Solutions for Coping with Technological Advancement: A Case Study.

ST-AIMS 13 : Pratiques d'anticipation et environnements extrêmes

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Abstract:

Given the information overload and technostress that affects team managers within the information and communication technology management framework, this study examines coping strategies and behaviors adopted by team managers to address technostress. Moreover, it evaluates the choice of coping strategies to improve performance. Using the concepts of interdependence and leader member exchange (which refers to the identification of coping strategies), a study involving three companies was conducted to identify coping strategies. Overall, four interactional coping strategies were identified: non-procedural strategy, professional support strategy, achievement mechanism strategy, and mutual trust strategy. Four new coping theories were created based on these strategies to address technostress from an international perspective, thus enriching the literature on coping strategies and technostress. Empirically, the results explain a wide range of team managers' behaviors. These theories and strategies can be adapted as a solution for coping with technostress.

Keywords: technostress, coping strategy, interaction, team manager, interdependence, leader member exchange (LMX)

Solutions for Coping and Responding to Technologies Enhancement: A Study of Three Companies

1. INTRODUCTION

Previous studies (Feng, 2020) suggest that the ubiquitous use of Information and Communication Technologies (ICTs) may create technostress that diminishes the performance of the Proximity Manager (PM) when stress levels increase with the role. Companies are implementing coping strategies to address technostress. Initially, these coping strategies were a result of management considering the opinions of employees and experts. They were then shared with team managers (TMs) with the aim of determining adequate and operational adaptive strategies. Finally, employees in each department applied these strategies. In this sense, it is simply interactions between organizations and employees; that is, exchanges, coordination, cooperation, and communication between employees and TM.

We sought to study the adaptive behaviors of TMs in the fight against technostress and its increase with ICT. Theoretically, our research was conducted in ICT management to analyze how information overload and technostress affected local managers (PMs) by combining the concepts of interdependence and LMX (exchanges between manager and employee). The aim was to identify coping strategies and to understand the behaviors adopted by PMs in the face of the technostress phenomenon. Empirically, our study was conducted to identify different types of coping (adaptive) strategies. We adopted a policy of interactional analysis involving the managers and their subordinates. The research questions were as follows:

- **RQ 1**: What adaptive and coping strategies and solutions are taken by TMs to manage technostress in an interactional environment?

Our study is fundamental in this digital era where ICT is integrated into almost all fields and sectors. Bag et al. (2020) studied how digitalization has enhanced performance in procurement, remanufacturing operations, and supply chains. Our research was conducted through observation and interviews. We conducted a literature review prior to and along with the empirical research, followed by a comparison of the theory and empirical results. This research brings novelty in dealing with ICT-technostress by providing adequate and adaptable coping solutions for all types of situations. We have a micro foundation vision (Barro, 1993) in our

paper from the perspective of manage and the manager and a strategical vision with a touch of human resources. We hope that our strategies will help pilot the human resources and the technostress difficulties in the companies. This paper is structured as follows. We begin with the literature review followed by the methodology, results, and conclusion.

2. LITERATURE REVIEW

2.1. COPING STRATEGIES FOR TECHNOSTRESS

2.1.1. Technostress

"In the last four decades, ICT has generated […] significant revenue for organizations in terms of reduced operating costs, process efficiency, new strategic alternatives, and opportunities for innovation" (Dos Santos & Sussman, 2000). ICT improves human and organizational performance (Liang & Xue, 2009). However, ICT is double-edged (Lei & Ngai, 2014). When exploited for malicious purposes, ICT can pose a threat to individuals, organizations, and society. Organizations using ICT spend time and space avoiding these threats.

Technostress describes the stress that users experience because of application multitasking, constant connectivity, information overload, frequent system upgrades and [the] consequent uncertainty, continual relearning and [its] consequent job-related insecurities, and technical problems associated with the organizational use of ICT. (Tarafdar et al., 2010)

Technostress creators such as techno-overload, techno-complexity, techno-invasion, techno-insecurity, and techno-uncertainty are associated with negative psychological and behavioral outcomes (Pirkkalainen et al., 2019).

2.2. COPING STRATEGIES FOR TECHNOSTRESS SITUATIONS

Lazarus and Folkman (1984) stated that "Coping behaviors are those that an individual undertakes to tackle stressful situations." They thus defined coping as "an individual's cognitive and behavioral efforts exerted to manage specific external and internal demands that are appraised as taxing or exceeding the resources of the person."

Existing research examined coping with work-related stress in work and family contexts (Major & Morganson, 2011; Michel et al., 2011), including heavy workload, organizational constraints, lack of autonomy at work, and interpersonal conflicts (Lu et al., 2010). Yip et al. (2008) posit that "moderating coping strategies [affects] the relationship between role overload and burnout." Despite a serious lack of empirical data concerning the connection between specific coping mechanisms and defined stressful circumstances (Dewe & Guest, 1990), the coping strategies used to combat these specific stressors are not well presented in adaptation

scales in the literature on general stress (Clark et al., 2014). We consider coping strategies for stress to find a general format that could apply in technostress contexts.

