring & adjustment mechanism by demonstrating the process of partial recovery with the three

attitudes (due to the lack of evidence concerning engagement). Still, others might argue that, even though some scholars have acknowledged the uselessness of engagement next to those ‘traditional’ attitudes, inferring arguments from these attitudes on engagement would still be incorrect. The debate around the position of engagement in literature is yet to be solved (Bailey et al., 2017; Turner et al., 2018).

In addition, while the causal model did incorporate appraisal theory regarding the merger, it did not so for the downsizing impact. Mostly, because the search inquiries did not provide articles dealing with appraisal when downsizing. Still with many iterations in searches, systematic reviews are very time-consuming and to restart the process after finding interesting constructs for the model was at some point beyond my ability. Still, I think that the appraisal construct will impact how the downsizing is perceived and to that end I stimulate future scholars to look into the difference in appraisal between mergers and downsizing to finally incorporate these different processes in the current model.

Regarding methodological limitations, the search terms used to form the search inquiries are very important for input of data. Even though much attention was paid to the design of search strings and multiple iterations were made to expand the search strings with relevant terms, the possibility still exists that relevant articles were not found due to less common terms used in studies and unclear categorizations of filters in databases (Simpson, 2009). Relatedly, the appropriateness of the selected inclusion criteria will always be subject to criticism since different criteria could lead to changes in the outcome of the research (Slavin, 1986). For instance, even after numerous iterations in the review procedure I discovered that I constantly had to balance the manageability of the number of articles against wanting to broaden the scope to find relevant articles.

The minimal number of articles is one more limitation to the study. There could be a couple of reasons for poor number of articles. One that I discovered during the analyses was the fact that the construct of engagement is hardly used in the merger literature (Teerikangas & Välikangas, 2015) and limited in the downsizing literature (see e.g. Datta et al., 2010). Most studies used other behaviours and attitudes of employees in their models (cf. Napier, 1989; Grunberg et al., 2008; Gandolfi & Hanson, 2011; Teerikangas, 2012; Harney et al., 2018). However, I tried to tackle the issue by identifying behaviours and attitudes linked to the dimensions of engagement (and burnout) mentioned in literature, through theory-based reasoning and inductive data-interpretation. On the one hand, this enabled me to draw some conclusions regarding engagement causalities. On the other hand, scholars might not agree with some of the argumentation since they are less verifiable due to the interpretive character of this approach. Another methodological limitation refers to the number of reviewers. Generally, it is strongly advised to conduct systematic reviews by two independent reviewers (Grant & Booth, 2009). This, in order to compare interpretations and findings to minimize error, resolve differences and produce more robust data (Denyer & Tranfield, 2009). The present study only had one reviewer and, although I attempted to offer as much transparency as possible by reporting all my steps in the research through

using a review workbook, I do have to acknowledge the limitation and possible bias for which articles were included in which did not.

Regarding the simulation, the most prominent limitation refers to the simplicity of the model. The model is far more simpler than reality, which limits the generalizability of the findings (Anderson & Lewis, 2014). There are many more variables highly important for the relationships proposed in the causal model, but I decided to leave them out in order to focus on a few loops and highlight the variables and their relationships of interest in the context of mergers and downsizing. Finally, the last limitation refers to the design of the equations. While I designed the formulas to my best abilities, they could still have been more accurate regarding the relative weights given to effects, if more empirical insight was found during the review.

5.5 Future Research Directions

Based on the findings of this research and limitations numerous future research directions can be presented. To start, the systematic literature review demonstrated that the amount of studies on *engagement* in the merger and downsizing context is limited, even more so for longitudinal studies. While this was an exploratory attempt to research engagement by using and testing more complex dynamic models of the reciprocal relationship between engagement and other constructs, the literature is still in its infancy and undoubtedly represents an important area for further theoretical and empirical development. To that end, I call for more longitudinal studies researching engagement in the merger and downsizing for two purposes. First, while the simulation provided interesting visualizations of the behaviour of engagement over time, the magnitude and effect sizes of certain relationships could become more accurate if there was more research which includes the time dimension in their design. Consequently, the ‘parameters’ could be used as input for simulations (Sterman, 2000). Second, if more longitudinal studies are conducted ‘with’ baseline measurements, we could learn more about the anchor & adjustment mechanism to compare engagement levels before, during and after the interventions. I do acknowledge that performing longitudinal studies in merger and downsizing context are not an easy task by and of itself, since these organizations may be less inclined to participate due to confidentiality or long-term participation (De Jong et al., 2016). I do, however, encourage scholars to engage in these kinds of studies since the academic field would greatly benefit from this kind of data.

Another interesting road to take regards the study population. In this study ‘survivor’ employees were the point of focus, where no distinction was made between survivors from the acquired company or the acquiring company. This had to do with the fact little studies have been performed where both merger and downsizing were taken into account. The merger literature does often make this distinction when studying human outcomes, finding that employees from the acquiring company will generally feel less anxiety as opposed to the employees from the acquired company (Panchal & Cartwright, 2001;

Guerrero, 2008), but downsizing literature only deals with the distinction between downsizing victims and survivors (Datta et al., 2010). To that end, it would be interesting to study the difference between the *survivors* from company A (acquired company) and company B (acquiring company). It could be the case that a survivor from the acquired company would experience more positive feelings when discovering not being let go when it initially thought so when being acquired. The survivors from the acquiring company might have expected not to be let go, therefore feeling less anxiety with the announcement of future lay-offs.

