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Research Exposé:

"Virtualization, how the shift from physical to virtual working environments affects teams and their members"

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Abstract

Background – In just a few months, the COVID-19 outbreak changed the way businesses in all sectors and regions operate. Lockdowns and restrictions have forced organizations to make their workplaces safer. As a result, many people began working from home. Therefore, the pandemic has offered a unique opportunity to observe teams transitioning to teleworking.

Purpose – Teleworking is becoming increasingly popular among businesses as a means of enabling their employees to work from distance. At the same time, the change in the working environment has an impact on the members of the team. How are teams and their members affected by the process of virtualization? The purpose of this paper is to answer this question.

Design/methodology/approach – Because little is known about the transition from traditional to virtual work environments, the aim of this research is also to learn more about it rather than predict specific results. Therefore, a qualitative approach was deemed most suitable. Data will be collected through a one-to-one remote semi-structured interview. The data analysis will be performed through MAXDQA.

Expected contribution – On the one hand, the study will provide important insights into the process of virtualization of teams, contributing to enlarging the scarce literature on the topic. On the other hand, it will practically help organizations whose goal is to switch to a remote work structure by offering important insights about the transition process.

Keywords: Virtual Teams, Telework, Virtualization, IPO, SDT, SIT

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LIST OF ABBREVIATIONS

BLS   Bureau of Labor Statistics

U.S.   United States

ICT   Information and Communication Technologies

IPO   Input-process-outcome

IMOI Input-mediator-outcome-input

SIT   Social Identity Theory

SDT   Self-Determination Theory

KSA   Knowledge Skills and Ability

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1. INTRODUCTION

In just a few months' time, the COVID-19 crisis has brought about years of change in the way companies in all sectors and regions do business (Mckinsey, 2020). General lockdowns and restrictions have forced organizations to provide a safer workplace for their employees. As a result, many people relocated their work routines to their homes. In the United States (U.S.), according to the U.S. Bureau of Labor Statistics (BLS), in the period between May and June 2020, fully one third of the labor force switched to teleworking due to the pandemic. Even though the number of people teleworking part-time or full-time has been steadily increasing over the years (Eurostat, 2021), the pandemic has surely accelerated employer adoption of teleworking modalities. The COVID-19 outbreak has shown the world that working from home is possible. Therefore, if, on the one hand, teleworking has allowed many companies to continue operating, often at a lower capacity, on the other hand, it has changed their perception towards letting people perform tasks remotely. In fact, as underlined by the International Labour Organization (2020), it is likely that rates of telework will remain significantly higher than they were prior to the onset of the pandemic. In addition, using the instance of U.S. for developed countries, Dingel and Neiman (2020) discovered that 37% of jobs in the United States can be performed entirely at home. Moreover, Global Workplace analytics (2020) estimated that 56% of the workforce could work from home at least part time. These figures support the potential spread of teleworking.

Given the above business context, employees within organizations faced a sudden shift: from working together inside the same physical location, to coordinating and organizing their collective efforts using Information and Communication Technologies (ICT), in other words to telework. In this regard, Allen et al. (2015, p.44) defined telework as "a work practice that involves members of an organization substituting a portion of their typical work hours (ranging from a few hours per week to full-time) to work away from a central workplace typically principally from home using technology to interact with others as needed to conduct work tasks". Hence, although a move to teleworking influences businesses, that must restructure their operations, it also affects the employees who see a transformation in their working routine. Many companies are expanding hybrid or fully work-from-home policies (Business Insider, 2020), and the trend seems to continue. The question is, however, how would this impact the employers.

In general, the science of teams and teamwork has progressed dramatically over the last century (Salas et al., 2018). Many have focused on team effectiveness (e.g., Hackman & Morris, 1975; McGrath, 1964), developing theoretical frameworks capable of breaking down the different aspects that contribute to the aforementioned effectiveness and which form the foundation of most of the team's research. Others have focused on team cohesion (e.g. Beal et al., 2003) and the interpersonal processes which emerge inside teams, such as conflict, motivation, confidence building, and affect (e.g., Bradley et al., 2003). More recently, the focus has shifted towards the study of virtual teams (see Contreras et al., 2020; Dulebohn & Hoch, 2017; Ale Ebrahim et al., 2014). Following the definition of Bell & Kozlowski (2002), we refer to virtual teams as work environments in which team members are physically dispersed, have limited face-to-face contact, and collaborate to achieve common goals via electronic communication tools. Research on virtual teams has often focused on the benefits and drawbacks of this phenomenon compared to conventional teams. Hoch & Kozlowski (2014, p.390) summarize them as "relative to face-to-face teams, benefits attributed to the use of virtual teams include the ability to compose a team of experts flung across space and time, increases in staffing flexibility to meet market demands, and cost savings from reduced travel. While disadvantages include lower levels of team cohesion, work satisfaction, trust, cooperative behavior, social control, and commitment to team goals; all factors that can negatively impact team performance."

