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The Moderating Factor of Leader Time Pressure on the Relationship Between Team Time  
Pressure and Team Creativity

par  
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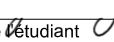
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Ma contribution à l'article est la revue de littérature et la conception théorique. J'ai aussi participé dans l'analyse des données.

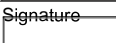
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## Résumé

Cette étude examine les antécédents contextuels de la créativité au sein des équipes en considérant l'effet de la pression temporelle autant sur l'équipe que sur le leader. Par le biais de la Conservation of Resource Theory (COR), nous conceptualisons la manière dont la pression temporelle chez un leader peut altérer sa capacité à transformer l'impact de la pression temporelle vécue par son équipe sur sa créativité. Les membres de l'équipe ainsi que les leaders ont rempli un questionnaire et ces derniers étaient invités à évaluer une seconde fois leur équipe respective, environ huit semaines plus tard. L'échantillon final se compose de données recueillies auprès de 51 équipes provenant d'une grande entreprise de services financiers. En se basant sur la modélisation par équation structurelle, l'analyse dévoile une influence significative entre la pression temporelle et la créativité chez une équipe seulement lorsque modérée par la pression temporelle du leader. Les résultats obtenus démontrent que la pression temporelle faible et modérée au sein d'une équipe peut avoir un effet positif ou négatif sur la créativité de l'équipe, en fonction de la pression temporelle vécue par le leader. Enfin, aucune corrélation significative n'a été observée lorsque l'équipe est soumise à une forte pression temporelle ni lorsque le leader est exposé à une pression temporelle modérée. Les implications et limites de notre recherche sont discutées.

**Mots clés :** Pression temporelle, Créativité, Équipe, Leadership

## Abstract

This study examines the contextual prior to creativity in teams by considering the effects of time pressure on both the team and the leader. Through the lens of Conservation of Resource Theory (COR), we conceptualize how leaders' time pressure can alter their capacity to transform the impact of the team's experienced time pressure, as well as on its creativity. Team members and team leaders completed surveys at the beginning of the work-integrated training program and leaders were requested to rate their respective teams at the end, approximately eight weeks later. The final sample was composed of data collected from 51 sales teams from a large financial service firm. Using the structural equation model, the analysis reveals a significant influence between *team time pressure* and *team creativity* only when moderated by *leader time pressure*. We also found that low and average *team time pressure* can have both a positive and negative effect on *team creativity* depending on the leaders' experienced time pressure. Finally, no significant correlation was found when teams are under high time pressure and when leaders are under average time pressure. Implications and limitations of our research are discussed.

**Keywords:** Time pressure, Team, Creativity, Leadership.

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## **List of Abbreviations**

COR – Conservation of Resource Theory  
CFA – Confirmatory Factor Analysis  
CFI – Comparative Fit Index  
TFI– Tucker-Lewis Index  
RMSEA – Root Mean Square Error of Approximation  
SRMR – Standardized Root Mean Square Residual  
AVE – Average Variance Extracted  
CR – Composite Reliability  
MSV – Maximum-Shared Variance  
ICC – Intraclass Correlation Coefficients

## Context

Creativity, as in generating new ideas and solving complex problems, has always been essential to the way we live and work as humans. Creativity is seen to have a positive effect on performance as it enables individuals to accomplish goals in a resourceful and original manner (Wang & Netermeyer, 2004). Within organizations, creativity has not always been seen as a “must”, yet in present day, it is understood as a necessity to be integrated in everyday practices and in organizational values (Brodherson *et al.*, 2017). In today’s globalized economy and fast-moving marketplace within a globalized economy, it all comes down to the most valuable resource in this knowledge dominated market: the teams and its creativity.

Creativity is increasingly needed in organizations (Landry, 2017). As the business environment becomes unpredictable, organizations are venturing into new sectors; competition is coming from unexpected places. Organizational sustainability is no longer only about being productive or profitable as the problems we face today are much more extensive, for which past solutions are now obsolete. For instance, companies that were able to thrive during difficult economic times (e.g., a pandemic) despite facing time constraints, high stress, and low resources are those in which creativity is a founding pillar of their work (Florida, 2019). Creativity can spur competitive edge and organizational growth (Groza, Locander, & Howlett, 2016) because it enables the organization to adjust to shifting environmental conditions and to take advantage of emerging opportunities (Oldham, 2003; Shalley, Zhou & Oldham, 2004). We need divergent and convergent perspectives and diversity of knowledge to create a bigger picture and a wide range of solutions; this is where team creativity comes into play.

Indeed, today’s organizational work is mainly oriented around teams (Harvey *et al.*, 2022) and this shift towards a team-centric approach is perceived as significant when discussing improved performance (Roy, Hauptmann & Durme, 2019). As companies try to move away from a traditional structure dominated by bureaucracy and silos of specialties towards more collaboration and agility, working in teams has become more prominent (Florida, 2019; McDowell *et al.*, 2016). Therefore, promoting creativity in teams and not only at the individual level is increasingly important as team creativity is more than the sum of individual creativity of members of the group (Taggar, 2002).

A team is not only required to be creative, it also has to do so within a shorter amount of time (Derue & Rosso, 2009) as creativity is highly influenced by internal and external factors (Amabile, 1996). Although research suggests that to be creative one must have time to think and explore different solutions, time is often not sufficiently abundant for teams to create (Andrews and Smith, 1996; Elsbach & Hargadon, 2006; Shalley and Gilson, 2004).

Consequently, the following Article 1 attempts to understand how time pressure influences creativity in teams. Specifically, this thesis by article explores a key moderating factor to the time pressure and creativity relationship in teams and answers the following question: how does leader's time pressure influence the effect that *team time pressure* has on team creativity? Given that teams are becoming more prominent in organizational work structure, this thesis by article will focus on a team level analysis and include the key element of leadership in the equation.

Article 1 begins with an introduction to the gap in prior research and is then followed by a conceptual background composed of a literature review of team leadership, leaders' role as a resource and as a model, time pressure in teams and its effect on creative performance. The Method and Results sections describe the specific methodological and statistical strategy for this analysis and present the results. The Discussion section explains the theoretical and practical contributions as well as highlights limitations and future research directions. Final thoughts are shared. It is important to note that the concepts "leader," "team leader" and "manager" are used interchangeably.

# Article 1

## The Moderating factor of Leader Time Pressure on the Relationship Between Team Time Pressure and Team Creativity

### 1.1 Introduction

Creativity is a key factor for survival for most companies (Shalley, Gilson, & Blum, 2000; Unsworth, 2001). As work is increasingly accomplished in teams rather than by individuals (Ilgen 1999; Kozlowski & Bell, 2003; Oldham & Hackman, 2010), and time pressure has become the new “normal” (Amabile *et al.*, 2002a), organizations have been relying on team creativity to respond to high market demands (Harvey *et al.*, 2022). Teams are therefore subjected to stressors and resources from the system in which they are embedded (Mumford *et al.*, 2002; Csikszentmihalyi, 1997). Under the conditions of time pressure, creativity is “a process that involves tensions among competing goals and demands” (Shao, Nijstad and Tauber, 2019:7). This implies that creativity goes beyond individual traits, and environmental and social factors also have an influence (Amabile *et al.*, 2004). Thus, managers and researchers have become interested in understanding if enablers or inhibitors of creativity identified at the individual level in research can spillover to team level interactions. Indeed, a set of principles does not inevitably apply across different levels of analysis since relationships observed at one level of analysis are not necessarily homologous or present at another level (Rousseau, 1985; Chen Bliese, & Mathieu, &, 2005). Accordingly, group dynamics may make obsolete or transform some levers which stimulate creativity.

Most of the research done on the time pressure—creativity relationship is dominated by studies at the individual level. From the findings we gather that time pressure can have either positive, negative or no effects on creativity. On the one hand, it can represent challenge and increase intrinsic motivation and efforts, yet it can also inhibit creative cognitive processes (Amabile, Hadley, and Kramer, 2002) as well as affect the development of ideas (Zhang, Zhang, and Song, 2015). On the other hand, under low time pressure, employees can feel very little stimulation which could lead to boredom (Gevers, van Eerde, and Rutte, 2001). A curvilinear relationship was also noted; it demonstrated how a moderate level of time pressure could be beneficial for creative performance (Bear & Oldham, 2006; Ohly, Sonnetag & Pluntke, 2006; Aleksić *et al.*,

2017) while other researchers have not found a correlation between time pressure and creativity (Amabile and Gyskiewicz, 1989).

