

**Behind Boundary Management: a look into Self-leadership and Autonomy when
Working from Home**

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Abstract

Working from home, previously framed as the same concept as teleworking, is a practice that had already increased in the past decades, but the current health crisis (SARS-2 COVID19) exacerbated the number of home workers all of a sudden (Popovici & Lavinia, 2020). Thus, many workers were forced to manage the boundaries between work and home without experience nor the physical boundary that is blurred under these circumstances in contrast with previous teleworkers. Thus, this study aims to address the gap that exists within the literature since most of it focuses on job conditions rather than the individual when understanding boundary management when working from home (Beauregard, et. al., 2019). Specifically, the aim was to explore the impact of self-leadership on boundary management when working from home and, to clarify the role of autonomy in the matter. 168 participants filled out an online survey that was distributed through their private network that included various items about self-leadership, boundary management, and autonomy. To analyze the data and testing hypotheses, correlations and regression models were computed. Results showed a significant association between self-leadership and boundary control but not integrative behavior. Furthermore, a negative significant association was found between boundary control and integrative behavior, and lastly, autonomy did not have any moderating effect of self-leadership with boundary control nor with integrative behavior. However, autonomy was significantly linked with boundary control but not with integrative behavior.

Keywords: boundary management, self-leadership, work from home, autonomy

Behind Boundary Management: a look into Self-leadership and Autonomy when Working from Home

Working from home, previously framed as the same concept as teleworking, is a practice that had already increased in the past decades, but the current health crisis (SARS-2 COVID19) exacerbated the number of home workers all of a sudden (Popovici & Lavinia, 2020). Thus, many workers were forced to face the challenges and opportunities entailed when working from home (Müller & Niessen, 2019; Nakrošienė et al., 2019). Notably, home workers were set to manage the boundaries between work and home without experience nor the physical boundary that is blurred under these circumstances in contrast with previous teleworkers who could choose their working location (Allvin et al., 2011; Basile & Beauregard, 2016; Wang et al., 2020).

Boundary management when working from home has been framed within the literature as both a challenge and an opportunity. On the one hand, one has the possibility to attend family demands with greater flexibility, on the other hand, one encounters more interruptions and distractions (Beauregard, et. al., 2019; Nakrošienė, et. al., 2019; Wang, et. al., 2020) which complicate to keep separated the domains. Some authors have suggested that keeping the domains separate enhances a health-oriented remote practice (Mojtahedzadeh, et. al., 2021) and helps avoiding negative outcomes, for example, work-family conflict among others (Beauregard. et. al., 2019). Furthermore, the use of ICTs (e.g., mobile phones or computers) makes it easier to increase the permeability of the boundaries between both domains making it difficult to set them apart but also facilitating to attend demands more autonomously (Hislop, et. al., 2015).

I will explain in detail below how individuals manage the boundaries and how this issue has been studied and theoretically framed, but for now, I introduce the reader by mentioning some of the different perspectives. One of them centers on the preference for either integration and/or segmentation of the two domains, work and home (Nippert-Eng, 1996). Another one focuses on individual psychological traits behind one's boundary management. Notably, how much perceived control of the boundary an individual has (either high or low) seems to be a relevant element to explain boundary management-related behaviors (Kossek, et. al., 2012). Lastly, strategies individuals use to manage the

boundaries have been explored. Specifically, physical, behavioral, time-based strategies and communication tactics (Basile & Beauregard, 2016).

Overall, these different perspectives imply cognitive and behavioral efforts. These could change from individual to individual and so the way they manage the boundaries. However, the literature concerning individual characteristics is rather limited, in both the topic of working from home and concerning boundary management when working from home (Basile & Beauregard, 2016; Beauregard, et.al, 2019). The concept of self-leadership is one concept that could shed light in this regard by explaining one of the skills that antecedes how individuals manage the boundaries between home and work in the context of working from home. I will develop it further in the text, but to clarify terms to the reader, self-leadership refers to a self-influence process in which the individual uses strategies to perform (Neck & Houghton, 2006) and it has been previously linked with part-time homeworkers (Müller & Niessen, 2019).

In addition to self-leadership, autonomy is a relevant concept to this matter. It has been related to boundary management, self-leadership and studied in the context of working from home (Beauregard, 2016; Breevaart, et.al., 2014; Müller & Niessen, 2019). In the working context, it refers to the freedom and independence an individual has when working. Particularly, when working from home, it has shown to be relevant for different outcomes, including job engagement, turnover intentions, family-to-work conflict, and depression. However, these findings have been inconsistent across the literature (Basile & Beauregard, 2016; Kossek, et. al., 2006; Wang, et. al., 2020).

So far, I have provided an overview of the following text. I explained boundary management framed as both a challenge and opportunity in the context of working from home. I mentioned some perspectives in which boundary management has been approached across the literature. Further, I raised the concept of self-leadership given that it could help deepening the understanding of what antecedes an individual's boundary management. Finally, I pointed out the importance of autonomy since it has been linked with all previous concepts. Forthcoming, I will deepen into all these topics, intending to address the gap in the literature since most of it focuses on job conditions rather than the individual when understanding boundary management when working from home (Beauregard, 2019).

Specifically, I aim to expand the knowledge regarding the personal skills that individuals use when working from home to self-influence their behavior by investigating the relation of self-leadership with boundary management and the moderating effect of autonomy. Employers and workers could benefit from deepening the understanding of the effects of self-leadership in the context of working from home. Strategies, trainings, and policies could emerge from a scientific perspective by focusing on the individuals' skills. This is crucial in these challenging times where a global pandemic has made working from home what some authors call the "new normal" (Wang, et. al., 2020, p. 2), and a practice that may be "here to stay" (Popovici & Lavinia, 2020, p. 471).

Working from home

Working from home has already increased in the last decades and is prospected to increase more by 2024 (Müller & Niessen, 2019; Nakrošienė, et.al., 2019). However, due to the current health crisis (SARS-2 COVID-19) the increase is no longer gradual, leaving home workers in a different scenario than the one previous teleworkers use to have (U.S. Bureau of Labour Statistics, 2019; Popovici & Lavinia, 2020). Teleworking, by definition, implies working in another place than the traditional office, but not necessarily working only from home. Thus, previous teleworking arrangements have varied in terms of contract and location. Teleworkers could be self-employed, have a full-time or part-time teleworking contract, and choose their working location (Beauregard, et. al., 2019; Müller & Niessen, 2019; Nakrošienė, et.al., 2019). However, working from home as conceptualized here entails that home workers are in a disadvantaged position compared to previous teleworkers. They do not have the possibility to have those flexible working arrangements, cannot change working location nor possess the same skills and experience (Kniffin, et. al., 2021; Wang, et. al., 2020).

Nevertheless, far from framing working from home as an advantaged or disadvantaged scenario as a whole, research suggests it entails both challenges and opportunities. Examples of opportunities are time planning freedom, reduced informal communication, increased family and leisure time, lower stress, increased autonomy, reduced travel and other costs, and more frequently mentioned, improved productivity (Harker & MacDonnell, 2012; Kniffin, et. al., 2021; Nakrošienė, et. al., 2019; Popovici &

Lavinia, 2020). As challenges, it has been highlighted by the same authors and some others, work-home and home-work interference, lack of face-to-face communication at work, working longer than the formal hours, time pressure and, most mentioned, social isolation or loneliness (Beauregard et. al., 2019; Greer & Payne, 2014; Hislop, et. al., 2015; Jostell & Hemlin, 2018; Thulin, et. al., 2019; West, 2017). Particularly, being set to manage the boundaries between work and home has been framed as a challenge and an opportunity (Allvin, et. al., 2011; Basile & Beauregard, 2016; Beauregard, et. al., 2019; Nakrošienė, et. al., 2019; Popovici & Lavinia, 2020; Wang, et. al., 2020).

On the one hand, one can attend demands with greater freedom due to the flexibility since permeability of the boundaries is increased. This allows one to respond to home demands in working space and time, and vice versa. For example, the home demand of setting the washing machine to do laundry can be done during working hours or, a work-related report can be done during movie time at home. On the other hand, one must manage both domains with greater interference. Each domain has different demands that home workers are required to meet. This can be notably difficult especially under the global pandemic circumstances where one is not allowed to change working location, and therefore, there is an “absence of boundaries and contextual cues” (Geer & Payne, 2014, p. 90). Specifically, physical boundaries are eliminated, temporal boundaries are blurred, and the psychological transition between roles is altered (Geer & Payne, 2014).