Many other aspects of working in a virtual team have been investigated, building a wide and varied knowledge base on the topic. However, prior research has mostly focused on understanding the characteristics of fully virtual or fully collocated teamwork, mainly because only few people have had the opportunity to investigate the transition from collocated to virtual work. The COVID-19 pandemic induced transformation presented a unique chance to watch teams in a moment of transition, where they were forced to consider their fundamental team activities and how to implement them in the virtual world (Whillans, Perlow & Turek, 2021). Furthermore, several looked at the process of teleworking adoption from a managerial view (see Silva-Ca et al, 2019; Kaplan et al., 2018; Hoch & Kozlowski, 2014; Illegems & Verbeke, 2004), but a few (e.g., Whillans et al., 2021) investigated this transition from the team components' perspective. In this line, Kaplan et al. (2018, p.380) underline: "we hope the current results can provide the framework and grounding to examine other considerations. In particular, we see studying the impact of telework on the team versus just with reference to the supervisor-subordinate dyad as being an important next step".

The purpose of this research is, on the one hand, to investigate the impact of "team virtualization" on members' interpersonal interactions, such as cognitive, affective, and motivational, from an individual perspective, while on the other hand, it aims to comprehend how the process affects the team as a whole in terms of functioning. This research will also contribute to the advancement of team literature by providing important insights about the process of transitioning from face-to-face to virtual working environments. Nonetheless, by closing the gaps, this research will provide a better understanding of the relationship between members of the team and the team itself under the circumstances of virtualization. As a result, organizations will be more aware of the implications of the virtualization process for their teams, and thus better prepared to implement it if necessary. The aim of the study could be summarized by the following research questions and consequent sub-questions:

- How do teams transition from physical to virtual work environments?
    a. How does team virtualization affect the team itself?
    b. How does team virtualization affect the members of the team?

Therefore, using an adapted input-process-output (IPO) model, and drawing on social identity theory (SIT) and self-determination theory (SDT) as theoretical framework, this study will investigate the aforementioned issues. SIT is one of the most important explanatory models in modern social psychology, which serves as a foundation for approaches to social cognition as well as the study of functional intergroup dynamics, while SDT is a macro theory of human motivation and personality that deals with people's inherent growth tendencies and psychological needs.

The structure of the paper is organized as follows: Section 2 briefly exposes the main theories and models upon which the research is based. In Section 3, the main literature used as reference for the study is shown. Section 4 elaborates the research proposition of the study. In section 5, the methodology adopted for the research is explained. Section 6 lists the expected contribution of the studies. Section 7 contains the structure of the elaborate. Section 8 shows the workplan of the research.

2. THEORETICAL FRAMING

Over the last few decades, technological advancement has resulted in an exponential increase in the number of organizations that rely completely or partially on a remote work structure. Simultaneously, as previously mentioned, this trend has gained the attention of academics, who have been studying the dynamics and characteristics of virtual teams in greater depth. When reviewing literature on virtual teams, the first evidence is a consensus among scholars that managing virtual teams is more difficult than managing collocated teams (Hoch & Kozlowski, 2014). Leaders often have less influence and information about the team's status, progress toward milestones, and functioning because of the lower levels of co-presence. Consequently, their management of team processes and dynamics may suffer. Developing adequate practices to uncover and resolve conflicts across distance, motivate team members, monitor members' performance, and build trust and team cohesion are all difficult tasks (Dulebohn & Hoch, 2017). This is one of the reasons why the difficulties of managing virtual teams have received so much attention in the academic literature, and therefore, many studies have been conducted in this area (e.g. Ruiller et al., 2019; Marlow et al., 2017; Gilson et al., 2010). Thus, the current section will expose the main findings, theories and concepts retrieved from the literature on teams and virtual teams. This part will therefore consist of the framework upon which the study and its findings will rely.

2.1 INPUT-PROCESS-OUTCOME FRAMEWORK

A comprehensive understanding of the literature on group work and team effectiveness is provided by the input-process-outcome framework (Hackman, 1987; McGrath, 1964), which summarizes, categorizes, and integrates the research on virtual teams (Hoch & Kozlowski, 2014). Lately, the framework was adjusted and integrated with a range of variables that are important mediational influences with explanatory power for understanding variability in team performance and viability (Ilgen et al., 2005). Originally, the model was applied in research on "traditional" face-to-face teams. More recently, the framework has been used to investigate virtual teams (e.g., Liao, 2017; Marlow et al., 2017). Since IPO includes all those variables affecting team activity, it allows researchers to investigate different types of teams, taking into account that different degrees of virtualization will vary depending on the type of organization and circumstances considered. For these reasons, the model will serve as a starting point for

the study of the process of virtualization of teams. In the following, a brief illustration of the adapted IPO and its main component is explained.