Time pressure and creativity have been studied in teams albeit less extensively than at the individual level. At the team level, researchers tend to agree with what was found at the individual level in terms of the intensity of the time pressure and its effect on creativity. Positive effects of time pressure (from the beginning) on creativity are found to last over a short period of time (Johns, Morse & Morse, 2000). However, time pressure has also been seen to decrease the quality of creative work (Chirumbolo *et al.*, 2004) and constraining cognitive processes (Khedhaouria, Montani, & Thurik, 2017). This is why some believe that moderate levels of time pressure remain most beneficial to team creativity (Herdon, Shalley & Koseoglu, 2013) as it stimulates motivation and cognitive processes (Khedhaouria, *et al.*, 2017). From the research done at individual and team levels, it remains unclear if time pressure is a constraint or enabler of creativity. Therefore, identifying what factors may interact with *team time pressure* to promote team creativity is a fruitful avenue of research.

Leadership is one factor that is frequently correlated with team creativity (Amabile *et al.*, 2004). A leader is often defined as a resource (Zaccaro, Rittman & Marks, 2001; Hackman & Wageman, 2005; Hackman & Walton, 1986) or a model (Avolio and Bass, 1995; Rich, 1997; Yaffe & Kark, 2011; Eldor, 2021). Leaders can act as resources and adopt parameters that foster creativity by promoting knowledge and information sharing, and by coordinating the team's processes (Amabile *et al.*, 1996, Mumford, *et al.*, 2002; Volmer *et al.*, 2012). They can also act as models and enable creativity by setting an example that is motivating for those around them to carry themselves in a productive manner (Amabile, *et al.*, 2004; Hermann and Felfe, 2014).

Leaders are also seen as a tool to alleviate time pressure in teams. Although some researchers suggested that team performance is optimized when *team time pressure* is properly managed (Mohammed and Nadkarni, 2011) an important question remains: what happens when leaders are under time pressure?

Prior research ignores a significant variable in the dynamics between time pressure and creativity, that is the time pressure of the leader. As businesses change at a quicker pace, it is not uncommon to see leaders who are overwhelmed by the demands of the job or under time

pressure (Bruch and Ghoshal, 2002; Lovelace *et al.*, 2007). Time pressure may not only impact team performance, but also a leader's ability to lead. To date, the research on the implications of leaders' time pressure has been primarily limited to the impact on time pressure on individual outcomes. For example, a recent study conducted by Docì *et al.*, (2020), reveals that high time pressure compromises a leader's ability to lead. Another research done by Briker, Walter and Cole (2020) demonstrates that leaders under high time pressure can adopt authoritative behaviours and affect how subordinates perceive time pressure. Thus, given that team leaders' primary role is to "manage" those who report to them, there is a substantial gap in understanding the implications of leaders' time pressure. This has significant ramifications for organizations, given the massive influence that leaders wield over their subordinates (Edmondson & Harvey, 2017; Kozlowski and Ilgen, 2006).

As creativity is not always significantly correlated to time pressure, our research aims to clarify when and why *team time pressure* leads to positive or negative effects on team creativity. Drawing on creativity and performance literature, we identify key factors that explain why team needs differ, when influenced by time pressure. Through the lens of Conservation of Resources (COR) (Hofböll, 1989), we understand that leaders' time pressure will determine whether they can act as a resource or as a model for their team. Our findings reveal that leaders' time pressure is a key moderating factor between *team time pressure* and team creativity. When a team is under high time pressure, it will be more creative when its leader intervenes more in the structural process, acting as a resource. Yet, when the team is under low time pressure, its creativity will be stimulated when the leader acts as a model.

Our study makes several contributions to theory. It adds to the literature on time pressure and creativity at a team level by expanding our understanding of an important moderating factor such as leadership's time pressure. Joining the long-standing debate as to whether time pressure is good or bad for creativity, it answers "it depends." In this study, we leverage these findings to put forward a theory on the impact of leaders' time pressure and how it affects their ability to lead (as a resource or as a model) and influence a team's time pressure, thus enhancing or inhibiting team creativity. Practical avenues and future research are discussed.

## 1.2 Conceptual Background

Team leadership is a process of social influence and is highly contextualized (Kozlowski, Mak & Chao, 2016). Leaders play a crucial role in linking the team to its broader environment (Katz & Kann, 1978), and protecting the team from external constraints that can hinder its performance (Zaccaro *et al.*, 2001). Some examples of work settings in which team leaders influence team performance include Fortune's 500 stores (Chen *et al.*, 2007), construction sites (Tabassi *et al.*, 2017), R&D projects (Pirola-Merlo *et al.*, 2002), the army (Boies & Howell, 2006), intensive care units (Reader, Flin & Cuthberston, 2011), non-profit project teams (Couture and Harvey, 2021), and cross-sector innovation projects (Edmondson and Harvey, 2017). From a research point of view, the oldest theory on team leadership is functional leadership (Kozlowski, *et al.*, 2016). Interestingly, as opposed to other types of leadership, functional leadership does not consist of individual predispositions but rather the ability to mobilize “what needs to be done for effective performance” (Hackman & Walton, 1986: 77). From the literature on leadership, we can extrapolate two overarching roles: leaders as a resource and as a model.

Enacting leadership as a resource is reflected in situations where leaders engage in providing resources by structuring, planning, and setting goals or adding information through team monitoring. Among their multiple functions (for more examples see Morgeson, DeRue & Karam, 2009; Zaccaro *et al.*, 2001), leaders can plan and structure teams and therefore coordinate and build work plans to ensure that team efforts are directed towards the most pressing matters. Leaders can develop goal and task expectations as well as identify how work will be done, thus facilitating workflow (Morgeson *et al.*, 2009). It has been pointed out that team leaders acting as resources are in the best position to guide teams through new obstacles (Morgeson & DeRue, 2006) and play a crucial role in mobilizing collective effort towards a shared mission (Zaccaro *et al.*, 2001). Moreover, through monitoring, the leader can guide and oversee time/work progress as well as provide feedback (Amabile *et al.*, 2004). Feedback can cover internal processes, work-related or external information such as the ongoing market and organizational demands. It allows the team to assess performance and adapt accordingly (Einstein and Humphreys, 2001; Mohrman *et al.*, 1995; Kozlowski *et al.*, 1996).



Enacting leadership as a model involves the individual's role in shaping subordinates' values and behaviours, promoting motivation. Setting the example through role modelling is an essential leader function (Adair, 1973; House, 1977; Bass, 1985; Kouzes and Posner, 1987) because employees learn context appropriate conduct through social interactions, observations, and imitations (Bandura, 1977, 1986). For example, leaders lead their followers towards adopting fundamental values and moral codes which guide their work practices (Avolio and Bass, 1995; MacKenzie, Podsakoff, & Rich, 2001; Mayer et al., 2008) and performance expectations (work standards, respecting deadlines, maximizing time; Gupta & Singh, 2012:73). Moreover, by acting as a model, leaders can influence their followers' intrinsic motivation by internalizing and identifying with them (MacKenzie, *et al.*, 2001; Mayer *et al.*, 2008). Through identification with the leader and internalization of moral behaviours, team members become motivated (Yammarino, Atwater & Spangler, 2004) and more receptive to adopting prosocial behaviours (Walumba *et al.*, 2008). When observing the correct behaviour, subordinates are then more likely to perform in similar ways (Bandura, 1986; Shalley and Perry-Smith, 2001).