These different ways in which boundaries are either eliminated or blurred make it difficult to maintain the domains separated. Thereby, the possibility to changeover through them is restricted. It has been suggested by some authors that this changeover or transition between domains is necessary to achieve a health-promoted work from home practice (Mojtahedzadeh, et. al., 2021), in addition, Kniffin et. al. (2021) referred to the lack of possibility of transitioning between domains as something that can be “a burden too” (p.4). The opposite of this, i.e., keeping the domains without separation, is known as integrative behavior and it has been linked with negative outcomes, e.g., work-family conflict, depression, or stress (Beauregard. et. al., 2019; Kalliath & Kalliath, 2014; Kossek, et. al., 2006).

Furthermore, managing the boundaries when working from home entails the usage of ICTs. Its usage has shown to have a “paradoxical” role (Hislop, et. al., 2015, p.224), as it

helps the individual to face isolation and have greater autonomy since one can change from one role to another allowing constant crossing of the boundaries, thus, the permeability of the boundary is increased, and different demands can be attended. However, the excessive need of their usage eliminates the autonomy and, the constant interference through them can lead to fatigue, virtual presenteeism, anxiety and burnout (Hislop, et. al., 2015; Kniffin, et. al., 2021; Popovici & Lavinia, 2020).

So far, I presented advantages and disadvantages of working from home and the role of boundary management and ICTs. I will now expose theoretical perspectives and literature that frame boundary management and explain it in depth at the individual level.

Boundary management

The concept of boundary management has been addressed from different approaches throughout the literature, it refers to how an individual handles the boundary between work and home domains by responding to each domain demands. Before addressing theories and models in which the concept has been framed, I will make a note regarding phrasing of boundary management-related concepts to clarify terminology to the reader.

The notion of two different separated domain's (home and work) refers to a "structural phenomenon that involves spatial, temporal, psychological and social separation between work and home" (Mustafa & Gold, 2013, p.414). This separation is given by an imaginary line, namely, boundary. The extent to which this boundary allows to be crossed refers to permeability of the boundary (Allvin et. al., 2011). Moreover, regarding domains' terminology, work domain has consistently been phrased as such in the literature. However, home domain has also been phrased as 'family domain' or as 'life domain'. Nonetheless, for consistency purposes and, given that it has been claimed that *home* is a more inclusive term than 'family' or 'life' (Kreiner, 2006), I phrase it as 'home domain' in this study. With this clarification, I will now expose models and theories in which boundary management has been addressed. The theories focus on the individual's actions and strategies to handle the domains and the models focus instead on explaining how work and home domains interact.

These models are the segmentation model, the spillover model, and the compensation model (Allvin et. al., 2011). The segmentation model suggests the two domains are separated spheres and each one satisfies different needs. This means that each domain is independent from each other. An example of this is the perception of the work domain as the one where one performs and the home domain the one for leisure time. A second model, the spillover model, suggests both domains' difficulties influence each other, meaning that the boundary is permeable, allowing the needs of one domain to intrude the other. In this model, experiences, and beliefs of one domain affect the individual's behavior in the other and therefore are not independent from each other as they are in the segmentation model. An example of this is an individual having an argument at home, becoming upset and have a negative attitude towards co-workers later at work. In this example the emotions and thoughts emerged at the home domain are affecting social interactions at the work domain. A third model, the compensation model, mentions the need of a compensation between issues of one domain to the other. An example of this, is planning an additional uncommon recreative activity at home after missing a family birthday because of staying longer in a meeting at work. In this example, a demand from the work domain, attending a meeting and therefore missing a birthday, is compensated by having a special occasion at the home domain (Allvin, et. al, 2011).

In contrast with these models that focus on the interaction between the domain's demands, there are theories which instead consider individual's actions for handling them. Meaning that they focus on how individuals attend the demands by either separating or blending the domains. While some individuals tend to blend or integrate the domains others tend to separate or segment them more (Kossek, et. al., 2012). How individuals do this has been explained by different authors.

According to Kreiner (2006) individuals blend the domains by "allowing emotions, thoughts, and behaviors to co-exist regardless of where these come from and where the individual is" (p.2). On the contrary, individuals separating them keep these emotions, feelings and behaviours, depending on the domain where these come from and where they are. An example of blending domains is answering a job call during a family dinner or a family call during a work meeting while an example of separating them would be only answering calls from work during working hours and family calls during home time.

Another theory, the theory of boundary work by Nippert-Eng (1996), argues that individuals enact a preference for either integrating or segmenting the domains by performing a work or home role regardless of their physical location. However, this preference for either integration or segmentation varies from individual to individual in a spectrum or continuum, meaning that individuals do not only segment or integrate the domains, but instead each individual separates or blends them to a different degree in different situations (Ashforth, et. al., 2000, in Palm, et. al., 2019). In addition to the explanation where and individual blends or separates work and home domains in line with one's preference (Kreiner; 2006; Nippert-Eng, 1996; Palm, et. al., 2019), other authors have focused instead on psychological factors behind the enactment of either integration or segmentation (Kossek, et. al., 2012).

These psychological factors are boundary control, work identity, family identity, nonwork interrupting work behaviors, and work interrupting nonwork behaviors according to Kossek et. al. (2012). The authors described six profiles based on these in which individuals integrate the boundaries to various degrees. Particularly, boundary control shown to be the most important factor. This means that the level of perceived control of the boundary an individual has, either high or low, has a relevant impact on both, positive and negative work-home outcomes. Consistently, Palm et. al. (2019) found in their study that behavioral control (operationalized as Kossek et. al., 2012 boundary control) predicts and is negatively associated with integrative behavior, however, these findings were not contextualized at a working from home setting.

Moreover, most of the literature regarding boundary management when working from home focuses on contextual rather than individual-centered strategies or mechanisms (Beauregard, et. al. 2019). Only some authors have addressed this issue. Among them, Mustafa and Gold (2013) show in their study, where twenty self-employed teleworkers were interviewed, that they used temporal (e.g., setting a time for starting the working day) and spatial (e.g., using different locations) strategies, and that temporal boundaries are dependent on physical boundaries. Another example is Basile and Beauregard (2016), they describe in their qualitative study four strategies home workers use in order to manage their boundaries. First, physical strategies, where the individual sets different spaces for performing each role, (home or work role). Second, time-based strategies, in which the

individual sets time schemes for performing tasks for each domain. Third, behavioral strategies, in which the individual uses ICTs to manage the boundaries and transition from domains and, fourth, communication tactics, in which the individual makes agreements to manage expectations in both domains. The authors claimed these are the strategies used by “successful teleworkers” (Basile & Beauregard, 2016, p.107). However, they acknowledge that home workers who lack the possibility to set different spaces struggle with using physical strategies.

In line with this, other limitations are to be acknowledged. For instance, the context of the current health crisis limits the usage of physical and, therefore, temporary strategies in line with Mustafa and Gold (2013), the use of ICTs can be paradoxical as mentioned above, while increasing it could prevent home workers from facing isolation which is a recurrent challenge when working from home, it could also lead to negative outcomes (Hislop, et. al., 2015; Wang, et. al., 2020).

Overall, strategies for managing the boundaries between home and work, framed as the enactment of integration-segmentation preference and the level of perceived control of the boundary between work and home (boundary control) vary from individual to individual considering that they require individual’s cognitive and behavioral efforts (Killiath & Killiath, 2014; Kossek et. al. 2012; Kreiner, 2006). It has been suggested to address the gap in the literature that focuses on individual differences when working from home since little research has been done in this regard (Beauregard, et. al. 2019; Brösemyr & Haskovic, 2017; Popovici & Lavinia, 2020). Hence, concepts like self-leadership provide a theoretical background to understand the skills and mechanisms underlying how individuals manage boundaries at home. I will deepen in the following text on the concept and then explain how specifically I believe it can relate to boundary management when working from home since it is yet to be studied and it could help to shed light in this direction.

Self-leadership

The concept of self-leadership was developed by Manz (1986) and it refers to the use of strategies as a self-influence process in which one regulates one’s own behaviors. These strategies are divided in three components, namely, behavioral strategies,

constructive thoughts, and natural rewards (in Uzman & Maya, 2019) which I explain below in detail.