2.1.1 Inputs

IPO evaluates three different types of input: organization factors, team leadership and team composition, as depicted in Figure 1. These categories serve as important deterministic requirements for virtual teams.

1. *Organization factors* represent all those organizational choices which are needed when structuring a virtual team, such as defining the team's structure, tasks, objectives, and means of communication. Moreover, as Dulebohn & Hoch (2017, p. 570) underline, organizational level factors include structural supports, which are organizational mechanisms that compensate for the absence of leader co-location by structuring, supporting, and directing VTs such as information and reward systems (Hoch & Kozlowski, 2014, Bell & Kozlowski, 2002).

2. The second input consists of the *team leadership*. Recent literature has defined that the skills needed to lead a virtual team are essentially different from those necessary to lead face-to-face teams. Leaders must have different communication styles, a deep understanding of cooperating technologies, and the ability to facilitate team engagement and relationships (Contreras et al., 2020; Liao, 2017). Hoch and Kozlowski (2014) discovered that shared team leadership had stable, positive relationships with team performance regardless of the degree of virtuality.

3. The third type of input factor consists of the *team composition*, which represents both surface level and deep-level diversity and individual differences, both of which are predicted to have an impact on team processes and outcomes (Hoch & Dulebohn, 2013). These include team members' diversity in terms of language, culture, and ethnicity, as well as deeper traits of diversity such as personalities and values. The framework incorporates differences in terms of knowledge, skills, and abilities (KSA) as well as other important values such as cultural orientation (e.g. individualism vs. collectivism), appreciation of diversity, and other values viewed as important (Hoch & Dulebohn, 2017).

Figure 1. Input-process-output model for virtual teams
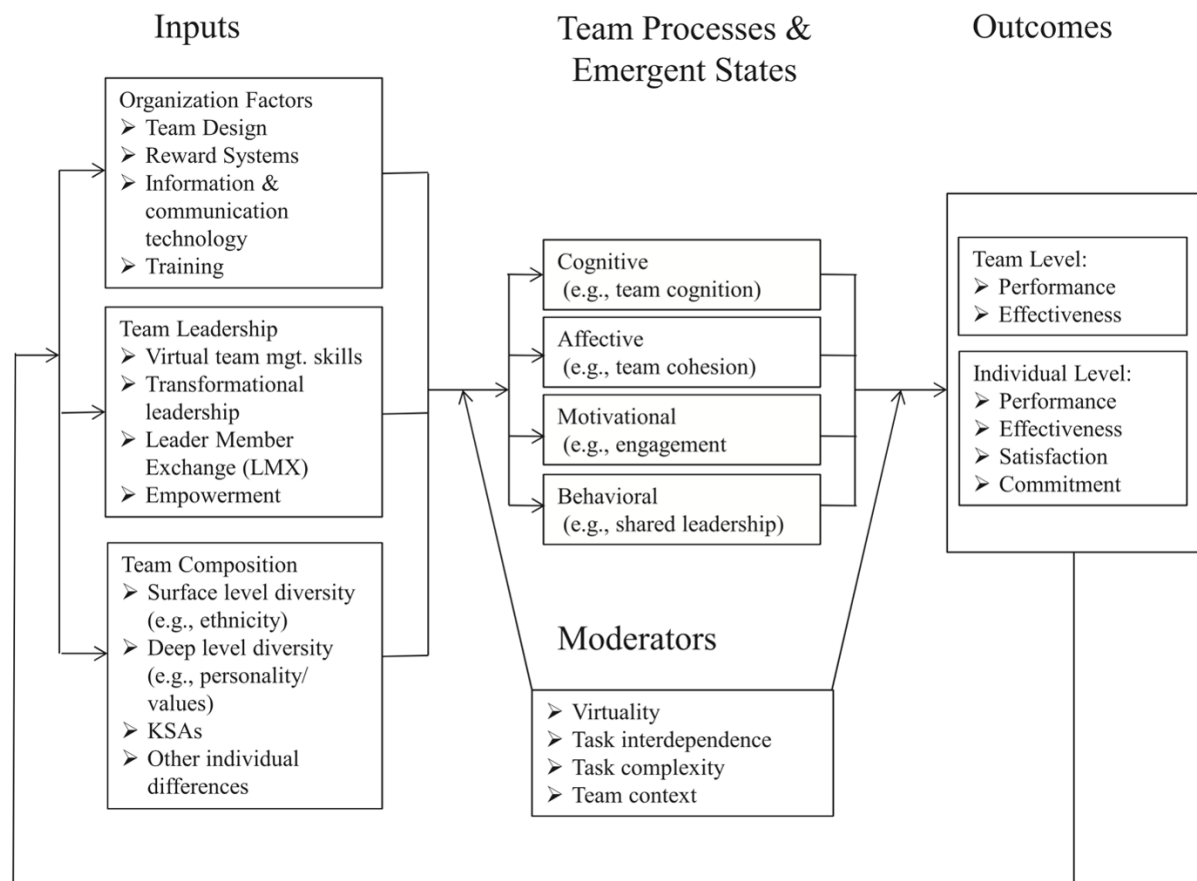
Source: J.H. Dulebohn, J.E. Hoch - Virtual teams in organizations / Human Resource Management Review 27 (2017) 569–574