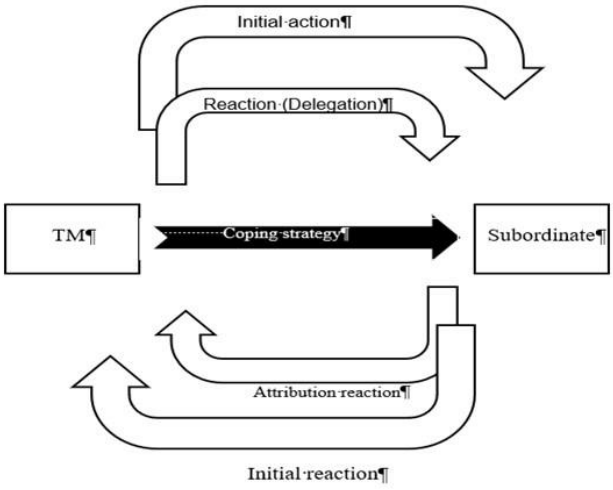
Skinner et al. (2003) support a highly personal, specific set of behaviors and strategies in stressful situations. They classify the coping process into lower and higher-level coping strategies. According to Pirkkalainen et al. (2019), "The proactive coping behaviors of positive reinterpretation and Information and Technology (IT) control can help IT users by influencing the extent to which reactive coping behaviors are effective and by positively influencing IT-enabled productivity." "Coping with the challenge [involves] actions and aims to achieve competence and mastery. They are activated when the individual experiences challenge" [techno-stressors] (Tarafdar et al., 2020), and individuals respond to stressful or disturbing situations by engaging in coping behaviors (Ragu-Nathan et al., 2008).

Coping strategies should be classified by type: emotion-focused and problem-focused coping. Coping researchers often distinguish between the two. Emotion-focused coping is usually defined as aiming to manage emotional distress associated with a situation (Lazarus & Folman, 1984 cited in Baker & Berenbaum, 2007). Problem-focused coping involves efforts to solve a problem (Carver et al., 1989; Lazarus & Folkman, 1984). We explain the adaptive strategies of TMs in technostress situations via the coping dyad (interactional) approach.

3. MODEL AND PROPOSAL DEVELOPMENT

Figure 1 illustrates the process of interaction and reaction between TMs and employees. In the first phase, a deputy and subordinates interact in their positions for the first time. Regarding a new organization member, the first individual characteristic required special attention (Deinesch & Liden, 1986). Because such characteristics affect emotions in prior years, TMs can set up capacity testing with jobs corresponding subordinate positions (Levinger & Huesmann, 1980) to compare and conduct periodic reallocation. Subordinates then answer to the delegation of a task, duty, or responsibility by the deputy (reaction or attribution). The last phase involves the core process of applying coping strategies to favorably resolve technostress. This interaction can be expressed by interdependence and LMX, which we discuss in the following section before presenting propositions by considering interdependence and LMX.

Figure 1. Interaction between TMs and subordinates



3.1.1. Participation and involvement

A participation and involvement strategy concerns teamwork, consultations with colleagues, collaboration, and exchange of information when conducting projects and applying different skills. We posit that positive interactions can curb technostress. Teamwork, coupled with collaboration and information exchange, help subordinates overcome challenges relating to technostress, especially when implementing new software or functionalities within the information system. However, if TMs and their subordinates work in isolation, they will be more prone to technostress than employees reporting challenges.

Proposal 1: Participatory interactions between TMs and subordinates lower technostress levels and improve team performance.

3.1.2. Mutual assistance

TMs assist their subordinates by sharing expertise and resources in case of a collaboration strategy. Mutual assistance is useful. Employees can help each other in matters related to information systems while facing challenges, which may increase productivity. TMs who refuse to assist with problems consider the technostress of subordinates as a competitive opportunity, but it provokes general stress and technostress. For example, subordinates will not alert the IT department or the hierarchy of the challenges they are facing, given the negative emotion induced by TMs, which will eventually increase technostress for the group

Proposal 2: Collaborative interaction, mutual aid, and mutual assistance between TMs and subordinates lower technostress levels and improve team performance.

3.1.3. Procedure

The bureaucratic accommodation strategy explains that an initiative should not be procedural. The author of an initiative has a proactive behavior and does not hesitate to identify or even

solve problems. For example, if a scanner does not work, the employee will use an alternative scanner without waiting for IT intervention. Conversely, when the procedure is followed to the letter, the subordinate only knows how to follow TM delegations passively. Thus, the slightest problem can become complicated and increase technostress levels, as no immediate solutions are sought.

Proposal 4: Bureaucratic interactions between TMs and subordinates lower technostress levels and improve team performance.

3.2. LMX

LMX theory views the dyadic relationship quality between leaders and members as the key to understanding effects of a leader on the members, teams, and organization (Erdogan & Bauer, 2014). However, TMs often ask firms to train a group of trustworthy employees to participate in their daily work, since they believe that time and effort are required to maintain a stable and trusting relationship with their employees. Often the question is whether a high-quality exchange can generate this type of relationship, which is characterized by a high degree of mutual trust, respect, and obligation (Diaz et al., 2012). Conversely, poor quality exchange refers to a lack of trust, respect, and obligation (Diaz et al., 2012). Therefore, the LMX approach is relevant here.