Finally, this was a first attempt to model causal relationships in mergers and downsizing context. For a long time scholars have called for more research on causality as the academic field over relies on cross-sectional designs (Bailey et al., 2017). To that end, I initiate a new movement to study causalities and I invite scholars to build upon the proposed causal model, may it be by studying one specific causal link in a longitudinal setting or quasi-experimental research design or by expanding the causal loop diagram model and fine-tuning relationships.

5.6 Ethics

For a literature review, as for any academic study in any discipline and research setting, researchers need to take appropriate measures to ensure the ethical standards of their work. In doing so, integrity and reliability is maintained. For guidance, many (international) associations have constructed frameworks to assist the academic community in respecting research ethics. The European Code of Conduct for Research Integrity (ECCRI) is one of them, listing the principles, good research practices and violations of research integrity (ALLEA, 2017). The fundamental principles of integrity are reliability (i.e. ensuring the quality of research), honesty (i.e. in developing, undertaking, reviewing, reporting and communicating research in a transparent, fair, full and unbiased way), respect (for colleagues, research participants, society, ecosystems, cultural heritage and the environment) and accountability (i.e. for the research from idea to publication) (ALLEA, 2017).

Regarding reliability, the research will be conducted with the best of care to ensure that the quality of the research is reflected in the design, the methodology, the analysis procedure and the use of public peer-reviewed articles. Additionally, the research will be supervised by respectable academics, ensuring that the research process stays on track for satisfactory results. Second, through transparency of the research methodology honesty will be preserved so that other academics could replicate the study and acknowledge the reported results. Third, in order to ensure respecting academic colleagues the study will correctly refer to the original authors and take no credit for findings other than the ones originating from this research. Finally, accountability will be guaranteed by making the research publically accessible through the thesis repository of the Radboud University Nijmegen (<https://theses.ubn.ru.nl/>). In this way, academics and others interested in the research can evaluate the study and hold the researcher accountable for misconduct.

5.7 Responsible Organizations

In the last decades there has been a shift in paradigm concerning the role of companies in society. Where organizations were historically seen as entities only seeking profit and operating for self-interest, modern society expects organization to take its social responsibility more seriously. This is reflected in the increasing demand by stakeholders to include Corporate Social Responsibility (CSR) into the strategy of organizations (McWilliams & Siegel, 2001) and the emergence of executive boards deciding to incorporate sustainability as a strategic pillar (Galpin, Whittington, & Bell, 2013).

Commonly, organizations engaging in mergers with subsequent downsizing are known to damage their reputation towards society (Zyglidopoulos, 2005). It is the impact on employees which is usually at the forefront of public debate when downsizing announcements are made public (Gupta & Sucher, 2018). When employees lose their job they experience psychosocial issues such as loss of a sense of identity, lowered self-esteem, marginalisation and alienation from society, reduced social contact and support, loss of networks and social stigma (Mathers & Schofield, 1998). However, the effects of the downsizing are also felt by the surviving employees. Even though these employees have the ‘privilege’ of staying with the organization, the importance of how to manage and treat the surviving employees should also be part of the social responsibility of the organization. As the current study indicates, engagement is strongly affected by mergers and subsequent downsizing. Where it lies in the interest of organizations to boost engagement to improve firm performance (Rich et al., 2010), it lies in the interest of the employees to boost engagement to enhance their well-being and job satisfaction (Harney et al., 2018). Both intentions, while different, strive for the same outcome: finding ways to increase engagement. Thus, for employee well-being organizations should take into account the importance of communications and ability of problem-focused coping to aid them with the negative effects of the initiatives. Organizations who do so, provide understanding and tools for their employees to deal with the adversities and avoid letting them develop ‘survivor sickness’ (Allen et al., 2001). Instead of only acting as a traditional employer offering money in return for labour as *quid pro quo*, organizations will improve their social responsibility by taking care of their employees.

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Appendix

Appendix I – Model Variables and Unit of Analysis

Variable	Unit
Merging	Dml
Merger timer	Dml
Merger size	Dml
Merger effect size	Engpoints
Effect of merger on employee	Engpoints
Downsizing	Dml
Downsizing timer	Dml
Downsizing size	Dml
Downsizing effect size	Engpoints
Effect of layoff on employee	Engpoints
Engagement	Engpoints
Decrease in engagement	Engpoints/month
Increase in engagement	Engpoints/month
Employee engagement gap	Engpoints
Normal employee engagement	Engpoints
Change in normal employee engagement	Engpoints/month
Employee engagement	Engpoints
Rumouring	Dml
Rumouring timer	Dml
Rumouring effect size	Engpoints
Communication	Dml
Communication timer	Dml
Communication effect size	Engpoints
Effect of Communication on employee	Engpoints
Appraisal	Engpoints
Job insecurity	Engpoints
Emotion focused coping	Engpoints
Problem focused coping	Engpoints
Cynicism	Engpoints
Resilience effect	Engpoints/month
Contagion effect	Engpoint/month

Appendix II – Scenario Configuration

		Scenario			
		1	2	3	4
Parameters	Appraisal (<u>O</u> ppportunity/ <u>T</u> hreat)	T	T	O	O
	Rumouring size	0.1	0.5	0.5	0.5
	Rumouring effect size	0.025	0.075	0.075	0.025
	Comm richness	0.75	0.25	0.25	0.75
	Comm frequency	0.75	0.25	0.25	0.75
	Contagion. time	9	7	9	7
	Time to return to normal	4	6	4	6
	Time it takes to l. morale	4	2	4	2
	Time to adjust to normal c.e.	30	18	30	18