2.1.2 Team processes & emergent states

The team process and emergent states are considered as mediators of the input-output relationship (Ilgen et al., 2005). Marks et al. (2001, p. 357) defined team process as "members'

interdependent acts that convert inputs to outcomes through cognitive, verbal, and behavioral activities directed toward organizing taskwork to achieve collective goals," while, on the other hand, they defined emergent states as process-oriented states "that characterize properties of the team that are typically dynamic in nature and vary as a function of team context, inputs, processes, and outcomes". As illustrated in Figure 1, team processes and emergent states include cognitive, affective, motivational, and behavioral processes (Mathieu et al., 2008; Kozlowski & Bell, 2003; Marks et al., 2001).

2.1.3 Moderators

The framework presented also includes moderators. These are considered as factors that could moderate the input and team process as well as the team process and outcome mechanisms by influencing the direction and/or strength of the relationships in the model (Hoch & Dulebohn, 2017). In the case of virtual teams, the main moderator consists of the virtuality itself, while the authors that adapted the framework also included task interdependence and complexity which were demonstrated to impact the input-process and process-output relationship (O'Leary & Cummings 2007; Gibson & Gibbs, 2006).

2.1.4 Output

Finally, as last component of the IPO model, Fig. 1 shows the outcomes. The outcomes consist of the end of the process through which inputs are transformed by virtual teams into outputs valuable for the organization. Hoch & Dulebohn (2017) differentiated between two types of outcomes. On the one hand, team level outcomes such as team performance and effectiveness represent the degree to which the team achieves performance goals and objectives. Individual team member outcomes, on the other hand, are those that reflect member performance, effectiveness, and attitudes like satisfaction and commitment.

2.2 SOCIAL IDENTITY THEORY

Social Identity Theory was developed by Tajfel & Turner. According to SIT, people tend to classify themselves and others into different social categories (Tajfel & Turner, 1979). This process is defined as social classification. Social classification has two purposes. On the one hand, it allows people to systematically organize their social environment by defining others. On the other hand, it enables people to define their position in the social environment

(Ashforth & Mael, 1989). Henri Tajfel (1963) proposed that stereotyping (grouping and categorizing people) is based on a natural cognitive process: the spontaneous tendency to form groups, to feel part of them and to distinguish one's own group (ingroup) from those to which one does not belong (outgroup). Consequently, people undertake eliciting mechanisms of cognitive bias and behaviors of favoritism for their own group (and the reverse for outgroups). Throughout this process, people create an identity. Tajfel & Turner (1979) individuated three interrelated mental steps that occur when people realize this process of creating identities: *categorization, social identification,* and *social comparison.*

2.2.1 Categorization

Categorization is the process through which individuals construct categories of belonging based on a variety of factors (such as age, gender, culture, religious affiliation, social class, political orientation, and so on) with a tendency to minimize differences between subjects within a category while maximizing differences between opposing categories (Tajfel & Turner, 1979).

2.2.2 Social identification

Social identification is the process by which individuals adopt the identity of the group to which they have assigned themselves. Identification is described as the degree to which a social referent, such as a connection, an in-group, or an organization, is incorporated into one's identity (Aron et al., 1991; Ashforth & Mael, 1989; Dutton et al., 1994; Pratt, 1998). In both the social and organizational psychology literatures, two kinds of identification have been proposed: relational and collective. Zhang et al. (2014, p.1703) define them as "relational identification with a workgroup as the extent to which one includes the connections and role relationships with group members in the self-concept, and collective identification as the degree to which one includes group membership and shared characteristics of the group in the self-concept".

2.2.3 Social comparison

The last step individuals engage in when building a social identity is a social comparison. The individual compares his ingroup to the outgroup of reference on a regular basis, demonstrating evaluative bias in favor of his ingroup. One's own group is implicitly judged to be better than the 'others,' who are discounted or compared systematically. A

consequence of this process is that part of one's own self-esteem may come from the perception of one's own ingroup's superiority over the outgroups of reference (Tajifel & Turner, 1979).