Behavior focused strategies strive for behavior management and include self-observation, self-goal setting, self-reward, self-punishment and self-cueing. Constructive thoughts strive for building new thought patterns that can improve performance and include identifying dysfunctional thought patterns and replace them with more constructive ones. An example of this is replacing the thought of ‘I won’t finish this report today’ with ‘I’m doing my best and everything that is under my control to finish this report’, mental imagery, and positive self-talk. Natural rewards strategies strive for creating situations in which the individual enjoys the tasks because of the task itself. One way to do it is by “building more pleasant and enjoyable features” (p. 272) of a task, for example, the unpleasantly task of making calls every day and communicating the same information. To build a new feature on this task, the individual starts including an additional fun icebreaker at the beginning of each call, which in turn, makes the task somewhat more pleasant than before. Another natural rewards strategy is to shape one’s own perception and meaning, by focusing on the positive sides of a task that are more fun and enjoyable to perform (Neck & Houghton, 2006).

In spite of an exception where natural rewards showed to be a predictor of employee performance (Steinbauer et al., 2018), most authors have framed these strategies as “problematic” (Müller & Niessen, 2019, p. 887) due to their inconsistencies within the literature (Kunagornpitak et al., 2019; Uzman & Maya, 2019) and low reliability of its subs-scales (Houghton et al., 2012). Thus, it is no surprise that natural rewards have been excluded when studying self-leadership in the context of teleworking (Müller & Niessen, 2019). This could be explained since not all the tasks allow to add pleasant features, and it can be challenging to focus on the positive side of certain tasks (e.g., very repetitive tasks).

Nevertheless, self-leadership has been widely studied and there is a large body of research showing its positive effects (see a review in Neck and Houghton, 2006) and the potential of its applicability (Kunagornpitak, et. al., 2019; Müller & Niessen, 2019) as a useful, learnable skill in contexts of crisis and non-crisis (Kunagornpitak, et al., 2019; Müller & Niessen, 2019; Neck & Manz, 1996). For instance, a group of workers showed increased self-leadership and adaptative performance after a self-leadership training while

their organization went unexpectedly to bankruptcy (Marques-Quinteiro, 2019). Other outcomes with which it has been associated are self-efficacy, job performance, self-esteem and life satisfaction (Breevart et al., 2014; Uzman & Maya, 2019).

In line with this, and considering that natural rewards lack of statistical reliability, self-leadership has been operationalized in relation to working and working from home settings, including boundary management related outcomes (Houghton et al., 2012), through three factors that encompass the first two components of self-leadership (behavioral strategies and constructive thoughts but not natural rewards), namely, behavior awareness and volition, constructive cognition and task motivation. These are the factors that are considered in the present study to investigate self-leadership as a skill that antecedes boundary management.

Self-leadership and Boundary Management

To the best of my knowledge, self-leadership has not been directly related to boundary management in the context of working from home in the literature yet, even if concepts like self-discipline (Beauregard et al., 2019; Wang et al., 2020), self-goal setting (Fenner & Renn, 2010; Geer & Payne, 2014; Mustafa & Gold, 2013), self-cueing (Mustafa & Gold, 2013), and self-motivation have (Beauregard et al., 2019). These concepts explain the process of boundary management from a descriptive perspective (what it is) which limits the possibilities of its applicability in contrast with self-leadership in which behaviors are explained from a normative perspective (what it should be) (Neck & Houghton, 2006).

Moreover, self-leadership has shown to have a negative relation to work-home and home-work conflict (St-Onge, Deschênes, & Renaud, 2010), being the first one conflicts emerged from work-related domain issues intruding the home domain and the latter one home-related issues intruding the work domain. Both types of conflict are recurrent outcomes of integrative behavior, i.e., merging and blending elements of work and home domains. Other concepts entailed within self-leadership have also been linked with boundary management. For instance, Kalliath and Kalliath (2014) found social workers use cognitive reframing for coping with work-family conflict. Another example can be seen in Palm et al. (2019) whose findings suggest a negative relation of behavioral control with integrative behavior. Behavioral control entails people's beliefs in regard to the control they

perceive they have on the boundary, which could be encompassed within the constructive cognition self-leadership factor; these beliefs drive or keep them from performing an integrative behavior (the authors operationalized it as ‘boundary control’ from Kossek et. al., 2012).

Additionally, and in relation to the context of working from home, Steinbauer, et. al. (2018) found that intrinsically motivated workers use self-leadership to improve their job performance while being ostracized, situation where workers end up being isolated. More directly related to the context of working from home, Müller and Niessen (2019) found that part-time teleworkers use more self-leadership strategies when they work from home in contrast with when they work at the office and, they had a higher work satisfaction through goal setting (a self-leadership strategy) when teleworking in comparison to office days, and this relation was moderated by autonomy.

Noticeably, autonomy comes across as a relevant concept to this topic. It has been related to boundary management, self-leadership and studied in the context of working from home (Beauregard, 2016; Breevaart, et. al., 2014; Müller & Niessen, 2019). Therefore, I will point out its role and then, I will provide different hypotheses stating how all these concepts could be related.

The role of Autonomy role regarding boundary management

Autonomy has shown to have a relevant role for managing boundaries when working from home. Scholars have defined it in the work context as the freedom and independence one has when performing one’s work tasks, specifically for managing their schedule, making decisions, choosing methods or procedures to work (Hackman & Oldham, 1976; Müller & Niessen, 2019).

On the one hand, it has shown to be an advantage due to the flexibility that allows the individuals to control and maintain the boundaries in line with their preferences (either integration or segmentation of the two domains), thereby, allowing individuals to attend job and family demands. Moreover, it has been negatively correlated with loneliness and positive effects of autonomy on work-life balance have been found like lower turnover intentions, less family work conflict, and less depression (Kossek et. al., 2006). On the other hand, autonomy could result in an overuse of ICTs, which would make workers

available at all times, attend work even when being ill, also known as presenteeism (Efimov, et. al., 2020), and allow more frequent family interruptions. This would increase work-family conflict (Basile & Beauregard, 2016; Beauregard, 2019; Hislop et al., 2015; Nakrošienė et al., 2019; Wang et al., 2020). Nevertheless, these associations are still unclear and there are inconsistencies whether the flexibility is associated or not with integrative behavior (Palm et al., 2019).

In relation to self-leadership, autonomy showed to have a moderating role of most self-leading strategies since they were more used when teleworking and associated with greater work satisfaction (Müller & Niessen, 2019). It has also been suggested that individuals may experience greater autonomy when using self-leadership (Neck & Houghton, 2006), whether if that leads to greater control and management of the boundary when working from home is yet to be studied as well as the relation between self-leadership and boundary control variables (boundary control and integrative behavior) by their own. Thus, I state in the following, hypotheses about how I expect these associations to be in line with the literature presented above.

Aim and Hypotheses

Overall, the gap in the literature remains without explanations on how individuals manage the boundaries when working from home from a normative perspective despite of the many challenges and opportunities entailed in this working setting. Especially, to be set to manage the boundaries. Considering this, the potential of self-leadership and the role of autonomy in relation to it, this study aims to answer what the impact of self-leadership is on boundary management when working from home. Furthermore, to investigate the role of autonomy, does it have a moderating effect? Or does it have an effect itself on boundary management when working from home? Investigating the relation between self-leadership and boundary management, and the moderation effect, if existing, of autonomy within a working from home context, could shed light on these questions and benefit workers and employees who face a practice that has been claimed to be “here to stay” (Popovici & Lavinia, 2020, p. 471) and that will most likely be kept even after the current health crisis according to some authors (D’angelo et al., 2021).

In line with these questions and the literature presented, I expect a positive significant relation between self-leadership (H1) and its factors, namely, Behavior Awareness and Volition (H1a), Task Motivation (H1b) and, Constructive Cognition (H1c) with perceived boundary control (See complete hypotheses model in Figure 1).

Furthermore, I expect a significant negative relation between self-leadership (H2) and its factors, namely, Behavior Awareness and Volition (H2a), Task Motivation (H2b) and, Constructive Cognition (H2c) with integrative behavior (See complete hypotheses model in Figure 2).

Figure 1.