Given that LMX theory relies heavily on role theory (Graen & Cashman, 1975), roles are naturally linked to a set of expectations based on the prescriptions of others who interact with the system [or] organization in which they play a central role (Harris et al., 2015). Roles are defined as standardized patterns of behavior required of all people who are involved in a given functional relationship (Falconier et al., 2015).

LMX is built on a multidimensional foundation. We identify five dimensions, corresponding to the mutuality dimension between the manager and their subordinates: perceived contribution to the exchange, loyalty, affect (Dienesch & Liden, 1986), professional respect (Folkman & Lazarus, 1985), and trust (Bernerth et al., 2007). We explain the four proposals as follows.

3.2.1. Perceived contribution to the exchange

Perceived contribution to the exchange is the perception of the quantity, direction, quality of the work, and activity that each member puts forward for the mutual goals (explicit or implicit) of the dyad (Dienesch & Liden, 1986). Thus, managers examine the work performance of each subordinate on their team. Subordinates with better quality of work are appreciated and hold a more important place in the team (Folkman & Lazarus, 1985). This influences the quantity and

difficulty of the tasks delegated by TMs, who assign more challenging tasks to subordinates in whom they have the most confidence.

As the implementation of a work objective is extremely important and leadership orientation is a primary function, when TMs observe that subordinates have attained a quality of high contribution, they can communicate more information and provide employees with the necessary referral and support.

Proposal 5: Interactions focused on the perceived contribution to the exchange between TMs and subordinates lower technostress levels and improve team performance.

3.2.2. Loyalty

Loyalty strategy is the expression of public support for the objectives and the personal character of [other members] of the LMX dyad (Dienesch & Liden, 1986). TMs or subordinates promote objectives together, thus maintaining a good team spirit for a common benefit. TMs are more likely to entrust loyal subordinates with tasks that require independent judgement [or] responsibility (Hollander, 1980). Moreover, loyal members can achieve higher levels of autonomy and job satisfaction, while less loyal members will have fewer responsibilities, less task autonomy, and low satisfaction levels. In summary, TMs associate loyalty and willingness with superior performance.

Proposal 6: Interactions based on the perceived loyalty between TMs and subordinates lower technostress levels and improve team performance.

3.2.3. Affect

Affective feelings should not be directed toward one thing, since a prototypical emotional element refers to a complex process that takes place over time, [and] involves causally linked sub-events (Bass & Stogdill, 1990). However, Dienesch and Liden (1986) argue that the reciprocal affection of the members of the dyad is one over the other, based mainly on interpersonal attraction rather than on work or professional values. Thus, interactions between TMs and subordinates often occur when they need each other's company and are familiar with each other. Hence, the bonds of friendship often develop through professional interaction, friendliness is good for stress management and increases the cohesion of the working group.

Proposal 7: Interactions of affect between TMs and subordinates lower technostress levels and improve team performance.

3.2.4. Professional respect

Professional respect has been defined as the perception of the degree to which each member of the dyad has acquired a reputation, inside [and] outside the organization, for excelling in their

field of work (Folkman & Lazarus, 1985). Like affection, professional respect may appear as a factor that often has a negative connotation since professional respect is mostly related to power. For example, one who is perceived as professionally respected, would most likely be well connected within the organization and perhaps outside the organization due to importance in a profession (Ibarra, 1993). Thus, if people have good professional respectability, they can influence or generate results (Russell & Barrett, 1999). Accordingly, TMs and their subordinates can evaluate each other before working together or even meeting for the first time. This consideration can be induced by reputation, expertise, and experience.

Proposal 8: Professional development interactions between TMs and subordinates lower technostress levels and improve team performance.

3.2.5. Mutual trust

Confidence is defined as a person's willingness to be vulnerable to another party whose behavior is not under their control based on the belief that the other person is competent, open, and reliable (Bridge & Baxter, 1992). When TMs trust their employees, they give these employees preferential treatment. For example, they give them important information, more time, or rewards. Trust is based on cognition (e.g., knowledge of skills, reliability, or affect) (Hosmer, 1995).

Proposal 9: Interactions of mutual trust between TMs and subordinates lower technostress levels and improve team performance.

4. RESEARCH METHOD AND VALIDITY

4.1. RESEARCH METHOD

Exploring and testing are the two main processes of knowledge construction (Thietart, 2014). Our research, therefore, fits well within the framework of a hybrid exploratory study because we seek an explanation of the adaptation strategies chosen by the MPs on technostress, which involves proceeding by going back and forth between empirical observation and theoretical knowledge (Thietart, 2014). We began with the dyadic adaptation theory by applying nine propositions, summarized through the notion of interdependence and LMX. The objective was to produce new knowledge.

4.2. VALIDITY

The concept of construct validity deals with one or more abstract concepts, which are not always directly observable (Drucker-Godard, 2007), and establishes correct operational measures for the concepts being studied (Jung & Lyytinen, 2014). Examples of such abstract

concepts include change, performance, power, relevance, and contribution. Thus, validity is abstract since it comprises abstract elements.

We evaluate the problem of technostress via technostress situations and adaptation strategies. Hence, to guarantee the validity of the construct in qualitative research, appreciating the research objective and reviewing the literature is essential. This study aims to establish adaptation strategies under technostress, using interdependence and reciprocal relationship of leadership. We began with TM and subordinate interaction to determine the adaptation strategy to combat technostress. Thus, we present the three companies in our sample and the internal interactions regarding technostress, observe and describe the adaptation strategies, and analyze the adoption strategies.