It is a truism that leaders may be unable to assume both roles, especially under high time pressure. Drawing from COR Theory (Hofböll, 1989) we suggest that leaders tend to follow strategies that correspond with their perceptions of loss or gain of resources (i.e., time and energy). In circumstances of loss of resources, individuals use resource-protection behaviours to prevent further loss. Conversely, they would be free to mobilize and reinvest in resources, for example their time, to specifically coach or gather new knowledge for the team. A factor that is relevant to determining how leaders perceive how busy they are is time pressure (Ordonèz and Benson III, 1997). For example, as demonstrated by Docì *et al.* (2020), when time pressure is high, leaders' ability to lead is compromised as resource protector behaviours are activated.

Leaders have both roles (model and resource) to fulfill; however, when under high levels of time pressure, it is more difficult for them to adopt the resource role. Yet they may still be able to influence the team in their model role. Indeed, not only does time pressure push leaders to engage in "positive" behaviours, which can be modelled, but also when under high time pressure, the model role may be more prevalent as it does not require more resources.

We apply this conception of team leadership: resource and model roles, for this study of time pressure and team creativity. Both roles play an essential part in motivating or inhibiting subordinates' creativity (e.g., Gupta and Singh, 2012). Acting as a resource can stimulate team creativity because of the added guidance and constraints which incite teams to focus their cognitive processes on creativity. Constraints promote creativity as they encourage diversity in problem-solving approaches (Stokes, 2001; Stokes and Harrison, 2002). Acting as a model can also stimulate creativity because by engaging in leading by example, the leader may shape team members' behaviour, and increase intrinsic motivation. In short, leadership functions either as a resource or as a model may modulate the relationship between time pressure and creativity, in that some functions may better respond to teams needs under certain time pressure.

### *Time Pressure in Teams*

Time pressure is conceptualized as a context in which task demands push team members to work harder and faster due to a short or close deadline (Ohly and Fritz, 2010). It is considered to be a key contextual factor that can influence performance (Van der Kleij *et al.*, 2008; Durham, Locke, Poon & Mclead, 2009) and creativity in organizations (Chirumbolo *et al.*, 2004).

High time pressure affects team creativity and performance positively or negatively. On the one hand, high time pressure may increase creativity if it is perceived as a challenge because it motivates higher cognitive flexibility and behavioural adaptability (Gutnick *et al.*, 2012). It can ultimately improve team performance (Pearsall, Ellis, and Stein, 2009). On the other hand, time pressure has also been shown to hinder creative cognitive processing, hence hampering the development of ideas, and leading to lower quality in creative work (West, 2002; Kelly and Karau, 1992; Kelly and Loving, 2004; Chirumbolo *et al.*, 2004; Khedhaouria, *et al.*, 2017). Time pressure is also an obstacle to the team's planning process (Van der Kleij, *et al.*, 2008; Morgeson and Derue, 2006) due to cognitive resources that are spread thin between task performance, managing time, worrying about completing a task and deadlines (Wine, 1971; DeCaro *et al.*, 2011). High time pressure can also hinder communication for groups engaged in creative work (Chong *et al.*, 2012; Chirumbolo *et al.*, 2004), because it decreases team members' motivation to share information and increases knowledge hiding (Škerlavaj *et al.*, 2018).

Clouding the understanding of the effects of time pressure on team creativity, research has also shown that low time pressure is negatively correlated with creativity as this condition provides very little stimulation and affects intrinsic motivation (Amabile *et al.*, 2002). Optimized creativity is dependent on readiness, arousal or challenge which seems to be absent under low time pressure (Singh, 1998). Since time pressure can serve as a mechanism to determine pace of work (e.g., Kelly and Karau, 1999; Kelly and McGrath, 1985), team members under low time pressure are not driven by a stimulation that activates the motivation to seek out the unfamiliar and new, leading to less creative outcomes (Bear and Oldham, 2006).

As a result, some research noted that moderate time pressure is best for creativity as it leads to an increase in activation and challenge, affecting cognitive and behavioural responses, improving team motivation towards new and original ideas (Kelly and McGrath, 1985; Herdon *et al.*, 2013; Khedhaouria *et al.*, 2017). When time pressure is at mid-level, negative effects on creativity caused by under- and over-stimulation seem to be avoided.

All in all, there seems to be a lack of consensus on the *team time pressure*-team creativity relationship, and this may be due to the presence of important moderators that have not yet been explored. Indeed, although done at the individual level, Bear and Oldham (2006) study reports that specific moderators are key in determining if time pressure and creativity are positively or negatively related; leader support being one of them. As for research done at the team level, the leader is also identified as a moderator of time pressure and team performance (Mohammed and Nackarni, 2011; Maruping *et al.*, 2015). In both cases, the leader as a moderator has not yet been studied when under time pressure. Consequently, we must first and foremost explore *leader time pressure* because this can influence the leadership functions that the leader can fulfill. Depending on the level of time pressure in the team, the time pressure experienced by the team leader can become paramount because it can limit the leader's ability to act as a model and as a resource. Therefore, we posit that *leader time pressure moderates the relationship between team time pressure and team creativity*. As illustrated by Table 1, we cover four different situations at high/low levels of time pressure for the team and for the team leader.

**Table 1**  
**Four Context Under Which the Team and the Leader at High/Low Time Pressure**

		Team Time Pressure	
		Teams under high time pressure	Teams under low time pressure
Leader Time Pressure	<b>Leaders under high time pressure</b> have depleted resources (i.e., time and energy) tend to adopt the model role functions.	<i>Team time pressure</i> has a <b>negative</b> effect on team creativity because the team is too busy to observe and be influenced by the leader.	<i>Team time pressure</i> has a <b>positive</b> effect on team creativity as the positive behaviors that the leader is exemplifying can be replicated by the team members.
	<b>Leaders under low time</b> have more time and the energy and tend to adopt the resource role functions.	<i>Team time pressure</i> has a <b>positive</b> effect on team creativity because the constraints added by the leader helps the teams to focus on priorities, assures better communication and knowledge sharing.	<i>Team time pressure</i> has a <b>negative</b> effect on team creativity as the leader may be under stimulated or may be provided too many resources.

*High Team Time Pressure and Low Leader Time Pressure*

We first consider when the team is under high time pressure, and the leader is not. For example, the housing market shifted due to the pandemic which has created a boom in the house insurance industry. Teams under high time pressure are overwhelmed as they try to respond to the demands. However, they are also focused on closing contracts or “getting things done”. In doing so they lose touch with other team members. Under this condition the team can be more efficient when the leader who is under low time pressure can act as a resource by organizing team meetings, creating fluid schedules and facilitating communication. Instead of losing time on planning, team members can share tips and tricks on how to adapt sales to clients’ needs.

The example above illustrates that teams under high time pressure need constraints to compensate for the cognitive strains and limited resources. As such leaders under low time pressure are best suited to support the team since they have the time to monitor and to assess how to reduce constraints that have an impact on cognitive resources (i.e., time pressure) as well as increase constraints that promote cognitive resources (i.e., procedural instructions, clear goals) (Roskes, 2015). First, through coordination and decision-making on priorities, the leader acting as a resource can counteract the loss of the team’s resources by optimizing time management.

Consequently, the leader reduces the collective load, thus allowing the team to focus its energy and time on creative cognitive processes.

Second, by structuring communication in the team, a leader can facilitate team proximity through better scheduling. In doing so, the leader can stimulate knowledge and information sharing which play an important role in team creativity (Dong *et al.*, 2016; Ali *et al.*, 2019). Thus, when the team is under high time pressure and the leader is not, we suggest that the interventions provided by the leader who can act as a resource can help teams benefit from high time pressure, hence stimulating team creativity.

H1: High *team time pressure* has a positive effect on team creativity when *leader time pressure* is low.

#### *High Team Time Pressure and High Leader Time Pressure*

Consider the previous example of a team that is under high time pressure. To that scenario add a new objective that would add more time pressure to the leader's agenda. For example, recovering car insurance premiums since the premiums related to the kilometres used by the clients were significantly decreased during the pandemic. In this case, teams are left to be more independent from the leader as a leader who is under high time pressure is likely to focus on his/her own tasks. On the other hand, since this situation has not yet been encountered, teams may try to create new paths and solutions instead of following existing work processes.