2.3 SELF-DETERMINATION THEORY

Self-determination theory is a macro theory of human motivation and personality (Ryan & Deci, 2000a, b). Its domain is the study of people's fundamental growth inclinations and psychological requirements, which serve as the foundation for their self-motivation and personality integration, as well as the environments that support those positive processes (Ryan & Deci 2000a). According to SDT, human motivation is driven by the desire to fulfill three psychological needs, namely autonomy, relatedness, and competence. *Autonomy* defines the feeling of volition, willingness, concurrence, and choice with regard to a behavior or experience an individual is engaged in; *relatedness* is the sense of feeling accepted and significant by others, namely feeling connected with others in a significant way; *competence* refers to feeling confident and effective in respect of some behavior or goal (Ryan & Deci, 2014). Following SDT, all these appear to be necessary for effective functioning of natural inclinations for growth and integration, as well as for positive social development and personal well-being.

Motivation, according to SDT, can be inner or externally regulated. In the first, a person is driven to do something because it is intrinsically fascinating or pleasurable or just for the sake of doing something (Ryan & Deci 2000b). Intrinsic motivation is the term for this sort of motivation. Extrinsic motivation, on the other hand, is when a person is driven to accomplish something because it leads to a distinct result (Ryan & Deci 2000b). Extrinsic motivation varies a lot in terms of autonomy, depending on how much a behavior has been internalized and integrated into one's identity (Ryan & Deci 2000a). Internalization is the act of absorbing a rule or value, whereas integration is the process of adopting the rule as one's own and allowing it to emerge from one's sense of self (Abdulrazak & Quoquab, 2017).

Extrinsic motivation is divided into four categories in the SDT literature, each correlating to a distinct amount of internationalization and integration. The first case is known as external regulation. In this case, externally imposed behavior occurs when a behavior is undertaken to meet an external demand or to obtain or avoid an externally imposed reward or punishment (Abdulrazak & Quoquab, 2017). There is very little internalization and integration of that conduct here, and the person's sense of self is generally detached (Ryan & Deci 2000a). The introjected regulation is the second type. This refers to "behaviors performed to avoid guilt

or anxiety or to attain ego enhancements such as pride" (Deci & Ryan 2008a, p. 62). Because it is driven by self-esteem-based contingencies, it is still reasonably under control (Moller et al. 2006). This represents behaviors that people engage to feel good about themselves. The third type is regulation through identification. This is a type of extrinsic motivation that is less regulated and more internalized. In this case, the conduct is embraced as a person's own rule due to its personal significance or meaning. Integrated regulation is the fourth form of extrinsic incentive. This form occurs when "the identified regulations are fully assimilated to the self and brought into congruence with one's other values and needs" (Ryan & Deci 2000b, p. 73).

3. LITERATURE REVIEW

The literature was retrieved mainly through the browser Google Scholar and the database ACM Digital Library. Many research papers have been found through cross-referencing. According to the topic investigated, the key words have been mainly researched into the abstract of the papers. Among the lists of the papers displayed, the number of citations and the journal of publication have been taken into consideration. Often, the inclusion of a paper inside the literature used as the basis of the research has been done through a brief reading of the sections of interest. Overall, around 40 papers have been partially or completely analysed. The most used queries, inside the databases, were "telework" AND "team", "team" AND "effectiveness", "virtual" AND "team".

Table 1: Literature review

YEAR	TITLE	AUTHOR AND JOURNAL	CONTRIBUTION
2021	Experimenting during the shift to virtual team work: Learnings from how teams adapted their activities during the COVID-19 pandemic	Ashley Whillans , Leslie Perlow , Aurora Turek, Information and Organization	It is the only paper retrieved which examines the transaction of teams virtually. It has furnished the main gap for the research.
2019	"You have got a friend" The value of perceived proximity for teleworking success in dispersed teams	Caroline Ruiller & Beatrice Van Der Heijden & Frédérique Chedotel & Marc Dumas, Team Performance Management: An International Journal	It makes an analysis of the importance of interpersonal relationship and perceived proximity in dispersed teams.
2018	Unpackaging Manager Mistrust in Allowing Telework: Comparing and Integrating Theoretical Perspectives	Seith Kaplan & Lia Engelsted1 & Xue Lei & Karla Lockwood, Journal of Business and Pshycology	It's one of the paper that furnished the gap.
2017	Virtual teams in organizations	John Mathieu & M. Travis Maynard & Tammy Rapp & Lucy Gilson , Journal of management	It provides a recent and wide recent literature review on virtual teams and the adapted IPO model included in the study.
2017	Communication in virtual teams: a conceptual framework and research agenda	Shannon L. Marlow, Christina N. Lacerenza, Eduardo Salas Dameron S. (2017). Human Resource Management Review	Gives important insights of the communication in virtual teams using the IPO model
2014	Relational Versus Collective Identification Within Workgroups: Conceptualization, Measurement Development, and Nomological Network Building	Shu Zhang Guoquan & ChenXiao-Ping & Chen Dong Liu & Michael D. Johnson, Journal of Management	It was the paper which inspired this study. It provided also a lot of literature useful for the research.
2008	Team Effectiveness 1997-2007: A Review of Recent Advancements and a Glimpse Into the Future	John Mathieu & M. Travis Maynard & Tammy Rapp & Lucy Gilson , Journal of management	It provided a solid literature on teams and more in specific on team's effectiveness.
2006	The Influence of Team Knowledge and Formal Plans on Episodic Team Process- Performance Relationships	John E. Mathieu and William Schulze, Academy of Management	It furnished good information for the research proposition.
2003	Cohesion and Performance in Groups: A Meta-Analytic Clarification of Construct Relations.	Beal, D., Cohen, R., Burke, M., & McLendon, C., Journal Of Applied Psychology	Useful for proposition.
2000	Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being	Richard M. Ryan and Edward L. Deci, American Psychologist	Explains the SDT – Self determination theory.