Hypotheses Model of Self-leadership, Autonomy, and Boundary Control

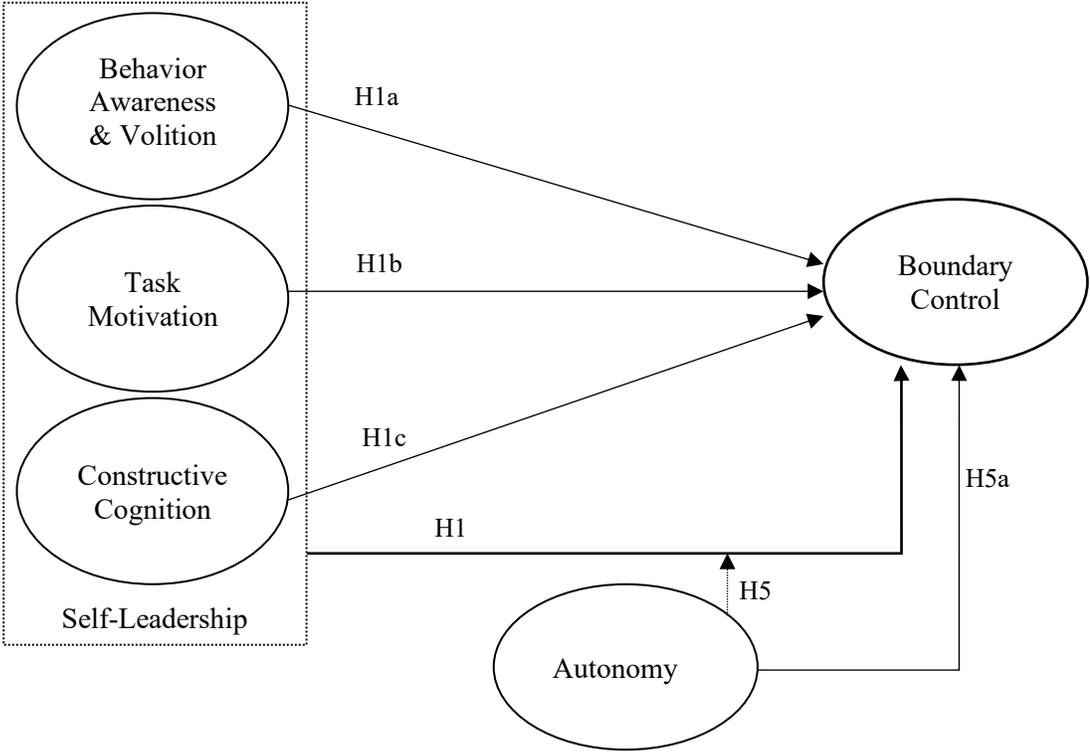
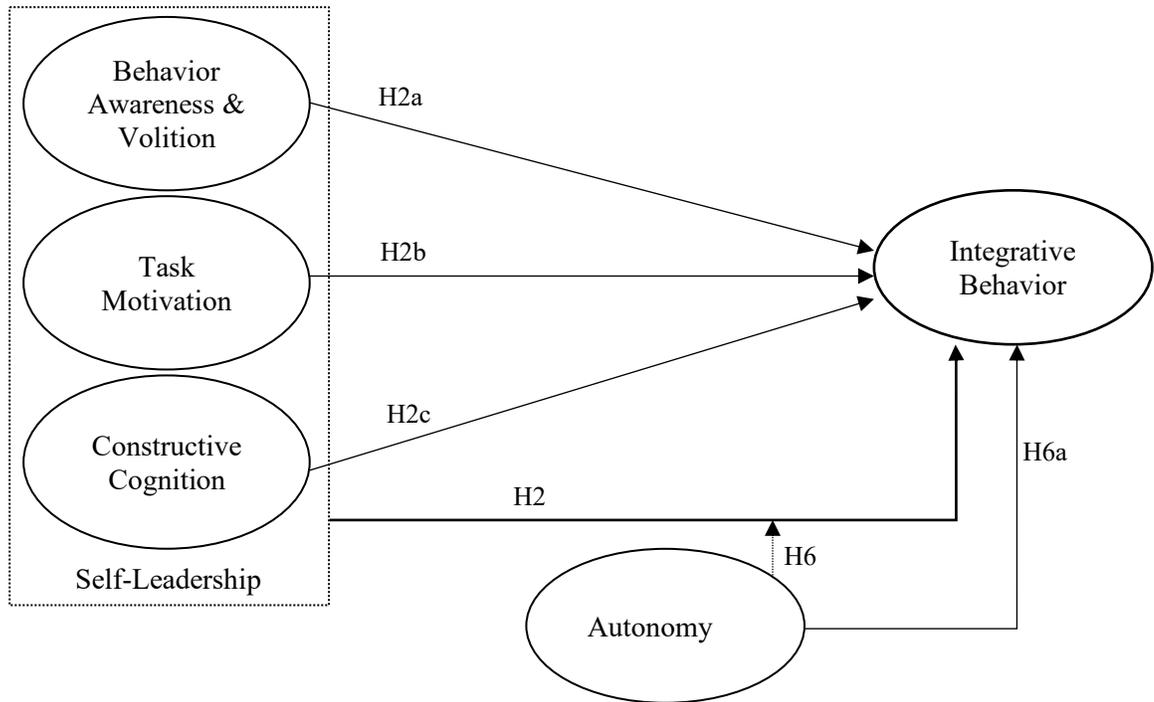


Figure 2.

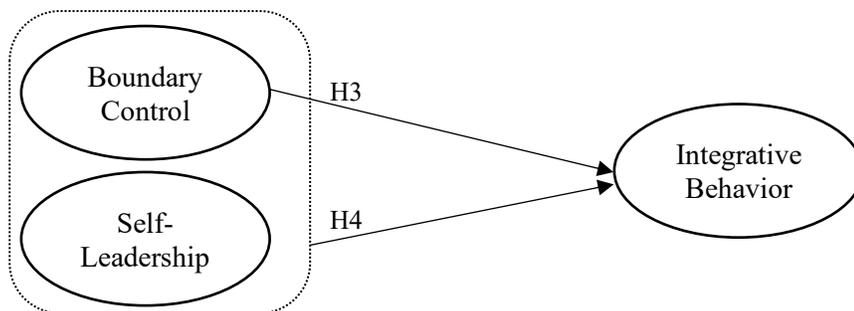
Hypotheses Model of Self-leadership, Autonomy, and Integrative Behavior



In addition, it is not clear whether perceived boundary control is entailed within self-leadership cognitive strategies, because of this and in line with Palm et al. (2019), I expect a negative significant relation as well between perceived boundary control and integrative behavior (H3). This relation is stronger when including self-leadership (H4) (See complete hypotheses model in Figure 3).

Figure 3.

Hypotheses Model of Self-leadership, Boundary Control, and Integrative Behavior



Moreover, autonomy has also shown to play a relevant role in relation to boundary management and self-leadership when working from home across the literature (Beauregard et al., 2019; Breevaart et al., 2014; Nakrošienė et al., 2019; Palm, et. al., 2019; Wang et al., 2020). Considering its role as a moderator I expect the relation between self-leadership and boundary management variables, boundary control (H5) and integrative behavior (H6) to be moderated by autonomy.

In addition to its role as a moderator, autonomy has shown to have an impact on home-work and work-home conflict by itself. However, there are inconsistencies since it has shown to increase but also decrease these types of conflict (Jostell & Hemlin, 2018; Kossek, et. al., 2006; Wang, et. al., 2020). This dual role has been explained as greater autonomy allows the freedom to handle intrusions when working from home, however, keeping the domains separated without guidance can be challenging. Consistently with this, autonomy has been associated to presenteeism which has been explained as more freedom can prevent the individual to influencing oneself to leave the work domain (Basile & Beauregard, 2016; Breevaart, et.al., 2014; Efimov, et. al., 2020; Thulin, et. al., 2019). Considering the ambiguous role of autonomy and in addition to its moderating effect, I expect it to be related to boundary control (H5a) and to integrative behavior (H6a). Whether it will increase or decrease them remains unclear (See complete hypotheses model in Figures 1 and 2 above).

Method

Design and Procedure

A quantitative cross-sectional design was chosen to conduct the following study. Workers were contacted through their private networks. The survey was distributed as a link via social media accounts such as WhatsApp, Facebook, and LinkedIn. As an incentive for participation, workers could take part in a raffle to win one out of four 20€ Amazon vouchers. When clicking on the link participants were directed to an online survey tool (SoSci) and could start the survey after signing their informed consent (including the aim of the research). Questions about demographics, such as age, gender, country of residence, type of contract, number of children, working place (and its relation to the current health crisis), and working hours were assessed. Additionally, workers were asked to indicate their

email address in order to participate in the lottery and for receiving an abstract of the results if interested but their email addresses were never linked to their responses. Next, participants filled out various items about Self-Leadership, Boundary Management, and Autonomy. After the final item, a question in regard to their attention throughout the completion of the survey and an option for participants to leave comments about the study were included. Finally, workers were directed to the debriefing sheet that included contact details of the researcher.