As portrayed in the previous example, teams under high time pressure need additional guidance; however, teams cannot benefit from the leader in the resource role because the leader is too busy. Indeed, leaders only have a set amount of resources per day (i.e., time and energy) (Bergeron, 2007). Once their personal resources and time are spent on their own task demands, the remaining resource to monitor teams' performance (resource role), becomes scarce (Quinn, Spreitzer, and Lam, 2012).

On the flip side, a team under high time pressure cannot benefit from the leader as a model either, because the busier the team is, the less room it has of being influenced, as all its resources (i.e., attention and time) is used on completing tasks. Consequently, teams will not be likely to reproduce the positive behaviours set by the leader if they are not available to first observe and

learn from them. Thus, although some research supports that time pressure increases effort and stimulation of creative cognitive processes, we propose that when the team and the leader are under high time pressure, the lack of intervention and resources due to the leader's busyness can turn high time pressure into a negative factor for the team, hindering team creativity.

H2: High *team time pressure* has a negative effect on team creativity when *leader time pressure* is high.

### *Low Team Time Pressure and Low Leader Time Pressure*

Next, consider a team under low time pressure, for example when working in retail during a low peak season, very low in stock, no clients for hours and the store is clean. Team members are prone to have personal conversations (e.g., talk about weekend plans) and tend to huddle in a corner even though non-sale tasks are not completed. Alternatively, they could be changing the mannequins to create outfits with items that do not sell well.

The previous scenario illustrates how in general, individuals need a reason to be busy, otherwise they gravitate towards idleness (Yang and Hsee, 2019) or procrastination (Pierro *et al.*, 2011). As such, this may be why no particular impetus is observable from a team under low time pressure, and this needs to be addressed. One way to increase a team's drive towards action is by increasing its arousal levels and this can be done through the leader. As supported by entrainment theory (Kelly and McGrath, 1985), the leader's pace can influence the team's pace of work. When both the leader and their teams are under low time pressure, teams will remain under-stimulated, which is found to have a negative effect on creativity.

Moreover, teams under low time pressure have the time to explore, to build their own resource toolbox and to coordinate workflow. Similarly, in instances where leaders under low time pressure are available and motivated to invest in their teams by monitoring and identifying the resources and the structure needed for team performance, they can have a negative effect on their teams. In this scenario, teams will have too many resources readily available which may inhibit creativity, whereas lacking resources stimulates people to think outside of the box, find new solutions or avenues to pursue to solve a problem (Csikszentmihalyi, 1997). Thus, we suggest that when both leaders and teams are under low time pressure, the added constraints that the

leader can offer as a resource can turn low time pressure into a negative for a team and ultimately hinder its creativity.

H3: Low *team time pressure* has a negative effect on team creativity when *leader time pressure* is low.

#### *Low Team Time Pressure and High Leader Time Pressure*

Finally, consider the previous example where teams are under-stimulated but with a leader under time pressure to meet monthly objectives. The leader will most likely change the floor set to make it more appealing to customers and to make stock appear as abundant. Teams could be inspired by their leader and actively try to replicate such changes in other sections of the store.

Less busy teams have room to be influenced on how they accomplish their task; therefore, the leader's level of busyness can be motivating for teams that have the time to witness and be inspired by it. Although teams tend to "take it easy" when under low time pressure, through entrainment, a leader's pace can influence followers by elevating their level of stimulation as the leader's perception of time pressure can influence that of the team (Yulk and Van Fleet, 1992); increasing the team's arousal to a moderate rather than low arousal can stimulate creativity. As a result, subordinates can perceive leaders' behaviours as an example of "great personal risk, cost and energy" and as "worthy of imitation" (Conger and Kanungo, 1987: 641 & 642).

Apart from stimulating the team, an external model can also shape subordinates' behaviours. For example, leaders' proactive goal regulation behaviours stimulate high subordinate performance (Wang, Kim and Jiang, 2021) and such types of behaviours are seen to stimulate creative behaviours (Seibert *et al.*, 2001). Indeed, through identification and observation of the leader's behaviours, team members can become intrinsically motivated to go beyond what is asked, to seek challenges and also to think outside the box (Wang, 2016). Therefore, whether it be through modelling behavior for maintaining momentum or dealing with obstacles, followers can learn, from observing their leaders, how to constructively work with tensions (Zhang, .Y., *et al.*, 2015; Shao *et al.*, 2019; Bandura, 1986; Shalley and Perry-Smith, 2001). Thus, when the team is under low time pressure and the leader is not, we propose that by embodying positive behaviours and

increasing the team's motivation and arousal levels, the leader who can act as a model can turn low time pressure into a positive for the team, thus stimulating team creativity.

H4: Low *team time pressure* has a positive effect on team creativity when *leader time pressure* is high.

## **1.3 Methodology**

### *1.3.1 Participants and Procedures*

To test our hypotheses on the moderating effect of *leader time pressure* on the team's time pressure – creativity relationship, we conducted a time-lagged study in which we collected data from teams and their leader in a large financial service firm through surveys. Our interest in investigating this firm was instigated by the major changes it was going through which could open opportunities to bid in new markets but could also impact a team's creativity. Indeed, on top of their regular workload, this firm chose to put their teams through a 12-week work-integrated programme, created by an external consulting firm, to support changes in sales methods, scripts and tools while launching new services. Both team members and leaders were invited to participate. The firm granted us permission to collect data and asked us to provide an impartial analysis.

Furthermore, we had to determine whether sales teams in this firm corresponded to the conceptualization of “real teams” (Harvey, Johnson, Roloff, and Edmondson, 2019) to justify the aggregation of data for our study. To do so, we compiled evidence through discussion with management to identify three key components: task, goal and reward interdependence. Although team members completed customer services calls alone, other core tasks seemed to be done in collaboration. Team members work together towards their goals by assuring workflow through planification and contribution to group sales knowledge. Moreover, human resource practises confirmed that teams were also remunerated when they achieved team goals. Therefore, considering the above information, we decided to go forward in identifying the teams in the sample as “real teams.”

Participation in completing the survey was strictly on a volunteering basis and kept confidential as we used non-identifying codes to aggregate data across the surveys to conduct our analysis.



As we initiated data collection, 749 salespeople working on 81 teams were participating in the training program. The study involved data collection of surveys completed individually at two-time points (T1 and T2). At T1, the independent variable (*team time pressure*) was measured using a survey completed by team members and the moderator (*leader time pressure*) was measured using a survey of team leaders at the beginning of the program. At T2, approximately eight weeks later, the dependent variable (team creativity) was measured using a survey completed by team leaders. We collected data from 64 (T1) and 62 (T2) team leaders and 583 (T1) team members. Based on Dawson's (2003) sampling theory, we used a cut-off participation rate for each team based on its size (e.g., three out of seven), and accordingly a total of 51 teams and their leaders were retained for our analysis, which represents 63% of the initial sample.

### 1.3.2 Measures

*Leader Time Pressure & Team Time Pressure:* At T1, *leader time pressure* and *team time pressure* were measured using the same four items derived from Roxburgh (2004). A sample of the items are as follows: "At work, you feel pressed for time," "At work, you are often in a hurry." Answers were ranked on a Likert scale ranging from "strongly disagree" (1) to "strongly agree" (5). Items formed a single scale with an  $\alpha$  of .93 for leader time pressure and an  $\alpha$  of .97 for team time pressure. Both team leaders and team members completed the survey individually, however, we asked the team members to rank their answers while picturing their overall experience, including their fellow team members, to compensate for the difference between individual and team variance. To facilitate this task, we modified the vocabulary from "You" to "Your team" for the *team time pressure* items in the questionnaire.

*Team Creativity, T2.* At T2, only team leaders were invited to rate their respective team's creativity using three items derived from those developed by Zhou and George (2001). Items included in the survey are the following: "comes up with new and practical ideas to improve performance," and "suggests new ways of performing work tasks". Answers were ranked on a 7-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (7). Items formed a single scale ( $\alpha = .76$ ).