Source: *personal elaboration*

4. RESEARCH PROPOSITIONS

4.1 Identification

At the base of relational and collective identification, the literature has identified two fundamental social motives (Banaji & Prentice, 1994; Baumeister, 1998): (1) self-enhancement, which is the need for positive information about oneself, such as being competent, pleasant, and morally upright, and (2) belongingness, which is the desire to establish and sustain positive and meaningful connections with people or a social group (Zhang et al., 2017). Belongingness is mainly exhibited in informal nonwork connections with others in the group for those who have a strong relational identity. Informal nonwork connections, as opposed to work-related collaboration, establish and foster emotional ties among group members, who develop preferences and care for one another as a result (Prentice et al., 1994). Interpersonal attraction resulting from the peculiarities and complementarities of intimate and long-term relationships is frequently the starting point for informal encounters among group members (Hogg & Terry, 2000). Warmth and social skills are two positive personal characteristics that encourage informal encounters. These nonwork interactions eventually serve as the emotional glue that binds members to the organization and satisfies their desire for belonging (Zhang et al., 2017).

RP1: Virtualization limits social interactions among the members of the team, hampering the process of belongingness. Hence, virtualization will affect the identification of the team members.

4.2 Motivation

Work motivation is a set of energetic forces that originate both within as well as beyond an individual's being, to initiate work-related behavior and to determine its form, direction, intensity, and duration (Pinder 2014, p. 11). Therefore, motivation is something that derives from the interaction of the individual with the environment. (Latham & Pinder, 2005). SDT suggests that social circumstances may either encourage or discourage intrinsic motivation by supporting or obstructing people's psychological needs. In fact, intrinsic motivation is more likely to flourish in contexts characterized by a sense of security and relatedness (Ryan & Deci 2000, p.71). When examining extrinsic motivation, studies have demonstrated the benefits of

greater internalization by individuals, including increased behavioral effectiveness, greater volitional persistence, increased subjective well-being, and better assimilation of the individual within his or her social group. (Ryan & Deci, 2000)

RP2a: Virtualization hinders the psychological need of relatedness. Hence, virtualization impacts on intrinsic motivation.
RP2b: The less the process of virtualization is internalized by team members, the more it will affect extrinsic motivation.

4.3 Satisfaction

Satisfaction was first defined as the sum of all psychological, physiological, and environmental factors that would lead a person to sincerely claim satisfaction with his or her job (Hoppock, 1935). This means that, while external factors influence job satisfaction, it is still an internal feeling triggered by those factors (Aziri, 2011). Therefore, as a multidimensional construct, it includes various aspects such as satisfaction with colleagues and with the work itself (Roznowski, 1989; Scarpello & Campbell, 1983). Individuals who have instrumentally or emotionally gratifying interactions with their coworkers report higher levels of colleague satisfaction, according to the findings of research (Ducharme & Martin, 2000). This hypothesis has been supported by the findings that workers' desire to keep their group membership, as well as their belief in and acceptance of group objectives and values, are positively related to their overall happiness with their jobs (see Brooke et al., 1988). In this regard, Zhang et al. (2014) have found that relational identification is positively related to satisfaction with group members and, since relational identification enhances both cooperative and emotional connections, it represents a major source of satisfaction with team members (Cross et al., 2000).

RP3: Virtualization limits relational identification and emotional interactions. Hence, virtualization affects the satisfaction of team members.

4.4 Team Composition

Team outcomes are a product of the interaction of team members, not simply the aggregated outputs of individuals who perform tasks independently (LePine 2003, p.30). Many studies assess that differences in terms of KSA within a group have beneficial effects on team performance (e.g., Cooke et al., 2003; Hirschfeld et al., 2005; McClough & Rogelberg, 2003; Stevens & Campion, 1999). Specifically, high-performing teams tend to be those with members who have accurate taskwork knowledge about their own roles and are dissimilar to each other in the structure of this knowledge (Cooke et al. 2003, p.194-195). In addition, many studies have argued that team composition variables such as members' knowledge also influence process-performance relationships (Marks et al., 2001). Teams made up of relatively expert individuals, for example, may be better prepared to manage complicated information, implement contingency plans, or make reactive strategy modifications, and therefore execute good transition procedures (LePine, 2003). Through an experiment, Mathieu & Schulze (2006) discovered that teams with more differentiated knowledge were able to execute better transition processes than less knowledgeable ones.