Participants

Participants were workers (part-time or fulltime) that had experienced working from home in the past last month for at least 2 days per week and with a minimum of 20 hours contract per week in line with prior studies (Beauregard, et. al., 2019; Harker & MacDonnell, 2012; Müller & Niessen, 2019). Initially, data of 203 workers that concluded the survey was collected (68% 139 female, 32% 64 male). However, participants were not included in the analysis as 23 participants worked less than 20 hours a week (considering only work week), 11 worked from home less than 2 days a week and 1 person chose not to answer that question. Thus, the final dataset contained 168 workers (69% 116 female, 31% 52 male). The average age was $M_{age} = 32.61$ SD: 11.19 considering an age range of 20 to 79 years old. In regard to the countries where participants lived in when the study was conducted, 77.8% lived in Mexico, 3.1% in Sweden, 3.7% in England, 3.1% in the United States, 2.5% in Germany, and 9.8% in other countries. Participants had mostly a full-time contract 118 (70.2%), following 22 (13.1%) part-time, 8 (4.8%) fixed-term, 7 (4.2%) zero-hour, and 13 (7.7%) other type of contract. On average, participants worked 41.25 hours (SD = 11.21) per week and 5 days (SD = 5.77) from home per week and, the average of working from home experience prior to the current health crisis was $M = 2.29$ (SD = 1.33) considering a 5-point Likert-scale (being 1=never to 5 = always).

Furthermore, from the overall sample, 81% of the participants were working from home only as a consequence of the current health crisis (SARS-CoV-2) while 19% were not. Most participants were working at home 89.3% while 0.7% were working in another place than home, an example of these other places in line with the comments is “at dad’s home”. Regarding the experience of working from home before the health crisis (SARS-

CoV-2), only 8.3% reported having ‘always’ worked from home. Lastly, most of the participants did not have children (80%) while 11.3% had one child, and 8.7% had two or more children.

Instruments

Self-Leadership

The Abbreviated Self-Leadership Questionnaire-ASLQ by Houghton, Dawley, and DiLiello (2012) was used to measure self-leadership. The scale is an abbreviated version of the validated 35-item scale Revised Self Leadership Questionnaire, RSLQ revised by Houghton and Neck (2002). It is a self-reported 9-item scale ($\alpha = .71$) where respondents are asked to indicate the level of agreement on how they perceive their own self-leadership measured on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). One sample item is “I establish specific goals for my own performance”.

Boundary Management

Three items of the 17-item work-life indicator scale by Kossek et. al. (2012) conform the boundary control sub-scale. These items have been previously used in the literature (Palm, et. al., 2019), thus, the items were chosen to measure perceived boundary control $\alpha = 0.87$. Respondents are asked to indicate the level of agreement on how they perceive their boundary management behaviors. An example item is “I control whether I combine my work and personal life activities throughout the day”.

To assess integrative behavior, one item of the work interrupting nonwork and one item from the nonwork interrupting work behaviors sub-scales from the work-life indicator developed by Kossek et. al. (2012) were used. These items were chosen based on its content given that they indicated the actual behavior of blending both domains as framed in here and to avoid participant fatigue given that each sub-scale has 5 items. An example item is “When I work from home, I handle personal or family responsibilities during work”; $\alpha = .62$. Respondents were asked to indicate their level of agreement on how they perceive their boundary management behaviors. It is a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree).

Autonomy

Nine items from the Work Design Questionnaire ($\alpha = .93$), developed by Morgeson and Humphrey (2006) were used. The original questionnaire is the Work Design Questionnaire and it contains 74 items addressing many job-related elements from which those related with autonomy were selected. These items were used on previous research by Müller and Niessen (2019) that also measured the concept of autonomy as defined. The respondents were asked to indicate their level of agreement on how they perceive their own autonomy at work on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). One sample item is “The job allows me to decide on the order in which things are done on the job”.

Data analysis

To analyze the data in this study, descriptive statistics and correlations were conducted. For hypotheses testing, linear and multiple regression and moderation analyses were computed with the statistical software, R. An alpha value of $p < .05$ was considered as cut-off score to determine significant results. An adjusted R² was reported as it adjusts for the number of predictors added to the model leading to more precise comparisons across models.

In regard to regression analyses, assumptions, namely, normality, linearity, homoscedasticity, and multicollinearity were tested (see Table 10 in Appendix). All assumptions except Normality were met. Normality was not met for 7 out of 8 regression models before and after excluding outliers calculated with Cook’s distance (cut-off value of $(4/n)$) and testing with data transformation. Nevertheless, the dataset did not present a pronounced skew as shown in Figure 7. Interaction effect variables were centered to reduce multicollinearity and simplify the interpretation of moderation effects.

Results

Means, standard deviations and correlations between main variables can be seen in Table 1. To provide the reader with an overview, main results showed a significant

Table 1.*Means, Standard deviations, and Intercorrelations.*

	<i>M</i>	<i>SD</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Age	32.6	11.19								
(2) Gender	—	—	—	—						
(3) Weekly working hours	41.15	11.21	-.60	—						
(4) Number of Children	1.29	0.62	.74*	—	-.38					
(5) Experience WFH	2.29	1.33	.36	—	-.33	.74*				
(6) Self-Leadership	3.81	0.50	-.31	—	.05	-.69	-.57			
(7) Boundary Control	3.56	0.98	.26	—	-.64	-.10	-.05	.67		
(8) Integrative Behavior	2.75	0.69	-.33	—	.76*	.02	.05	-.57	-.93***	
(9) Autonomy	3.89	0.74	.24	—	-.64	.02	.26	.55	.93***	-.86**

Note. $N = 168$. Cronbach's alphas are displayed on the diagonal. * $p < .05$; ** $p < .01$; *** $p < .001$. Gender was coded as 1= Female, 2= Male 3 =Other, 4= Prefer not to say.

association between self-leadership and boundary control but not with integrative behavior. Furthermore, a negative significant association was found between boundary control and integrative behavior, and lastly, autonomy did not have any moderating effect of self-leadership with boundary control nor with integrative behavior, however, it was significantly associated with boundary control, but not with integrative behavior.

For hypotheses testing, regression models including all variables were conducted. Most relevant outcomes are presented in the following Tables 2, 3, 4 and 5 below. Furthermore, figures below 4, 5 and 6 illustrate overall results containing coefficients for each hypothesis. In addition, exploratory results and moderation analyses are displayed throughout Tables 6 to 9 in the appendix.

Hypotheses Testing

H1: Self-leadership and Boundary Control

In line with hypothesis 1, self-leadership showed a positive significant relation to boundary control as shown in Table 2 ($b = .57, t(3.99), p < .001$). With partial consistency, the two factors behavior awareness and volition ($b = .26, t(2.31), p < .05$) and constructive cognition ($b = .30, t(2.34), p < .05$) were both significantly related to boundary control, while the factor task motivation was not ($b = .07, t(0.73), p = .46$) (See model in Figure 4). In addition and for exploratory purposes, self-leadership factors were examined further separately and indicated that all of them, behavior awareness and volition ($b = .36, t(3.37), p < .001$), constructive cognition ($b = .41, t(3.9), p = .001$) and task motivation ($b = .24, t(2.45), p < .05$) had a significant relation to boundary control when tested individually (See in Table 6 in the Appendix).