*Control Variables.* Control variables were also included in our analysis to test whether the interactions remain regardless of the following : team size, age of the team leader and gender of the leader. We controlled for *team size* because past research has revealed that it can have an important impact over team behaviours and team outcomes (Hackman, 2002). This variable was based on the total number of members on a team (ranging from three to 18). We also controlled for the age of the team leader because this can also influence leadership. For instance, age has been associated with differences in communication patterns (Raeissi, Kalhor and Azmal, 2010), so we controlled for *leader age* (1 = 25-34; 2 = 35-44; 3 = 45-54; 4 = 55 and over). Data ranged from 2 to 5 so we eliminated the first group. Additionally, as women tend to have higher levels of agreeableness than men (Costa Jr and McCrae, 1992), we also controlled for leader gender (0=male; 1= female) especially since this sample is mainly composed of women leaders.

### 1.3.3 *Validity and Aggregation of Survey Data*

*Testing for common method bias.* We first tested for common method bias because some of the data was collected from the same respondents or using the same tool (i.e., surveys). To do so, we began by using Harman's one-factor test (Podsakoff & Organ,1986). Results of the principal factor analysis constrained to one factor on all items responded by team leaders yielded a less than 50 % variance explained; indicating the absence of common method bias (Roni, 2014:42). A second test was also conducted to detect a possible method bias. As recommended by Podsakoff et al. (2003), a confirmatory factor analysis with a single common latent factor was run on all items and other latent factors. Results failed to confirm a common method bias. No items loaded on the common latent factor and factor loading remain significant on their respective latent factor. Together these findings suggest the absence of a common method bias.

*Confirming validity of measures.* We then investigated the factorial structure of our three latent constructs of team time pressure, leader time pressure and team creativity. A CFA was conducted to verify the construct validity of these measures. First a 3-factor model to verify the presence of three latent constructs as theoretically hypothesized which results confirmed goodness-of-fit indices. A first model was tested yielded satisfactory goodness-of-fit indices for a three-factor model of the data:  $\chi^2(41) = 47.122$  ( $p = .236$ ), comparative fit index (CFI) = .988, Tucker-Lewis index (TLI) = .984, root mean square error of approximation (RMSEA) = .054, and standardized

root mean square residual (SRMR) = .068. We tested an alternative model where both types of team time pressure and leader time pressure were constrained to load onto the same latent variable. The chi-square difference test shows a significant result which provides evidence for the first three-factor solution as the best fit for the data ( $\Delta\chi^2 = 173.85$ ,  $\Delta df = 2$ ,  $p < .001$ ).

Reliability as well as convergent and discriminant validity were examined using each latent constructs average variance extracted (AVE) and composite reliability (CR). The convergent and discriminant validity were found and demonstrated that all AVE values were acceptable as they exceeded .5 (Hair *et al.*, 2014) : AVE at .899 (*team time pressure*), .778 (*leader time pressure*), .524 (*team creativity*). Most CR values were in the acceptable range of .8 and above (Hair *et al.*, 2014) : CR ranging from .764 (*team creativity*) to .973 (*team time pressure*). Furthermore, additional indices also confirmed convergent and discriminant validity as AVE values greater than their respective maximum-shared variance (MSV), and the square root value of each AVE is higher than the correlation value with any of the other latent variables. Thus, the psychometrics tests confirm the factorial structure, the reliability as well as the convergent and discriminant validity for our measures.

*Aggregating data.* Since data for team time pressure was collected through surveys that were individually completed and subsequently compiled, we tested to determine if it was appropriate to aggregate the data. This was done using interrater agreement scores ( $r_{wg(j)}$ ) to test whether the variance of response intra groups was lower than the variance inter groups (James *et al.*, 1993; LeBreton *et al.*, 2003). ANOVA yielded an acceptable score of  $r_{wg(j)}$  score (.81) way above the recommended threshold of .70, as recommended by (George & James, 1993). We assessed the variance explained by team members and the reliability of team means by calculating intraclass correlation coefficients ICC (1) and ICC (2) and found the following:  $ICC(1) = .16$ ,  $ICC(2) = .58$  ( $F = 2.40$ ,  $p < .001$ ). Considering our obtained results from the performed tests, their satisfactory values, and the small team sizes within our sample (LeBreton & Senter, 2008; Shieh, 2016) we proceeded in aggregating our data from individuals to teams.

#### 1.3.4 Analytical Strategy

Our hypotheses were tested using structural equation modelling (SEM; Bollen, 1989) using maximum-likelihood. Structural equation modelling allows for multiple equations to be estimated simultaneously (Ullman and Bentler, 2003), therefore, it was an applicable framework to utilize as our study carried hypotheses with multiple variables, which are dynamic and multifaceted. An interaction term was calculated using double mean centring as recommended in Lin, Wen, Marsh, and Lin (2010). The double-mean centring strategy was appropriate for our study as it takes into account that our sample violates the normal distribution assumption, which is the case for our leaders, being that their time pressure scores are positively skewed (Lin, Wen, Marsh, and Lin; 2010). The model tested *team time pressure*, *leader time pressure*, and their interaction term (allowed to covary freely) to predict *team creativity*.

We analyzed the Model fit indices to determine if our theorized model fits the data. Model fit indices helps estimate how likely hypothesized findings may be generated depending on the adequacy between our structural equation model and our collected data (Singh, 2009). Our model achieved satisfactory fit results ( $\chi^2(84) = 96.257$ ,  $p = .170$ , CFI = .980, TLI = .976, RMSEA = .053, SRMR = .077), which lead us to determine that it was appropriate to consider our hypotheses.

## 1.4 Results

Descriptive statistics and correlations are shown in Table 2.

**Table 2**  
**Descriptive Statistics and Bivariate Correlations**

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. <i>Leader Age</i>	2.55	1.05	-					
2. <i>Leader Gender</i>	.76	.43	.20	-				
3. <i>Team Size</i>	9.92	3.52	-.12	.06	-			
4. <i>Leader Time Pressure</i>	3.99	.88	.13	.26	.05	(.93)		
5. <i>Team Time Pressure</i>	3.74	.52	.44**	-.05	-.22	.03	(.97)	
6. <i>Team Creativity</i>	3.71	.60	-.19	-.14	.17	.30*	.06	(.76)

*Notes.* n = 51 teams; \* p < .05; \*\* p < .01.

In our study, we strive to discover the combination and interaction of our three variables: *team time pressure*, *leader time pressure* and *team creativity*. Through regression analysis of our model, we found that 1) *team time pressure* is not correlated with *team creativity*, 2) *leader time pressure* is correlated to *team creativity* ( $b = .358$ ,  $s.e. = .130$ ,  $p < .01$ ), and 3) *team time pressure*  $\times$  *leader time pressure* is associated with *team creativity* ( $b = -.598$ ,  $s.e. = .206$ ,  $p < .01$ ). Then, we further investigated the interaction by conducting Johnson-Newman technique to identify regions of significance along the continuous simple slope of the moderator (*leader time pressure*), meaning where the relationship between the independent variable (*team time pressure*) and the dependent variable (*team creativity*) become significant. We discovered two regions of significance where both 95% confidence intervals are either below or above the mean at the same time: 1) *team time pressure* had a negative effect on *team creativity* at .70 SD above the mean of *leader time pressure*, and 2) *team time pressure* had a positive effect on *team creativity* at -.25 SD and under (see Figure 1 for a pictorial illustration).

The regions identified above, with 95% interval, explain 24% to 40% of a population based on the assumption of normal distribution. Given that in our sample leader time pressure is slightly skewed to the right (indicating high time pressure; being of a mean of 3.99 on a 5-point scale,

s.d. = .88), the regions of significance set at .70 SD and -.25 SD from the mean, contain respectfully 30% and 33% of the team leaders. Concretely, out of our sample of 51 teams, leader time pressure affects the relationship between team time pressure and team creativity for 32 out of 51 and of those 32 teams, 17 benefit from time pressure and 15 are hindered from it.