RP4: Virtualization process will be smoother for teams with more diversity in terms of KSA.

5.5 Team Cohesion

Cohesion is defined as a team's commitment to the overall task or to each other (Goodman et al., 1987). According to Beal et al. (2003), team cohesion has three dimensions, each of which contributes significantly to team performance. They describe these components as: *Interpersonal attraction*, a shared liking for or attachment to the members of the group; *Task commitment*, the extent to which the task allows the group to attain important goals or the extent to which a shared commitment to the group's task exists; *Group pride*, the extent to which group members exhibit liking for the status or the ideologies that the group supports or represents, or the shared importance of being a member of the group (Beal et al. 2003, p. 996).

RP5a: Virtualization process will be smoother for teams with high cohesion.
RP5b: The virtual environment lessens team cohesiveness over time.

5. METHODOLOGY

5.1 Research design

The topic of virtual teams has recently piqued researchers' interest. There were numerous aspects and peculiarities of working in virtual teams that were discovered. In this field, the way in which managers shape their attitudes and behaviors when dealing with virtual teams was given a great deal of consideration. Moreover, as previously stated, academics have concentrated their efforts primarily on static instances, and therefore, because little is known about the shift from traditional to virtual work settings, the goal of this study is to investigate rather than forecast certain outcomes. The natural consequence is to adopt a qualitative approach. Moreover, when the articulation and development of abstract notions is necessary, such as in the case of identification motivation, satisfaction, and team cohesion, a qualitative research method is more appropriate (Spiggle, 1994).

5.2 Application domain

The study is intended to investigate how teams shift to teleworking. More specifically, the dynamics that arise when teams, and their members, that used to work in the same physical environment switch to remote/virtual working. The first part of the study will focus on how the members of the team are affected by the virtualization process. Therefore, in this section of the research, the unit of investigation will be individuals. On the other hand, the research will investigate some team related dimensions. Consequently, the group will be the unit of investigation.

5.3 Sample description

The sample will be constructed by individuals who work in groups and have made the transition to teleworking during the past two years. The sample will be as diverse as possible in terms of sectors represented and the location of the corporate headquarters where respondents are based, among other things. There will be between 5 and 15 instances included in the sample, depending on how long it takes to achieve theoretical saturation. Wherever feasible, references to personal networks will be utilized to construct the sample. If this is not the case, individuals will be approached through the employment-oriented social media: LinkedIn.

5.4 Data collection

The process of collecting data will be performed through one-to-one semi-structured interviews. In qualitative research, semi-structured in-depth interviews are the most prevalent data source. This technique usually includes a conversation between the researcher and the participant, which is led by a customizable interview procedure and reinforced by follow-up questions, probes, and comments. The technique enables the researcher to gather open-ended data, dig deeply into personal and often sensitive topics, and examine participants' ideas, emotions, and opinions about a certain subject (DeJonckheere & Vaughn, 2019). Interviews conducted in a semi-structured manner are especially well suited to this research because they allow for the investigation of the meaning of their behavior (Jarratt, 1996).

Due to the characteristics of the target sample, interviews will take place using video conferencing software such as Zoom, Google Meet, or Skype. The video calls will be recorded with the consent of those who participate in this study. This will ease the flow of the conversation since it will be easy to retain attention on the topic rather than taking notes on what is said. In the case that people will not agree, a mix of notes and real time automatic transcription tools will be required. However, notes will be taken in any case to capture all aspects of the interview that cannot be transcribed, such as gestures, attitudes, and behaviors.

5.5 Data analysis

The interviews will be transcribed using some automatic software such as the dictation feature of Microsoft Word, Google Docs, Speechnotes, or Transcribe. This operation will be performed by leaving the software to automatically transcribe for 15 minutes. Afterward, the audio will be played again while reading the transcription. Possible mistakes will be corrected. The operation will be repeated until the end of each interview. Once every interview has been transcribed, a content analysis will be conducted through MAXQDA. This software helps researchers and analysts gain insights from written or text documents such as submissions or open text questions in a survey. As a result of the text coding, the software will provide some important insights that will be used to draft the study's discussion and results.