Internal validity ensures the relevance and internal coherence of the results generated by the study (Thiétart, 2014); however, we cannot identify a method for achieving a (good) level of internal validity of a search. To avoid internal non-validity, we followed Blome and Schoenherr's (2011) proposal to test rival hypotheses and compare the empirical diagrams highlighted in theoretical proposals from the literature. We conducted a literature review (Ayyagari et al., 2011; Beaudry & Pinsonneault, 2005; Katz & Kahn, 1978) to discover a possible link between technostress and the adoption of certain adaptation strategies.

To validate our study empirically, we adopted three phases. First, we collected data through semi-structured interviews. Then, we conducted a quality check by listening to the responses, followed by synthesis using keywords. We also requested ideas from the interlocutors. In the second step, we classified the responses by their main elements and translated them into proposals. A justification of the links between the TM adaptation strategy proposals and the nine proposals adopted makes it possible to identify the adaptation strategy. Third, we detailed the adaptation strategies focused on the type of adaptation (the problem or emotion).

5. DATA COLLECTION, ANALYSIS, AND RESULTS

Across three representative companies (Table 1), we interviewed 13 employees (Table 2). To convince different companies to accept our requests for interviews, we replaced the word *technostress* with *the difficulty of using ICT* and explained that the interviews would be anonymous and company names would not be mentioned. Table 3 presents the interview progress. We employed primary (observations and interviews) as well as secondary (internal documents and annual reports) sources of data. We also performed a pilot study using theoretical orientation (Perry et al., 2000) to obtain interviews.

5.1. DATA COLLECTION

Table 1. Company presentation

NAME	COMPANY 1	COMPANY 2	COMPANY 3
Activity area	Industrial	Insurance	Informatic service
Workforce	+150,000 employees	+72,00 employees	Around 20 employees
Annual turnover	25 billion euros	+4 billion euros	/
Company size	Large enterprise	Large enterprise	SME
Type of market	International	National	International
Geographical location	International	National	International
Situation in ICT adoption	Leader in ICT adoption	Delay in ICT adoption policy	ICT adoption is an asset
Common delimitation concerning technostress	We study coping strategies to technostress		

Table 2. Respondents' profiles

RESPONDENTS		SERVICE
Company 1	Isabelle	Director of development affairs
	Frédéric	Supply chain manager
	Olivier	Global public relationship service
Company 2	Éric	Assurance claims manager
	Claude	Assurance claims manager in liabilities
	Laurent	Assurance claims manager
	Stéphanie	Legal protection lawyer
Company 3	Zhang	General manager
	Julien	Informatic service
	Li	Education service
	Juliana	Administrative service
	Aurélie	Executive assistant
	Wang	Marketing service manager

Table 3. Interview steps

INTERVIEW PROGRESS	COMPANY 1	COMPANY 2	COMPANY 3
First step	Gain the perspective of the manager on global coping strategies by managers on technostress	Understand the organization chart and business operation	Global corporate presentation by its leader

Second step	Gain feedback from employees	Conduct semi-structured interviews with different service managers	Snowballing
Third step	Gain the leader's personal perspective on technostress		

5.1.1. Company 1

This company is an industrial giant. It manufactures electricity products and offers services related to electricity management. It is a multinational company with markets in five continents; its main market is in France. It has 150,000 employees on its payroll and an annual turnover (excluding tax) exceeding 25 billion euros. Its operations extend to buildings, civil engineering, public works, and industrial and residential markets. The case is compelling as long as global communications and the mobilization of ICT tools by this company remain essential.

5.1.2. Company 2

This company operates in the services (insurance) sector. It is a European leader in insurance and has 7,200 employees and a turnover of more than 4 billion euros. The company was late in embracing ICT within its structure and policy. Nonetheless, the eventual introduction of different ICT tools was extensive. Within a few years, the company completely changed its information functions. This example is interesting because the company believes (rightly or wrongly) that the introduction of ICT and digitization of the claims management system will reduce the cost of processing files.

5.1.3. Company 3

The third company is a small and medium enterprise (SME), offering different e-learning services and learning applications on smartphones. It has 20 employees, and the entire workforce is constantly bathing in ICTs. Even if the employees seem very familiar with ICT, it is worth considering as an SME in this field. The study of this enterprise will be both general and comparative for the problems concerning our study.

We first collected and coded the interviews for each person and specified their positions and service. We then checked whether their responses were oriented toward a problem or an emotion, conformed with our initial proposal relating to whether people had access to more interdependent interactions or reciprocal relationships between TMs and subordinates, and whether TMs chose a problem-oriented strategy.

A classification of empirically collected adaptation strategies is explained in Section 4, where we explained the perspective of each interlocutor on their adaptive behavior associated with technostress. Therefore, to correspond to a hybrid study, we established a guide based on nine propositions via two main concepts - interdependence and LMX.