**Figure 1**  
**Illustration of the Slope of Team Time Pressure on Team Creativity at Different Values of Leader Time Pressure (Zones of Significance = .70 SD and above, and -.25 and under)**

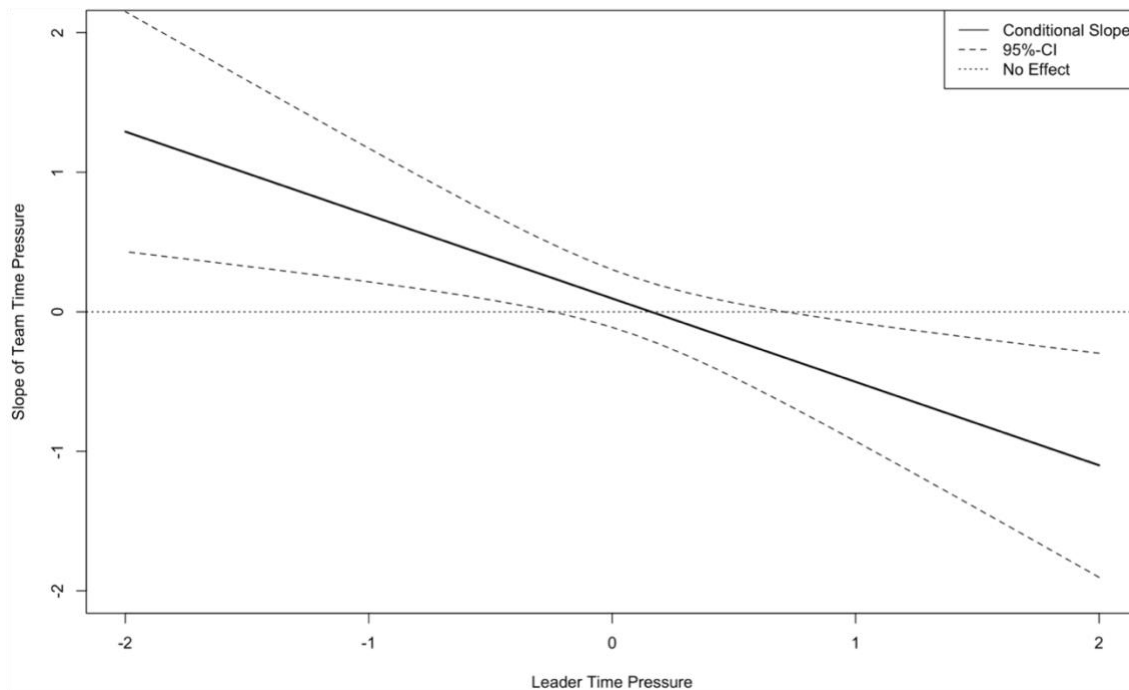


Table 3 as well as Figure 2 demonstrates a further interpretation of this interaction. We categorized both *team time pressure* and *leader time pressure* into high (one SD above the mean), average (the mean), and low (one SD below the mean) levels to estimate the effect on *team creativity*. We find positive or enhanced *team creativity* when *team time pressure* is average and *leader time pressure* is low (*estimate* = .639 [.214, 1.171]), and a negative estimate of *team creativity* when the *leader time pressure* is high (*estimate* = -.394 [-.928, -.076]). Although it is in line with our theorizing of the leader as a resource, the level of time pressure in teams differs from what we attempted to predict with Hypothesis 1 and Hypothesis 2. Originally, we supposed that the trends observed in the interaction between *team time pressure* and *team creativity* moderated by a leader as a resource would occur at high team time pressure levels, yet

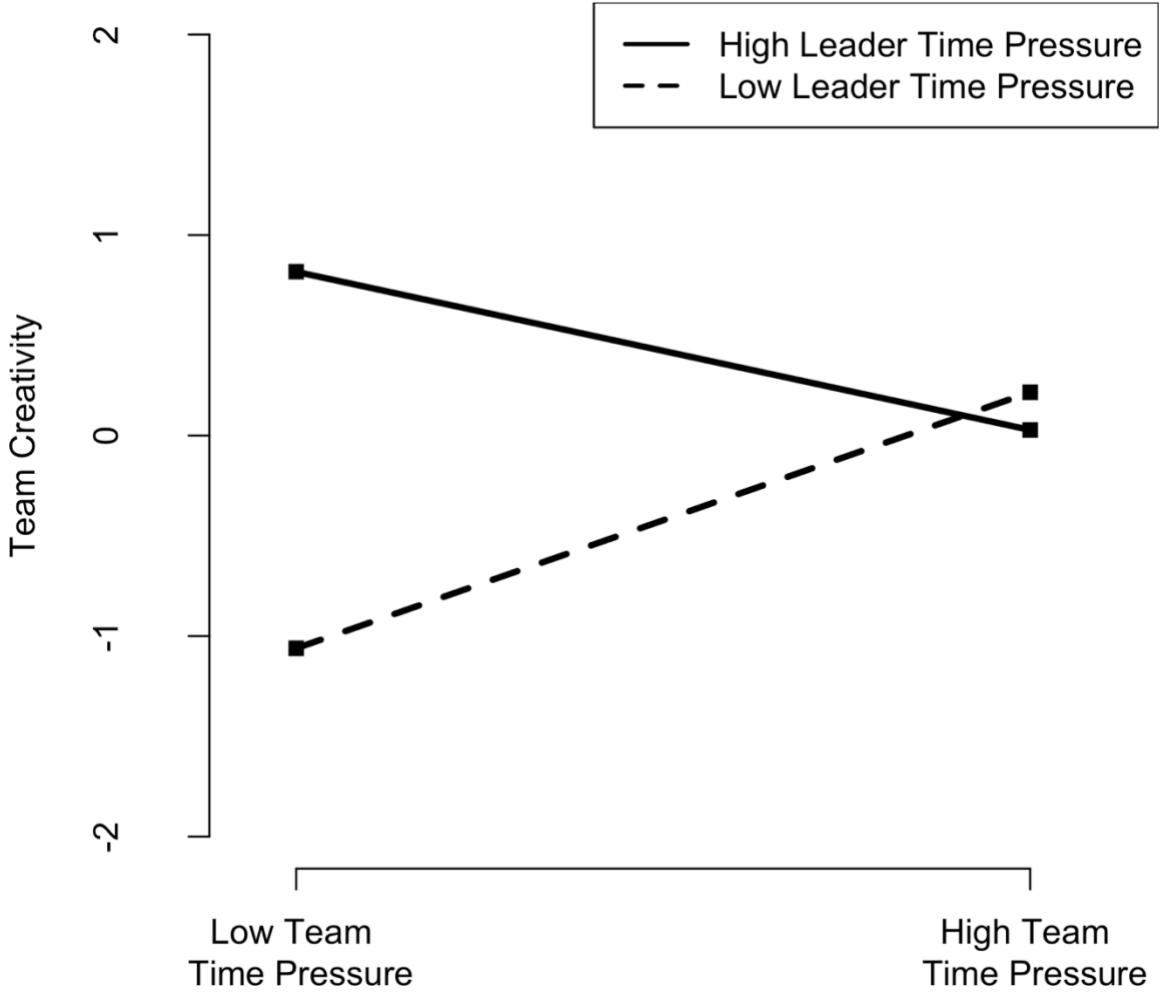
our data reveals otherwise. Results show no significant estimate of *team creativity* when *team time pressure* is high, regardless of whether the *leader time pressure* is low or high. Therefore, the results disconfirm Hypothesis 1 and Hypothesis 2 since no significant interactions were found when teams are under high time pressure but rather when under average time pressure. On the flip side, in line with our theorizing of the leader as a model, the estimate of *team creativity* is negative when *team time pressure* is low and *leader time pressure* is low (*estimate* = -1.061 [-1.646, -.456]), but it is positive when *leader time pressure* is high (*estimate* = .817 [.319, 1.402]) supporting Hypothesis 3 and Hypothesis 4. Lastly, results show that when leaders are at average time pressure there is not significant estimate of *team creativity* at any levels of *team time pressure*.