Figure 4

Self-leadership, Boundary Control and Autonomy

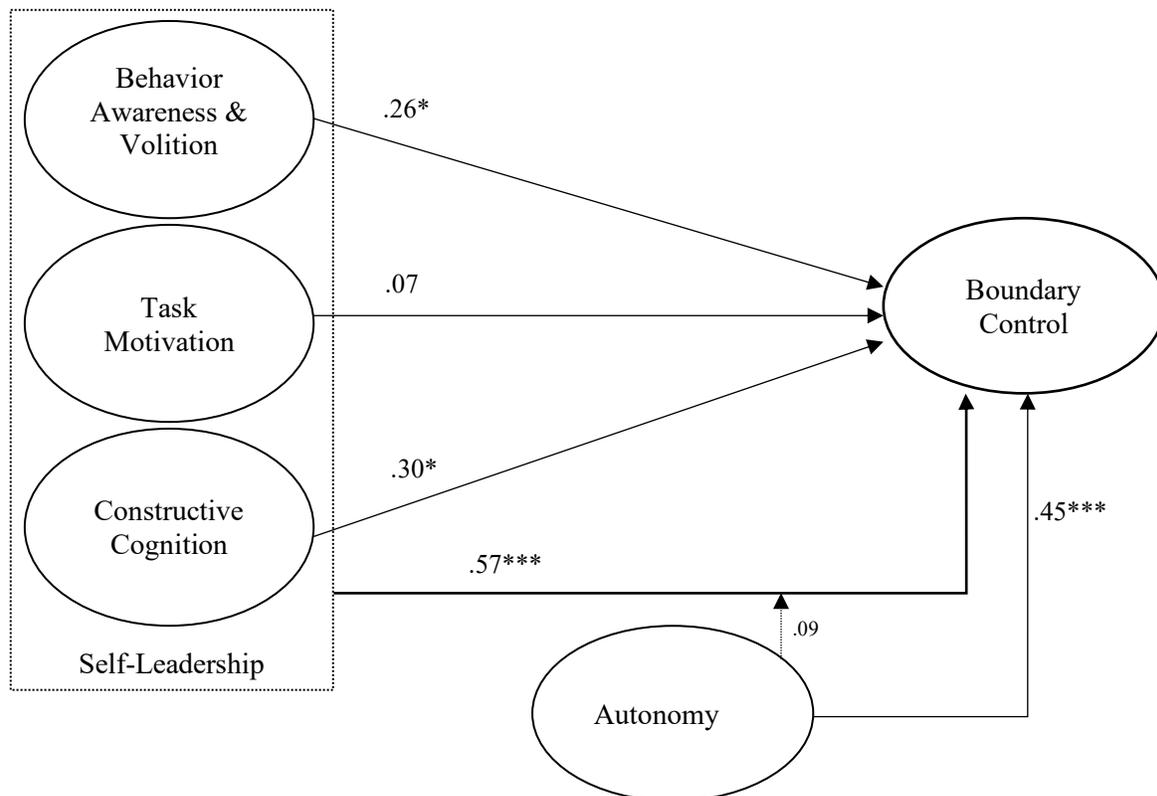


Table 2*Regression Coefficients Hypothesis Testing, H1. Self-leadership and Boundary Control*

<i>Predictors</i>	<i>b</i>	<i>95% CI</i>	<i>Std. beta</i>	<i>t</i>	<i>p-value</i>
		<i>(lb – ub)</i>			
H1					
(Constant)	1.37	.28 – 2.47	0.5	2.48	<.001
Self- Leadership	0.57	0.29 – 0.86	.14	3.99	<.001
H1a,b,c					
(Constant)	1.02	-0.13 – 2.18	.58	1.74	<.01
Behavior Awareness & V	0.26	0.04 – 0.49	.11	2.31	<.05
Task Motivation	0.07	-0.13 – 0.28	.10	0.73	.46
Constructive Cognition	0.30	0.04 – 0.56	.13	2.34	<.05

Note. Model H1: $R^2_{adj} = 0.08$, Model 1a,b,c= .08.

H2, 3 and 4: Self-leadership, Boundary Control, and Integrative Behavior

Hypothesis 2 was not supported. As shown in Table 3, self-leadership was not significantly related to integrative behavior ($b = .04$, $t(.41)$, $p = .67$). Consistently, none of the three factors, behavior awareness and volition ($b = .09$, $t(1.06)$, $p = .29$), task motivation ($b = -.04$, $t(-0.52)$, $p = .59$) nor constructive cognition ($b = -.001$, $t(.008)$, $p = .99$) were significantly related to integrative behavior (See model in Figure 5). Exploratory models showed integrative behavior is not significantly related to any of the factors, behavior awareness and volition ($b = .07$, $t(.94)$, $p = .34$), task motivation ($b = -.12$, $t(-0.16)$, $p = .86$) nor constructive cognition ($b = .008$, $t(.08)$, $p = .93$) when tested separately (see models in Appendix, Table 7).

However, boundary control showed a significant negative relation to integrative behavior ($b = -0.24$, $t(-4.81)$, $p < .001$), in support to hypothesis 3. This relation was even stronger when adding self-leadership to the model in support with hypothesis 4 ($b = 0.20$, $t(1.97)$, $p < .05$) as displayed in Table 3 (See model in Figure 6).

Figure 5

Self-leadership, Integrative Behavior and Autonomy

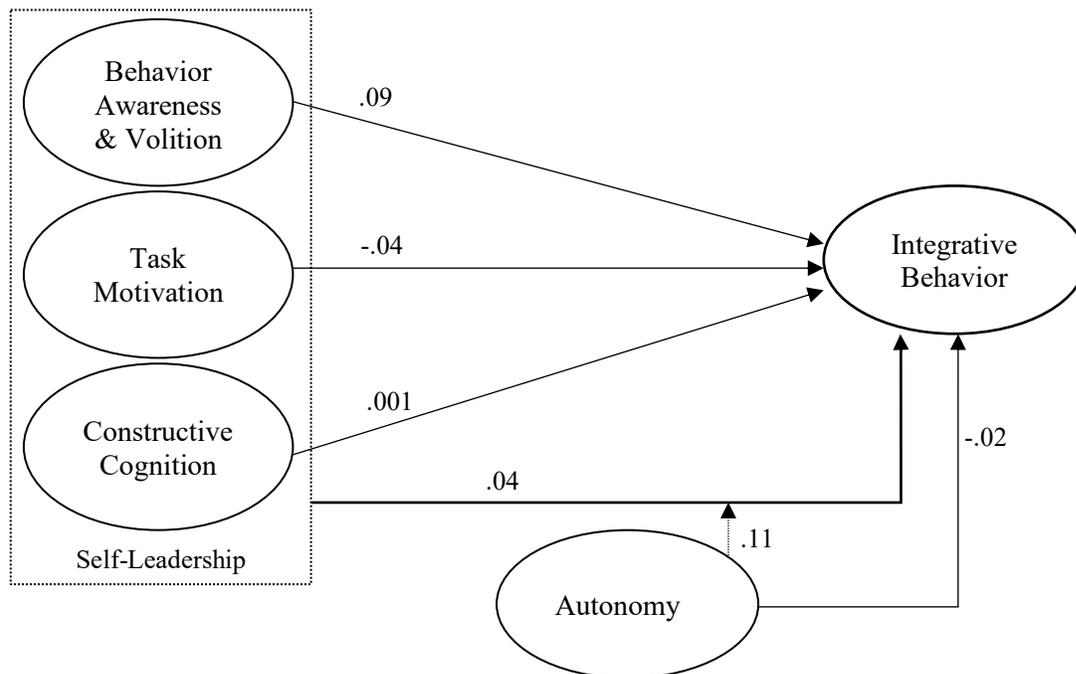


Figure 6

Boundary Control, Self-leadership and Integrative Behavior

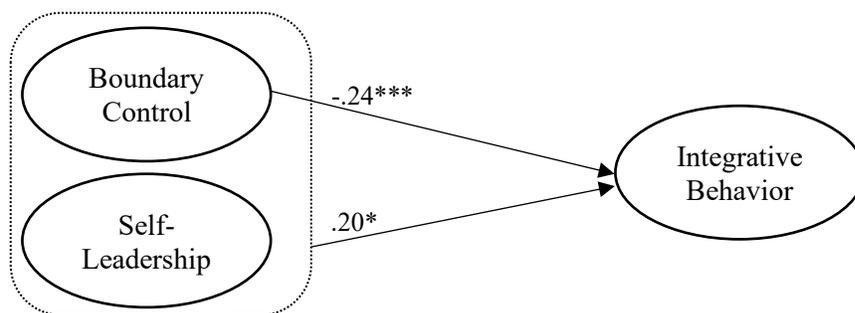


Table 3*Regression Coefficients Hypothesis Testing, H2, H3, H4. Integrative Behavior Predictors*

<i>Predictors</i>	<i>b</i>	<i>95% CI</i> <i>(lb – ub)</i>	<i>Std. beta</i>	<i>t</i>	<i>p-value</i>
H2					
(Constant)	2.58	1.75 – 3.40	0	6.28	<.001
Self- Leadership	0.04	-0.16 – 0.25	.10	.41	.67
H2a,b,c					
(Constant)	2.54	1.68 – 3.41	.44	5.79	<.001
Behavior Awareness & V	0.09	-.07 – 0.26	.08	1.06	.29
Task Motivation	-0.04	-0.20 – 0.11	.08	-0.52	.59
Constructive Cognition	-.001	-0.19 – 0.19	.09	-.008	.99
H3					
(Constant)	3.64	3.26 – 4.02	0.19	19.08	<.001
Boundary Control	-0.24	-0.35 – -0.14	.05	-4.81	<.001
H4					
(Constant)	2.97	2.20 – 3.74	0.39	7.63	<.001
Boundary control	-0.28	-0.38 – -0.17	.05	-5.22	<.001
Self- leadership	0.20	0.00 – 0.41	.10	1.97	<.05

Note. Model H2: $R^2_{adj} = -0.01$, Model H2a,b,c: $R^2_{adj} = -0.042$. Model H3: $R^2_{adj} = 0.11$, Model H4: $R^2_{adj} = 0.13$.