Regarding Company 1, the first step was to understand how executive managers view the behaviors of TMs for global technostress. Moreover, we acquired the feedback from employees on the difficulty of using ICT and took cognizance of the management difficulties encountered in the use of ICT, particularly the challenge of digitalization and digital information management. Here, executive managers learned the essential elements of our study and the main problems. They then gathered information and organized interviews. Company 2 recently experienced a change of head office and completed a digital transition. The first step was to understand the company through its organizational chart and mode of operation. We then conducted several interviews with managers from different departments; the average duration of these interviews was half an hour. In Company 3, we met manager Zhang, who explained to us the functions of the various departments of his company. Using the snowball method, after the interview, we requested for potential respondents for our questions.

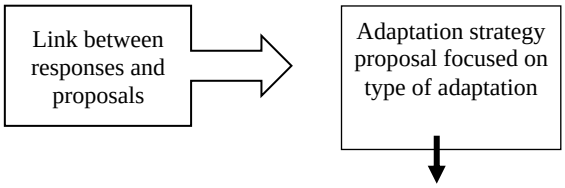
We began our interview with a perspective to allow an open conversation on TM behavior and professional relationships. Following this, we compared the interviews, based on the nine propositions from the literature, with the propositions developed by us. Finally, the interlocutors revised their responses.

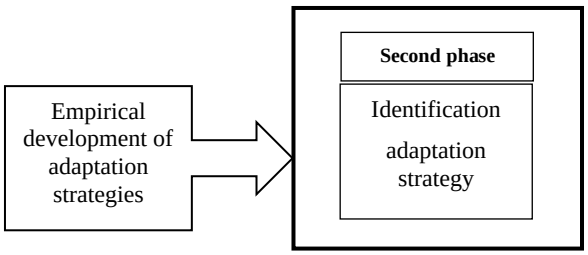
5.2. DATA ANALYSIS AND RESULTS

5.2.1. Data Analysis

Two data analysis phases were implemented to better analyze the results (Figure 2). The first phase classified the links between participants' responses and the proposals of the interactional coping strategies (ICS). Moreover, we translated them from keywords to coping strategy proposal focused on type. The second phase concerns identification of coping strategy.

Figure 2. Two phases of data analysis





5.3. ADAPTATION STRATEGY PROPOSAL FOCUSED ON TYPE (FIRST PHASE)

According to witness responses on coping type, the following coping strategy items were identified by Carver et al. (1989): problem-centered (active coping, planning, suppression of competing activities, coping to constraint, seeking instrumental social support) and emotion-centered coping (search for emotional, social support, positive reinterpretation, acceptance, denial, use of religion).

Proposal 1: Participatory interactions based on problem-centered coping.

Participatory interactions between TMs and subordinates are almost exclusively problem-oriented, based on dialogue and communication addressing technostress. They focus on problem-solving, where the environment is participatory. Empirically, most adaptive behaviors of respondents are active coping (initiatives) (s2, s4, s5, s12, s13), planning (s1, s3, s8, s10), suppression of competing activities (s7, s11), and seeking social and instrumental support (s6, s14, s15). Each of these (s1, s2…etc.) corresponds to the numbering of the witness sentences in Table 4. Thus, there are participative interactions between TMs and subordinates, which result in lower technostress levels and improved team performance.

Proposal 2: Mutual assistance focused on the problem.

Collaborative interactions between TMs and subordinates are problem-oriented toward participatory coping (initiatives) (s17), planning (s18, s19), taking direct measures (s23, s24), requests for help (s16), seeking instrumental social support (s20, s22), and emotional (s16, s21) reasons and obtaining moral support, sympathy, or understanding. Undoubtedly, there is mutual help, but it is often limited. It is linked to a trust that may not always exist between the various protagonists. It is, nonetheless, necessary that mutual help is used wisely; otherwise, it creates productivity problems. A good policy of mutual aid and assistance improves productivity and reduces technostress.

Proposal 3: Problem-centered conflict resolution.

Problem-oriented coping behaviors mainly emerge in this strategy: active coping (initiative; s23, s24), planning (s30, s31), taking direct measures (s25, s28, s29), deletion of competing activities (s7, s11, s27), and seeking instrumental social support (s26). Regarding the

importance of the manager and proximity manager, the intervention with respect to problem-solving and the emotions it provokes, is two-fold. Thus, the supervisor plays a vital role in the management of the difficulties related to technostress.

Proposal 4: Problem-centered bureaucratic coping seeking instrumental social support (pp. 35–36).

The bureaucratic interactions between TMs and subordinates are focused on the following problems: participatory coping (initiatives) (s30, s33, s37, s39), direct measurement (s37, s34), suppression of competing activities (s31, s33), and seeking instrumental social support (s35, s36). This strategy is fruitful on the condition that it is active, not passive, and is both upward and downward (superior to subordinate). Thus, if there are proactive exchanges and help, technostress can be reduced, and performance can be improved.

Proposal 5: Problem-centered perceived contribution.

This strategy applies to problem-oriented coping behaviors. It is strictly limited to adequate work behaviors (s41, s43) and involves acting or following guidelines in a given situation (technostress) (p. 42), collaboration (s39), and seeking social support from the manager (s43). The more people contribute to their work within their teams, the more action they take toward addressing technostress. Hence, interactions based on the perceived contribution to the exchange between TMs and subordinates can reduce technostress and increase team performance.

Proposal 6: Emotion-based perceived loyalty.