**Table 3**  
**Estimated of Value of Team Creativity under conditions of High, Average, and Low Values of Team Time Pressure and Leader Time Pressure**

Team Time Pressure	Leader Time Pressure	Estimate (sig.)
High	High	.028 (p = .527)
High	Average	.122 (p = .367)
High	Low	.216 (p = .174)
Average	High	-.394 (p = .021)*
Average	Average	.122 (p = .367)
Average	Low	.639 (p = .005)**
Low	High	.817 (p = .002)**
Low	Average	-.122 (p = .367)
Low	Low	-1.061 (p = .001)***

*Notes:* n = 51 teams; All regression coefficients are based on standardized variables with mean = 0 and S.D. = 1. \* p ≤ .05; \*\* p ≤ .01; \*\*\* p ≤ .001

**Figure 2**  
**The Effect of Team Time Pressure on Team Creativity at Low and High Levels of Leader Time Pressure**





Finally, we wanted to test whether our model’s effectiveness remains statistically significant even when excluding control variables. Our findings passed the robust check test as we did not find any improvement in our model; the modification of the coefficients and their statistical significance are minimal (see Table 5). Thus our findings illustrate that the results from our model are comparable with and without control variables. The results of our model are below in Table 4.

**Table 4**  
**Results of Full Model using Structural Equation Modeling**

<b>Team Creativity</b>		
	b (s.e.)	p
<i>Team Time Pressure</i>	.095 (.106)	.367
<i>Leader Time Pressure</i>	.358 (.130)	.006
<i>Team Time Pressure x Leader Time Pressure</i>	-.598 (.206)	.004
<i>R</i> <sup>2</sup>	.385	
Goodness-of-fit indices: $\chi^2(84) = 96.257$ ( $p = .170$ ), CFI = .980, TLI = .976, RMSEA = .053, SRMR = .077		

*Notes:* n = 51 teams; All regression coefficients are based on standardized variables with mean = 0 and S.D. = 1.

**Table 5**  
**Results of Full Model using Structural Equation Modeling (with Controls)**

	<b>Team Creativity</b>	
	b (s.e.)	p
<i>Leader Age</i>	-.225 (.112)	.045
<i>Leader Gender</i>	-.064 (.106)	.543
<i>Team Size</i>	.127 (.099)	.198
<i>Team Time Pressure</i>	.202 (.116)	.081
<i>Leader Time Pressure</i>	.396 (.129)	.002
<i>Team Time Pressure x Leader Time Pressure</i>	-.550 (.194)	.005
<i>R</i> <sup>2</sup>	.501	

Goodness-of-fit indices:  $\chi^2(117) = 149.587$  ( $p = .023$ ), CFI = .951, TLI = .935, RMSEA = .074, SRMR = .073

*Notes:* n = 51 teams; All regression coefficients are based on standardized variables with mean = 0 and S.D. = 1

## 1.5 Discussion

We examined the relationship between *team time pressure*, *team creativity* and *leader time pressure*. We found that *leader time pressure* moderates the effect of *team time pressure* on *team creativity* by acting as a model or as a resource, such that the indirect effect will be positive (negative) when leaders are less (more) under time pressure. Drawing on COR, we highlighted two roles that managers can play in their teams, that of model or of resource, and how these roles can vary according to the context.

### 1.5.1 Theoretical Implications

Our study contributes to the existing literature on time pressure and creativity. As previous studies on time pressure found mixed results regarding the relationship between time pressure and creativity (Gutnick *et al.*, 2012; Chirumbolo *et al.*, 2004; Khedhaouria *et al.*, 2017; Herdon *et al.*, 2013), our results afford some additional nuances.

Contrary to past research, our results reveal no significant correlation at high time pressure but instead we found similar trends were observed in teams under average time pressure. Indeed, according to prior research high time pressure tends to sway between hindering and enhancing creativity (Gutnick *et al.*, 2012; Chirumbolo *et al.*, 2004), whereas average time pressure influences creativity positively (Herdon, *et al.*, 2013; Khedhaouria, *et al.*, 2017). A possible explanation could be that papers that support that average time pressure is good for creativity have not yet taken into account the leader's time pressure. Another avenue is to consider the origin of the data as the experience pressure might differ depending on the field of work. Indeed, what is considered abnormally eventful or not can skew the results between the perception of average and high time pressure (Flaherty, 1991) and differs from one industry to another. Thus, although we did not initially propose to investigate the interaction between *team time pressure*, *team creativity* and *leader time pressure* when *team time pressure* is average, our findings contribute to the literature as it offers a new perspective to the outcome of average time pressure in teams.

When teams are under low time pressure, research shows that low time pressure had a negative effect on creativity; however, we found effects can be positive or negative. When both team and

leader (i.e., acting as a resource) are under low time pressure, there is a negative effect on *team creativity*. Yet low *team time pressure* has a positive effect on *team creativity* when *leader time pressure* is high (i.e., acting as a model). As a model, leaders can exemplify expected behaviours and stimulate the team's intrinsic motivation and active engagement which drives creativity. A more specific example would be due to entrainment the leader can either increase or decrease the subordinate's activation towards creativity. Although this was not specifically measured in this study, it was observed in other studies (Briker *et al.*, 2020). Thus, through the analysis of different contexts, our study contributes to the current literature as it offers a more nuanced understanding of how changes in levels of *team time pressure* and *leader time pressure* produce corresponding changes in their influence on *team creativity*.

Similar to previous research on *team time pressure* and *team creativity*, our study expands on the knowledge on moderating factors. To this day, findings on this relationship remain unclear on whether time pressure enhances or inhibits creativity, and this may be due to various existing moderating factors. Although some findings at the individual level have found direct relations between time pressure and creativity (Andrew and Farris, 1972), the research between Bear & Oldham (2006) highlights the importance of moderating factors. Interestingly, at the team level, the correlation between time pressure and *team creativity* seems to rely on mediating (e.g., conformity pressure, creative process; Chirumbolo *et al.*, 2004; Herdon *et al.*, 2013) or moderating factors (e.g., employee commitment & available resources; Gutnik *et al.*, 2012). Thus, although leadership behaviours have been considered as moderators in past research, to our knowledge our study provides the first empirical evidence that seeks to link *leader time pressure* to *team time pressure* and *team creativity*.

Our study also makes contributions to the literature on team leadership as *leader time pressure* is a boundary condition in this study. Indeed, very little research has studied the effects of leadership in regard to time, and of those that have done so, focus mainly on time in which the leader is managing or how the leader manages team time (Shamir, 2011). The studies that have come the closest in explaining the effect of *leader time pressure* focus on the individual level and do not measure the creative outcome in subordinates (e.g., Docì *et al.*, 2020; Briker *et al.*, 2020). Thus, findings from this research explore another avenue of time pressure as past research

mainly studied leadership's time pressure as an antecedent of the leader's behaviour, our study highlights its boundary effect on the team-time pressure and creativity relationship.

Moreover, our findings reveal that there is no significant correlation when leaders are under average time pressure. In line with our theorizing based on leaders' roles and COR, we believe this phenomenon occurs because when under moderate time pressure, leaders will attempt to act as both model and resource simultaneously. Although this is concurrent to research done by Shao *et al.* (2019), in which they propose that a leader's both/and (instead of either/or) strategy would increase employee creativity, we believe that this is not sustainable in the long-term. Such a strategy could exhaust all types of resources at once. An interesting angle to explore in future research would be a longitudinal study comparing the "both/and" versus the "either/or" approaches to leaders as a model and as a resource and its impact on *team creativity*.

Lastly, our study plays up the integration of COR theory with team leadership and *team creativity*. Past research has integrated COR to explain how leadership interventions served in replenishing team's resources which can later be reinvested in their creative process. For example, a study done by Liu, Liu & Zhang (2021), revealed that temporal leadership has an impact on team innovation processes through team learning behaviours. To our knowledge the only study that has used COR to explain leader's behaviours is the one done by Docì *et al.* (2020), yet it is conducted at the individual level and does not measure creativity. Our study demonstrates how the analysis of a leader's resources (i.e., time and energy) might be a useful perspective by which one can explore the relationship between leaders' time pressure and roles that they may adopt. As our results reveal, accounting for the functions that leaders may adopt due to their level of time pressure, through the lens of COR, is an interesting avenue in team level studies which include creativity.

Finally, although some of our findings are similar to those reflected in previous studies on the relationship between time pressure and creativity at the individual level, they differ in that they cast light on the team level and account for leaders' time pressure.