H5 and H6: the role of Autonomy

In partial support to hypothesis 5, autonomy showed a significant relation to boundary control ($b=.45$, $t(4.74)$, $p < .001$). this was not the case for hypothesis 6, in which autonomy showed not to be related to integrative behavior ($b= -0.02$, $t(-0.31)$, $p = .75$) as shown in Table 4. Regarding moderation effect, autonomy did not have a moderating effect between self-leadership and boundary control ($b=.09$, $t(.64)$, $p .52$, $CI = -0.20 - 0.39$) nor had a moderating effect between self-leadership and integrative behavior ($b= .11$, $t(.95)$, $p = .34$, $CI = -0.11 - 0.34$) as displayed in Table 8 in the Appendix (See models in Figures 4 and 5).

Table 4.

Regression Coefficients Hypothesis Testing, H5a and 6a, The role of Autonomy.

	<i>b</i>	<i>95% CI</i> <i>(lb – ub)</i>	<i>Std.</i> <i>beta</i>	<i>t</i>	<i>p-value</i>
Boundary Control					
(Constant)	3.56	3.42 – 3.7	0	49.96	<.001
Autonomy	.45	0.26 – 0.64	.09	4.74	<.001
Integrative Behavior					
(Constant)	2.75	2.65 – 2.86	0	51.05	<.001
Autonomy	-0.02	-0.16 – 0.12	.07	-0.31	.75

Note. Boundary Control Model $R^2_{adj}=0.11$; Integrative Behavior Model $R^2_{adj} = -0.005$.

Discussion

This study aims to deepen the understanding of boundary management when working from home from a normative perspective and focuses on the individual rather than the contextual job condition or environment. Specifically, self-leadership is investigated as a personal skill that could predict boundary control and integrative behavior. Furthermore, autonomy is also explored given its relevance due to the unclear role it has played in relation to these concepts according to the literature.

Main results

As expected, results showed a positive strong association between self-leadership and, two of its factors (Behavior Awareness and Volition, and Constructive Cognition), with boundary control. However, the factor Task Motivation had a rather low non-significant effect. While this is contrary with the hypothesis stated, it is not entirely surprising. One possible explanation is that, in contrast with the two other factors that encompass structuring and delimitating the work, this factor entails fostering that the individuals keep operating and *motivating* themselves to continue performing (Houghton, et.al., 2012), therefore, to have a perception of control of the boundary would require to become an aware of the “possibility to realize a certain behavior” (Palm, et. al, 2019, p.292) which could interrupt the individual to perform since she or he would need to be constantly reminded of the other domain demands. Contrary to this result, an exploratory model showed Task Motivation associated with boundary control. This discrepancy could be explained, due to statistical reasons considering that Task Motivation was not competing with other predictors when it showed a significant association. This is yet to be clarified.

Regarding integrative behavior, self-leadership has shown to be an important predictor of one of its most recurrent outcomes, i.e., work-home and home-work conflict (St-Onge, et. al., 2010). This could be explained as self-leadership entailing strategies that help the individual to be motivated and structured, and therefore, to establish goals and have behaviors that allow to respond to each domain demands (work and home) and, achieve a better balance leading to less conflict, however, in this study, self-leadership was not related to integrative behavior. One possible reason is because despite of self-leadership

being a skill that entails structure and goal-oriented behaviors, it is a self-influence process to enhance behaviors not to restrict them like self-discipline for example. While self-discipline includes the “correction or regulation of oneself” (Merriam Webster, n.d.), which could comprise *correction* of integrative behaviors, self-leadership strives to promote performance (Neck & Houghton, 2006), and this could be, regardless of the boundaries. Another possible explanation is regarding methodological issues, two items were used to measure integrative behavior, they were selected from two subscales with 5 items each addressing integrative behaviors. This measure had the lowest alpha from all the instruments which could have led to internal reliability issues. Nonetheless, I chose these two out of 10 items due to its content and to avoid fatigue and attrition.

Moreover, other authors have found that other elements, such as boundary control, are involved in explaining integrative behavior (Palm et. al., 2019). It could be explained that indeed the individual performs some behaviors that allow her or him to respond to the domain’s demands, but particularly, the behavior of integrating the domains is not fully explained by self-leadership, but instead by other personal skills and psychological traits like boundary control. This explanation is consistent with the outcomes in the present study that showed a negative significant association between boundary control and integrative behavior, and that it is stronger when adding self-leadership. Even when self-leadership by its own is not significantly related to integrative behavior it could be explained as self-leadership by its own does not entail a strategy per se involving control over the boundaries, thus, when including boundary control, the strategies entailed within self-leadership could serve to not only enact behaviors to perform but also to enact behaviors in line with this control of the boundaries. Interestingly, the relation between integrative behavior and self-leadership is positive while it is negative with boundary control. This is consistent with the reasoning of self-leadership being a behavior promoter while boundary control could play a behavior regulative or directing role.

In addition, the present study was carried out in the context of working from home without the possibility to change working location, thus, without the physical boundaries nor guidance to separate the domains it could have happened that this lack of physical boundaries restricted the individuals to separate the domains despite of self-leading themselves to do it because simply they did not have the space to do so, this is consistent

with literature that acknowledge this (Beauregard, et. al., 2019) and that states time boundaries are dependent on physical ones (Mustafa & Gold, 2013).

Furthermore, this study focuses on personal skills (self-leadership) and psychological traits (boundary control), however, job conditions could play a relevant role regarding integrative behavior as well. This is consistent with the finding in which working hours per week is positively correlated with integrative behavior. This could be explained as more hours an individual requires to work, less time is available to attend home domain demands, thus, the individual blends the domains by bringing work-related tasks to the home domain. However, it is yet to be studied the directionality of this relation, meaning that the individual could end up working longer hours because of integrating the domains and not the opposite. Nonetheless, this was not the focus of the present study.

Another element that showed to play a role in this matter is autonomy. It revealed to be negatively correlated with integrative behavior but not to be a predictor of it at the regression model. One possible explanation for this is simply because correlation and regression are different tests while both can quantify the direction and strength between variables, correlation cannot predict nor show cause nor predict. Therefore, while the more autonomy an individual has is associated with less integrative behaviors, it doesn't mean that these integrative behaviors are predicted by autonomy. Moreover, autonomy showed a significant association to boundary control, which was a predictor of integrative behavior, but did not have a moderating effect between self-leadership and boundary management as operationalized in the present study (boundary control nor integrative behavior). This is not surprising given that the role of autonomy has been studied in the past as a moderator (Müller & Niessen, 2019), but was not consistent regarding to outcome variables when working from home (Jostell & Hemlin, 2018; Kossek, et. al., 2006; Wang, et. al., 2020). Also, it showed to be a moderator when teleworkers could change from working location, however, there was a limitation to do so the moment the study was conducted, therefore, the individual's autonomy could have been limited because, despite of the freedom that autonomy entails, workers could have been restricted in their job methods, schedules, and procedures due to this limitation. Nonetheless, autonomy showed to be relevant in the matter consistently with the literature that argues that greater freedom leads to more possibilities to experience boundary control (Kossek et. al., 2006).

Limitations

Given certain elements, for example, the nature of cross-sectional studies or the time in which it was conducted, certain limitations need to be acknowledged. First, in this study the data collection was done in a specific point of time, which does not provide a picture of the evolution in contrast with longitudinal studies. However, feasibility was increased given that instruments were required to be filled out only once, eliminating fatigue and attrition. Little research has been conducted with a longitudinal design regarding these topics, one example of this is the study of Brösemyr and Haskovic (2017) in which the authors point out different outcomes of teleworking among different individual and throughout the different days they teleworked.