Empirically, the type of associated emotions should directly influence coping strategies. This strategy relies solely on emotion, positive or negative. Positive emotion can enable optimistic focus on the technostress problem (s44, s45), as a positive reinterpretation means positive interpretation of appreciation or valorization by integrating and contributing within the team. Thus, the higher the confidence, the greater is the emphasis the person places on supporting team members. However, negative emotion (s46) leads to harmful results, including failure to solve the technostress problem and decreased performance.

Proposal 7: Emotion-based affect.

A perceived affect in the interactions between TMs and subordinates consists exclusively of emotion. Individuals try to manage the distress caused by the situation (technostress) rather than dealing directly with the problems. A positively oriented emotion instead, leads to a harmonized work environment and mutual trust (s47, s48, s49, s50,51). However, many

respondents did not mention the notion of affection. Thus, the professional environment is non-affective. The relationship between TMs and subordinates remains somewhat neutral.

Proposal 8: Problem- and emotion-based professional respect.

This strategy focuses on the problem and emotion. Concerning the problem-oriented component, valuation by reward represents a search for instrumental social support (s52, s55, s56) and the suppression of competing activities (s53). Regarding the emotion-focused component, commendations from management correspond to social and emotional support (s54, s55, S56). Thus, giving high professional value reinforces employees' work commitment. Otherwise, dissatisfaction or frustration is generated, which leads to higher technostress levels and lower team performance.

Proposal 9: Problem- and emotion-based mutual trust

Finally, mutual trust between TMs and subordinates is assumed to lower technostress levels and improve team performance. This strategy primarily focuses on the resolution of technostress by emotion. Thus, we can emphasize positive emotion (s57, s58, s59, s60, s61) and the search for social support for instrumental reasons (s62). However, some respondents indicated that trust levels between colleagues are low. Table 4 presents the analysis of the various similarities and contrasts.

5.4. IDENTIFICATION ADAPTATION STRATEGY (SECOND PHASE)

5.4.1. Non-procedural strategy

Empowering employees allows them to adopt a participatory spirit and proactive initiatives, reducing hierarchical distance and developing a single communication channel between managers and subordinates. The following leads to the participative coping strategy (proposal 1):

Stéphanie speaks about the importance of participative management. According to her, if a technostress problem arises, she consults her manager to make a joint decision. Because in a stressful situation due to information overload for example, the best solutions go through communication, dialogue, support, and delegation. Julien explains that employees are convinced that the current project has good potential: "Above all, the manager has allowed us to subscribe to the company's capital" (for employees). This practice retains many of the employees. His colleague Li agrees with Julien: team spirit and a sense of creativity are important for a young company. Additionally, Aurélie emphasizes the importance of a sense of team: you must always stay connected and not isolate yourself from the group. Zhang

emphasizes their coping strategy to address technostress—they feel overwhelmed regardless of interventions.

Frédéric evokes team spirit and initiatives at work. According to him, there is a good team spirit among the colleagues, and the fact that they are able to digitize a document or to receive it already digitized facilitates its transfer to a colleague. Olivier explains that in his department, initiative and group work are important, he is rather familiar with ICT in this department since it is the heart of the profession, and he necessarily communicates with an ICT object apart from face-to-face verbal communication. In general, he approves of teamwork.

The sentiments necessarily follow the bureaucratic coping strategy (Proposal 4).

Frédéric thinks there are plenty of such initiatives. Olivier perceives that he collaborates with his superiors without a problem and that he shows initiative during his work. Similarly, Claude reveals that intervention or initiatives in this area to solve the problem can have a long-term perspective. That is, an intervention on his part or on the part of a colleague to help the other colleague who is in difficulty, and then if the problem is of a certain seriousness, one of them will take the initiative to talk about it with the superior.

Julien notes that sometimes the presence of an intermediary breaks the direct communication between employees and management. This seems to confirm Eric's answer: employees tend to force mutual assistance and participation, a type of mutual assistance and passive anticipation. They show only a minimum interchange. Aurélie explains that her relationship with her supervisor involves exchanges and donations: "My supervisor and I have a two-way relationship. The voluntary actions on my part will be returned in one way or another by my manager. He is rather grateful for the initiatives I am taking" (Aurélie).

5.4.2. **Professional support strategy**

This strategy is supported by professional support, which means identifying problems, seeking solutions, implementing a policy of consensus and problem-solving, as well as participatory management. These are all methods used for the management or MPs and problem management of the information system in a harmonious way.

The situation brings us to the mutual assistance strategy (Proposal 2). "Is there mutual assistance between managers and subordinates in ICT?" Isabelle and Claude respond that "When there are difficulties, we try to help each other; it is mostly a question of time." Li and Wang, likewise, paint a friendly and anticipatory behavior between colleagues.

When it comes to things to do, conversations between my supervisor and me are generally effective. However, when work management has yet to set the course, faced with the mass of

information and software, you don't know where to start, my manager and I have the right number of conversations needed to get the job done. (Wang)

Stéphanie mentions that when setting up or implementing new software, the teams often share information, methods, and achievements. In contrast, Éric perceives greater support between himself and his colleagues than with his superiors. However, despite this perception, he perceives the employees as isolated: "Each in his box in front of his computer."