### 1.5.2 Practical Implications

Our findings can also be useful in organizations, lending support to teamwork and their creativity. Teams are at the epicentre of current work structures and are key in generating organizational success. Therefore, teams need to be flexible in their responses. Accordingly, their ability to think out of the box and not resort to work as *quid pro quo* assists in better serving a constantly evolving clientele; thus helping sustain organizational business flow through high/low cycles, affecting performance pressure at all levels. Our study emphasizes a critical factor that influences the effect that *team time pressure* has on *team creativity*: a leader's time pressure. Different team conditions may require specific types of leader support. From the research, we can surmise that when a team is under low time pressure, it will need to increase motivation and stimulation to decrease the effect that low time pressure can have on their creativity; whereas under average time pressure it will need to liberate cognitive resources through help planning the work flow as well as increase knowledge and information sharing. In addition, the context of the leader frames his/her functions or actions. Similarly, the dynamic between leader and team affects the leader's impact on the team. Therefore, in line with our theory, leaders as a resource may respond to teams under high/average time pressure and leaders as a model may respond to teams under low time pressure.

Consequently, leaders who are looking to promote creativity in their teams need to be aware of the roles that they can assume in specific contexts (i.e., average/low time pressure). Moreover, leaders need to understand when there are gaps between what they can offer due to time constraints, and what the team needs at different levels of time pressure. To facilitate such analysis, leaders would benefit from undergoing training on systemic thinking to better enable their comprehension of the complex effects of their intervention and reduce the impression of a direct link association between their actions and their desired results (Harvey *et al.*, 2019: 1735).

Moreover, leaders could gain influence through a strong leader-team relationship as it could enhance the impact of the functions that they may adopt either as a resource role or as a model role. On the one hand, the closeness of the relationship will allow team members to identify with their leader on deeper levels, thus increasing their intrinsic motivation (Tsai, Chen and Shen, 2015). When intrinsically motivated, one is internally stimulated to go beyond what is asked, to

seek challenges and to think outside of the box (Wang, 2016). On the other hand, this relationship enables members to be comfortable in voicing their concerns about time pressure at work which ultimately allows the leader to assess the time pressure trends in the teams more easily (Zhao, Wu & Gu, 2020), think about his/her own time pressure, and determine whether or not it falls within those gaps that lead to negative creativity. Therefore, leaders and teams would benefit from additional training or out-of-work activities in order to increase or maintain leader-team exchanges and open and honest communication through voicing.

Furthermore, leaders are valuable to a company (Shalley *et al.*, 2004). To avoid exhaustion, they need to be aware of roles (i.e., resource or model) that they can take under particular contexts rather than trying to do both at the same time. This is not only for team performance but also for their own benefit. As suggested by previous studies, an individual has only a finite amount of energy and time and sometimes the various roles of this individual draw from the same resources (Kahn *et al.*, 1964). As such, adopting an all-encompassing approach that entails being a resource and a model at the same time, such as transformational leadership, demands a lot of energy and resources and is not sustainable since it could lead to exhaustion (Zwingmann, Wolf & Richter, 2016). Therefore, an organization plan which foresees situations where the leader is unable to respond to team needs could be helpful. For example, an alternative organizational plan could consider a mobile position that not only serves to bring better cross-functional coherence but also support the teams in instances when both the leader and the teams are under time pressure. This way teams' needs in terms of guiding constraints and additional resources could be answered.

In this study, we have highlighted new relations which are very noteworthy for enhancing the competitive edge through creative performance in teams especially considering fluctuating markets and emerging competition.

### *1.5.3 Limitations and Future Research*

Our study carries a few limitations. First, we only focused on time pressure as described as high, moderate, or low and we have not considered the different types of time pressure such as challenge versus hindrance. Measuring time pressure this way seems to yield to more consistent findings, where high time pressure perceived as a challenge may increase creativity (Gutnick *et*

*al.*, 2012), and whereas high time pressure perceived as hindrance may lead teams towards psychological withdrawal, affecting performance (Pearsall *et al.*, 2009). Future research on *team time pressure* and *team creativity* could expand the findings of our conceptualized model by measuring time pressure differently.

Second, depending on where a team is within its development (i.e., new team vs seasoned team), results from this study may differ. For example, teams in our sample were well established; and depending on whether the team is at the beginning of its development or well established, the leader's role differs. This distinction is important, as a leader's role when forming a team, primarily involves training, assigning employees' tasks, and other necessary functions to initiate and onboard new employees/team members (Super, 2020). Alternatively, a team in equilibrium has already set work tasks and are more autonomous. Therefore, in a cycle where teams are in the formation stage, the leader needs to have a hands-on role that leaders as a model may not be able to offer due to busyness (under high time pressure). Considering that *leader time pressure* is the moderating factor in our study, investigating our model with teams at different development stages would be important in future research as it can also alter the influence that a leader can have on a team.

Furthermore, our research is based on semi-dependent teams; however, the type of team has an impact on the extent to which teams can be influenced by the leader's behaviours. Team leadership has more impact on team performance when the team is highly interdependent: team members work closely, coordinate and integrate actions (Burke *et al.*, 2006; Nicolaides *et al.*, 2012). Since findings from our preliminary analysis reflect a small yet significant correlation between *leader time pressure* and *team creativity*, it would be interesting to pursue research on the boundary effect of *leader time pressure* (resource and model roles) within the context of highly interdependent teams (under time pressure) and examine the effects on *team creativity*.

Lastly, our theoretical considerations focus on two leadership roles – leader as a resource and leader as a model but these roles have not been measured in this study. Although concurrent with existing theory in the field, future research could examine actions leaders could take under different levels of time pressure to determine whether this pattern is portrayed in practice. Additionally, the roles that we underlined may not be suitable to every domain or work



environment. We posit that the leader as a model influences teams that are able and available to observe positive behaviours associated with this role. Accordingly, the model role may be less efficient, especially in virtual working environments. For example, implicit behavioural and moral norms which are usually observable in office settings may not be internalized by subordinates. Future research could compare teams (leaders and team members) in settings in organizations, hybrid and virtual, to better understand the reach of influence of the leader as a model. Leading teams can be a complex endeavour and more research is needed (Harvey, Leblanc, and Cronin, 2019).

As future studies on the topic are conducted across a variety of work teams in different domains, a more complete understanding of *team time pressure* on *team creativity* and *leader time pressure* as a moderator will emerge.

#### 1.5.4 Conclusion

Creativity is essential to any business as it is the building block of survival especially in today's market where time pressure seems to have become part of normal "day to day" life. Despite research conducted on time pressure and creativity, at both individual and team levels, leaders' time pressure has not been accounted for. The current study explores the relationship between time pressure and creativity at a team level. Our study not only highlights an important moderator on team creative and *team time pressure*, and brings nuances into when *team time pressure* can inhibit or enhance *team creativity* depending on the leader's time pressure and thus it opens a new perspective for theory and practice to explore.

## Final Thoughts

Creativity no longer lies in the hands of few whose responsibilities are to identify and to develop new markets. Time is of the essence; managers and researchers are equally eager to find and to develop strategies to support teams. This study reveals a new variable in the equation and further studies can evolve what can be perceived as a barrier to the sustainability of *team creativity*. In reality, not only are the teams under time pressure, but the team leader is as well. Without a clear understanding, conflicts can begin to arise, which can be detrimental to the team's overall ability to create under time pressure (low or high). Only once this is understood can the team leader find creative means and be able to work around the situation(s). Within a highly innovative economy coupled with important changes, in order to cope with fast-paced market shifts, especially those caused by the pandemic. Businesses, and specifically teams, need to be more flexible and cannot solely depend on fixed processes and overly structured time management systems.

Moreover, as organizational structures evolve from individual-centric to team work, the role of the leader may shift as well. Repositioning from a directive mode to an empowered one, leaders acting as models are increasingly important (Berstein, 2016) due to their values and norms shaping subordinates' professional identities and subsequent actions (Florida, 2019). Yet, some more traditional leadership functions (e.g., monitoring) remain crucial to teams' performance.

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