Second, even though online surveys allow to reach out to larger samples, there exists little control over the conditions in which participants reply. Nevertheless, participants were asked about how focused they were during the survey and 90% responded being completely with one or no interruptions. A third limitation comes next to this one since not only the participant's responses conditions were unknown but also the participants themselves. Meaning that anyone who had access to the link could have answered the questionnaire limiting the representativeness of the sample. However, different demographic questions and specificities regarding the inclusion criteria (e.g., working hours or type of contract) were asked to minimize this issue.

Fourth, the survey is answered through self-report which entails methodological issues because of possible biases. However, it has been argued that the type of variables that were explored, attitudes and personal traits, are hardly observed in other ways (Palm, et. al. 2019). In addition, the sample could coin a more specific target and be extended and duplicated at a different time. However, an adequate sample size was confirmed by G*Power calculations (Faul, et. al., 2009), power of .95, $n = 160$.

Finally, the time in which the study is conducted is an extraordinary one given that the world is facing a global pandemic. This could entail generalizability issues because it might be that working conditions will change again once the health crisis is under control. It has been mentioned however, that it is very likely that the working from home practice is importantly likely to continue (Popovici & Lavinia, 2020, Wang, et. al. 2020).

Overall, like in any other study, limitations exist and are here acknowledged, however, this study, being the first one of its kind, addresses a relevant matter from which many employers and employees can benefit from, boundary management when working from home and, provides a theoretical and practical contribution by deepening the understanding of how home workers manage the boundaries through self-leadership and autonomy.

Practical Implications and Future Research

The insights of this study can benefit workers and employers in various ways. HR departments can include further training regarding personal skills, like self-leadership, that are relevant in the context of working from home. Employers can gain insights into specific advantages and disadvantages that home workers might experience when working from home and provide resources to them. Further, strategies can emerge from this study for workers to dealing with the boundaries between work and home and, for HR to have a guideline of a good practice when planning full remote or hybrid working schemes.

While this study addresses elements from which employers and employees can benefit from practically, self-leadership and autonomy are only some of the elements that are involved in explaining integrative behavior and boundary control, therefore, I encourage other researchers to investigate in the future other different skills, such as organization given that the different strategies previously used by former teleworkers (Basile & Beauregard, 2016) involved the allocation of resources into different spaces and time to attend the domain's demands. Further, despite of this study focusing on other elements than contextual ones or job conditions, working hours are yet to be further investigated since it showed to play a role in this sample.

Finally, autonomy was investigated to understand its role, despite of being importantly directly correlated to integrative behavior and boundary control and showing to be a predictor of boundary control, it did not have a moderation effect, thus, I suggest further research on autonomy is conducted and during a non-health crisis time so autonomy is studied while workers experience the freedom of changing working location to further clarify the role of autonomy.

Conclusion

This study raises the importance of addressing boundary management not only focusing on contextual job-related elements but also personal skills in the context of working from home by investigating self-leadership. In addition, autonomy showed to be involved since it is directly related to boundary control.

By understanding skills that antecede how individual manage the boundaries, employers and employees can benefit from strengthening them, e.g., self-leadership. This can contribute to positive outcomes proceeding from a health-oriented boundary management and have an impact on the transition of the working from home practices which, in line with the literature presented, is likely to stay. Furthermore, providing these insights on boundary management from a scientific perspective, opens the door to address a well-studied theoretical skill, i.e., self-leadership, at an unprecedented scenario where, more than ever, people will benefit from strengthening skills and reach positive outcomes when working from home.

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Appendix

Table 6

Regression Coefficients Hypothesis Testing, H1. Boundary Control

	<i>b</i>	<i>95% CI</i> <i>(lb – ub)</i>	<i>Std. beta</i>	<i>t</i>	<i>p-value</i>
Self-leadership factors separately					
(Constant)	2.12	1.27 – 2.98	0.43	4.9	<.001
Behavior Awareness & V	0.36	0.15 – 0.57	.10	3.37	<.001
(Constant)	2.7	1.98 – 3.41	.36	7.46	<.001
Task Motivation	0.24	.04 – 0.44	.09	2.45	<.05
(Constant)	1.93	0.95 – 2.91	0.49	3.9	<.001
Constructive Cognition	0.41	0.16 – 0.66	.12	3.32	.001

Note. Model Behavior Awareness: $R^2_{adj}=0.05$, Model Task Motivation: $R^2_{adj}=0.02$, Model Constructive Cognition: $R^2_{adj}=0.05$.

Table 7*Regression Coefficients Hypothesis Testing, H2. Integrative Behavior.*

	<i>b</i>	<i>95% CI</i> <i>(lb – ub)</i>	<i>Std. beta</i>	<i>t</i>	<i>p-value</i>
Self-leadership factors separately					
(Constant)	2.46	1.83 – 3.09	.31	7.75	<.001
Behavior Awareness & V	0.07	-0.08 – 0.23	.07	.94	0.34
(Constant)	2.80	2.28 – 3.31	.26	10.71	<.001
Task Motivation	-0.12	-0.15 – 0.13	.07	-0.16	.86
(Constant)	2.72	2.00 – 3.44	.36	7.49	<.001
Constructive Cognition	0.00	-0.17 – 0.18	.09	.08	.99

Note. Model Behavior Awareness: $-.005 R^2_{adj} = 0.19$, Model Task Motivation: $-.001 R^2_{adj} = 0.05$, Model Constructive Cognition: $-.006 R^2_{adj} = 0.01$.

Table 8.*Regression Coefficients Hypothesis Testing, 5 and 6, Moderation Effect of Autonomy*

	<i>b</i>	<i>95% CI</i> <i>(lb – ub)</i>	<i>Std.</i> <i>beta</i>	<i>t</i>	<i>p-value</i>
Boundary Control					
(Constant)	3.56	3.41 – 3.69	0	49.39	<.001
Self-Leadership	.40	.11 – .69	.14	2.75	<.01
Autonomy	0.39	0.18 – 0.59	.10	3.82	<.001
Self-Leadership *Autonomy	.09	-0.20 – 0.39	.15	.64	.52
Integrative Behavior					
(Constant)	2.74	2.63 – 2.85	0	49.32	<.001
Self- Leadership	0.04	-0.17 – 0.27	.11	0.42	.67
Autonomy	-0.01	-0.17 – 0.14	.07	-0.20	.84
Self-Leadership*Autonomy	0.11	-0.11 – 0.34	0.11	0.95	.34

Note. Model Boundary Control $R^2_{adj}=0.14$; Model Integrative Behavior $R^2_{adj} = -.10$.

Table 9.*Regression Coefficients Exploratory Model. Self-Leadership and Autonomy*

	<i>b</i>	<i>95% CI</i> <i>(lb – ub)</i>	<i>Std. beta</i>	<i>t</i>	<i>p-value</i>
<hr/>					
Boundary Control					
(Constant)	3.56	3.42 – 3.70	.07	51.01	<.001
Autonomy	0.37	0.18 – 0.56	.09	3.79	<.001
Self-leadership	0.41	0.12 – 0.69	.14	2.84	<.01

Note. Exploratory Model: $R^2_{adj} = 0.15$.

Table 10.*Assumption checks for all regression models.*

	<i>Normality</i>	<i>Linearity</i>	<i>Homoscedasticity</i>	<i>Multicollinearity</i>
	<i>Shapiro Wilks test</i>	<i>Tukey's test</i>	<i>Breusch-Pagan test</i>	<i>VIF score > 5</i>
Model H1	W = 0.96 p = .0004	HSD = -.70 p = .48	$\chi^2(1) = .53$ p = .46	—
Model 1abc	W = 0.96 p = .0008	HSD = -.73 p = .46	$\chi^2(1) = 4.5$ p = .20	—
Model H2	W = 0.93 p = .0001	HSD = 1.63 p = .10	$\chi^2(1) = 03.$ p = .85	—
Model 2abc	W = 0.95. p = .0001	HSD = .40 p = .68	$\chi^2(1) = 5.3$ p = .14	—
Model H3	W = 0.98 p = .04	HSD = 1.69 p = .08	$\chi^2(1) = 2.24$ p = .13	—
Model H4	W = 0.98 p = .20	HSD = 1.9 p = .056	$\chi^2(1) = 1.88$ p = .39	—
Model H5 (centered)	W = 0.96 p = .0004	HSD = .92 p = .35	$\chi^2(3) = 4.37$ p = .22	1.10 – 1.16
Model H6 (centered)	W = 0.94 p = .0000	HSD = -.99 p = .32	$\chi^2(3) = 1.86$ p = .60	1.10 – 1.69

Note. N = 168.

Figure 7

Histograms for Normality Assumption of models for H1, H2, H3