Thus, we must consider the conflict resolution strategy (Proposal 3). Aurélie maintains that their software is well disciplined and tamed by extensive use. Isabelle states "I try to evaluate the level of difficulties and the change due to new technologies." Olivier opts for a solution and considers differentiating the so-called normal problems and those caused by difficult information situations. Julianne indicates the importance of support activities. Zhang emphasizes it is necessary to make decisions and implement specific recommendations to avoid or manage conflicts and disputes.

The managing director of Company 3, Mr. Zhang, tells us about their adaptation strategy in fighting against technostress; he tells us that it is mainly based on the implementation of participatory management, entailing a policy of settling problems and inherent difficulties. Their management always tries to cross the hierarchical distance to have a soft policy.

"Every time there is employee feedback, we give it a lot of importance, we put the issue (or employee feedback) on the agenda." (Zhang).

5.4.3. Achievement mechanism strategy

This strategy sets a clear compensation system in relation to individual and group contributions, gives importance to professional valuation, and evaluates employees more on their skills and expertise. Hence, it is vital to consider the contribution of a perceived exchange strategy (Proposal 5). Isabelle says her goal of helping or collaborating with her colleagues is based on a mutual team interest. Li mentions that each member must approach work adequately to enable work progression. Julien thinks his subordinates show more appreciation or cooperation. Julianne says, "My manager told me that, thanks to me, the two groups are starting to communicate better; I am an outstanding member in this case."

With value comes the professional respect strategy (Proposal 8). With the introduction and evolution of ICTs in the company, Isabelle believes her work is valued. Éric feels he is valued; more concretely, this sense of valuation is based on bonuses. Claude does not think it is a good practice to be valued by financial compensation and believes that other valuation methods

should be preferred. Zhang says: For me, I value my employees through expertise. Nevertheless, Stéphanie thinks ICT has helped her increase her contribution and productivity.

5.4.4. Mutual trust strategy

The manager and the team must establish a harmonious relationship of mutual trust, cooperation, and respect and share a common goal. Surely, trust is closely associated with the loyalty strategy (Proposal 6). Julien mentions his superior considers his work with benevolence. Éric has a negative perspective: he thinks the relationship has not improved between subordinates and superiors. Wang states "I trust some managers and support them publicly; this trust develops in different contexts." Such affection invokes the affect strategy (Proposal 7). Li finds that his team share a friendly relationship. Aurélie states "I know the habit [and] the style of [our] director so well, my manager often says that I am a trustworthy person." Wang mentions "When I talk about how to do things at work, my supervisor and I are usually synchronized with each other. A habit of work is fixed between us, and it seems to be well."

The strategy chain necessarily concludes with the mutual trust strategy (Proposal 9). Isabelle finds that the trust that already existed in the team remains intact. Frédéric confirms the opinions of Isabelle. However, Aurélie has enough confidence in her director; she is ready to defend him and justify his decisions even when he is absent. According to Zhang "I trust my employees because my employees are well selected. I believe in their skills and openness." Li says, "I respect the decisions and choices he makes about work."

TABLE 4. PROPOSAL, WITNESS SENTENCE, AND COPING TYPE

*s1: witness sentence 1

Proposal	Witness sentence	Coping type	
		Focused on the problem	Focused on the emotion

Proposal 1: Participative interactions between TMs and subordinates will lower technostress levels and improve team performance	Frédéric: team spirit (s1*) and initiatives at work (s2) Olivier: initiatives at work (s2) Julien: team spirit (s1) and participation in the project (s3) Li: the sense of creativity (s4), the possibility of subscribing to company capital for employees (s5) Aurélie: a sense of being part of the team (s1); you must always stay connected; do not isolate yourself from the rest of the group (s6) Wang: interprets the ideas of each other with precision between manager and subordinate (s7) Éric: for a common goal, they try to get along as best they can, help each other a little, and collaborate between colleagues (s8) Zhang: implementation of participative management (s9), problem-solving and difficulty policy (s10), and crossing the hierarchical distance (s11) Stéphanie: communication (p. 12), dialogue (s13), support (s14), and delegation (s15)	Yes	
Proposal 2: Mutual assistance interactions between TMs and subordinates will lower technostress levels and improve team performance.	Isabel: there is mutual help (s16) Éric: helping one another (s16) Claude: everyone is ready to help the other (s16) Laurent: an initiative spirit has developed thanks to the introduction of ICT, as well as mutual trust (s17) Stéphanie: take stock of particular situations (s18), technical difficulties, sensitive topics, data that he cannot find, and what they lack (s19). They often share information, method, and achievements (s20) Li: there is a friendly atmosphere (s21) of mutual help, information sharing (s20), and anticipation between his colleagues (s3) Wang: My manager and I have sufficient conversations (s22)	Yes	
Proposal 3: Conflict resolution and interactions between TMs and subordinates will lower technostress levels and improve team performance	Isabel: understanding that beliefs, natural functions, and automatisms vary from person to person (s23) Olivier: able to differentiate between 'normal' problems and those caused by 'difficult' employees (s24) Frédéric: share with my colleagues and subordinate (s20) Li: A constructive and non-destructive attitude is paramount (s 25) Julianne: the importance of support and support for the individuals concerned in solving the problem of technostress (s 26) Zhang: it is necessary to avoid conflict and litigation (s27) Julien: put forward policies or assistance (p. 27) to help or support their subordinates (s16) Aurélie: software is well "disciplined" (s28) Wang: Once a new ICT is put in place or updated, it induces a corresponding training (by the manager) (s29)	Yes	
Proposal 4: Bureaucratic interactions between TMs and subordinates will lower technostress stress	Isabel: initiatives (s2); proactive (s30) Frédéric: good agreement (s31); thus, everyone takes the initiative (s2) Olivier: collaborates with his superiors (s32) Claude: reveals the intervention or initiatives (s2)	Yes	