5.5.1 Reliability

In research, it is of fundamental importance to maintain good data accuracy. Therefore, special attention will be given to the correctness of the interview transcriptions to ensure the trustworthiness of the study. If feasible, the transcriptions may be examined by a third party

and compared to the findings of the researcher to validate the propositions. All the data may be double-checked with respondents, if necessary, in order to validate the researcher's conclusions. In addition, the comparison with the other answers may be utilized to verify the overall outcomes. Therefore, having multiple respondents will be critical to ensure the reliability of the study (Saunders et al., 2009). In the case of interviews performed in languages other than English, it will be asked to a third party to control the results of the translation.

5.5.2 Transparency

When conducting exploratory studies, it can be difficult to provide a linear explanation of the findings. However, transparency is a critical component for assuring the validity and reliability of a research study (Kolbe & Burnett, 1991). In this regard, all the interviews' transcripts will be attached to the research, allowing the reader to evaluate them and make comparisons between the findings and the data collected. In addition, to ensure a higher level of transparency, in the case of interviews in languages other than English, the key parts cited in the elaborate will be translated.

6. EXPECTED CONTRIBUTIONS

6.1 Scholarly Contributions

Although there is a growing body of knowledge on virtual teams, as already underlined, there are still several unanswered issues about how virtualization affects team functioning and its members. Consequently, this study will investigate how team members and teams are affected when they switch from working in a co-located setting to working in an environment where all team interactions are suddenly forced to be mediated by digital technology. Therefore, this study aims to contribute to a more comprehensive knowledge of virtual teams and the dynamics that arise as a result of virtualization. In addition, it will offer an original application of the SIT and SDT theories to the process of virtualization.

6.2 Implications for Business and Society

This study will provide a strong understanding of how the satisfaction, the identification and motivation of the group members will be impacted by the process of virtualization of the team. Moreover, some insights on how team's cohesion is influenced by the transition to virtual

environment. Finally, it will study provide hints on how differences in terms of KSA among team member affect the transition. Hence, it will furnish important information for organizations and their management willing to perform the transaction from a physical to a complete or partial virtual working environment. Raising awareness of virtualization could help managers structure jobs and tasks in a way that enhances motivation and identification among the members of the teams. On the other hand, the outcomes will be crucial for team members, who will be able to comprehend the critical issues of relationship building in virtual environments and, as a result, be better prepared to overcome them.

7. CHAPTERS OVERVIEW

In this part, the reader will get a short overview of the overall structure of the final elaborate piece. Because the research is still in its early stages, several of the chapters contained in this part are not yet viewable since they have not been developed yet.

i. *Abstract*: in this part, it is possible to find a small summary of the entire study. In a concise way, it describes the background of the research, its aim and methodology, and the expected contribution.

1. *Introduction:* this section provides an elucidation of the background of the study and, therefore, of how organizations were forced to switch to teleworking. It also gives some insights into virtual teams, together with a brief overview of the scholarly discussion on the topic. It presents the research gaps and the contributions that emerge by filling these gaps. Consequently, it explains the aim of the research and it briefly introduces the theories on which the study is based. Finally, it gives an overview of the work's structure.

2. *Theoretical Framing:* this part shows the main findings, theories, and concepts gleaned from the literature on teams and virtual teams. As a result, this section contains the framework upon which the study and its findings will be based.

3. *Literature review*: it contains a brief clarification of how the literature, upon which the study is built, was retrieved. It also presents the most useful research paper utilized.

4. *Research proposition:* an explanation of the research questions, and therefore of the objective of the research, can be found in this chapter.

5. *Methodology:* it provides a description of the approach used for the study. It contains the application domain of the research, the sample description, as well as an explanation of data collection and analysis.

6. *Expected contribution:* this section describes the study's expected contribution to the literature and to the business world.

7. *Results:* it will provide the results of the analysis computed on the data retrieved from the interviews. This will be the base for the research's findings and contributions.

8. *Limitation and future research:* an understanding of the limitations of the study will be underlined together with some suggestions for future researchers.

9. *Conclusion:* it will provide a summary of the entire work with its results.

10. *References:* list of research papers and unscientific sources which were employed in building the study. The section is based on APA 7th edition.

8. WORK PLAN

Figure 2. Work-plan master thesis

MASTER THESIS - EUROPEAN MASTER IN BUSINESS STUDIES																						
ACTIVITES		September					October				November				December					January		
		35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3
READING	Topic definiton																					
	Research Literature																					
	Reading Literature																					
METHODOLOGY	Interview Design																					
	Define Sample																					
	Interviews																					
WRITING	Data Cleaning																					
	Data Elaboration																					
	Coding																					
	Analysis of the results																					
	Integration framework																					
	Define Propositions																					
	Refinement																					
	Conclusion																					
PRESENTATION	Speech																					
	PPT																					
	Dissertation preparation																					
DEADLINE	Exposè						04.10															
	Final elaborate																				13.01	
	Defence																					21.01

Source: personal elaboration

9. REFERENCES

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