and improve team performance.	Éric: he lacks initiative (s2) Julien: to exchange directly with the director (s33) Zhang: In societies that consider themselves free, many innovative aspects (s34) are regulated by spiritual freedom (s 35), open mind (s36), and autonomy (s37) Aurélie: My supervisor and I have a two-way exchange relationship (s33). Voluntary actions on my part are rendered in one way or another by my manager (s38)		
Proposal 5: Perceived contribution interactions to the exchange between TMs and subordinates will lower technostress levels and improve team performance	Isabel: sharing a common interest (s1) to help or collaborate with colleagues or subordinate (s16) for a mutual team goal (s39) Julien: more appreciation or cooperation with my manager means he may give me more work and autonomy (s40) Li: Each member must approach the work adequately (s41) Zhang: Some people are delegated more stains or difficult spots or more quantity assignments depending on their ability, skill, and willingness (s42) Julianne: his manager knows his service contribution favorably (s43)	Yes	
Proposal 6: Perceived loyalty interactions to the exchange between TMs and subordinates will lower technostress levels and improve team performance	Julien: my manager admires him and regards him as someone faithful (s44) Julianne: he is personally inclined to use his power to help an employee solve work-related problems (s16) when he feels that the person is particularly faithful and shows a willingness to contribute to work (s45) Wang: I trust some managers and support them publicly; this trust develops under different contexts. (s46)		Yes
Proposal 7: Affect interactions between TMs and subordinates will lower technostress levels and improve team performance	Li: his team shares a cordial relationship (s47); the members work together from the beginning of the project, and a mutual trust is created between the members (s48) Juliana: I can count on him to help me in case of difficulties (s49) Aurélie: I know the habits and style of the director so well (s50) Wang: My supervisor and I are usually synchronized with each other (s51)		Yes
Proposal 8: Professional respect interactions between TMs and subordinates will lower technostress levels and improve team performance	Isabel: his work is valued (s52); certainly, there have been many changes in assignments Stéphanie: her work is not valued and is even less valued since the massive introduction of ICT (s53) Frédéric: my work is valued, but more concretely this valuation is based on premiums (s52) Éric: this valuation is based on premiums (s54) Claude: lack of valorization as rewards or congratulations received from management (s55) Zhang: I value my employees by expertise (s56)	Yes	Yes

Proposal 9: Interactions of mutual trust between TMs and subordinates will lower technostress levels and improve team performance	Isabel: the previous team remained intact (s57) Frédéric: certainly, a limited trust (s58) remains between work colleagues. More generally, however, there is still confidence in how cases are addressed (s59) Laurent: I respect decisions and choices (s60) Zhang: I trust my manager (s49) because he was highly placed in a multinational organization; she believes in her skills and openness (s61) Aurélie: she is ready to defend and justify his decisions even when he is absent (s62)	Yes	Yes

6. CONCLUSION

Overall, there are four interactional coping strategies to fight against technostress: non-procedural, professional support, valuation and contribution mechanism, and mutual trust strategy. Depending on the company, situation, and context, an interaction strategy can be better than others. We do not want to draw a catalog of strategies rather show managers and researchers the best strategy with a combination of elements (situation, company type, etc.). Having a strategy is important; for example, when implementing a procurement strategy 4.0 through the moderating effect of information and the procurement strategy, there is a positive impact on the buyer intention (Bag et al., 2020). The worst strategy is to not have a strategy, which is why we underline that the four strategies discussed are effective methods for coping with ICT.

6.1. THEORETICAL AND EMPIRICAL IMPLICATIONS

Theoretically, coping strategy classifications can enrich the technostress literature. We determined two other notions for adaptation strategy identification (interdependence and LMX). This interactional perspective broadens the field of research and helps us innovate the notion of *coping*, guiding TMs to improve emotional control and hence, resolve technostress problems.

Empirically, the problem of technostress cannot be denied. Moreover, the transformation of working methods and technological evolution generate new problems. Furthermore, there are different methods of adaptation and responses to technostress. However, not all of them result in the same outcome because adopting a response to technostress is not enough; the response must be adapted, else it would risk being counterproductive. The answers can be problem-based or emotion-based. Furthermore, the proposals reduce technostress and improve team performance, despite operating at different levels. However, it is insufficient to merely apply

the adaptation strategy, as encouraging certain methods of the chosen strategy is required, as in the case of valuation. This translates into a recognition demonstrated by the hierarchy surrounding the individual who can adapt and manage the transformation of the technological environment.

We hope that this research deepens knowledge on how to cope with technologies. Learning the technostress coping strategies can help an individual enhance their technology experience, optimize the usage of technology, and derive more benefit from it. Finally, for further research, we can mobilize the resource-based view (RBV) based on the study of Bag et al. (2020).

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