FACULTY OF PSYCHOLOGY AND EDUCATIONAL SCIENCES

DO BLUE-COLLAR AND WHITE-COLLAR WORKERS BENEFIT FROM THE SAME ABC-RECIPE AND NEED-SUPPORTIVE LEADERSHIP?

A COMPARATIVE STUDY OF BASIC PSYCHOLOGICAL NEEDS

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Abstract

With the aim to contribute to the literature of the Dual Process Model and to five into the debate about the universality claim of the psychological needs, the current research aimed to investigate a number of questions in a work-related context. In doing this, we firstly examined associations between types of perceived leadership to a set of work-related outcomes (i.e., autonomous work motivation, vitality, job satisfaction, turn-over intention, in-role behaviour, organizational citizenship behaviour (OCB)). Herein, we assessed to what extent experiences of need satisfaction and need frustration mediate these relationships. At last, this study observed room for decision-making and function as possible moderators on the relationship between leadership style and need experience. The study had a cross-sectional design with a sample of 204 participants (M_{age} = 45; 55.3 were male), of which 55.7% blue-collar and 44.3% white-collar workers.

Significant differences between both groups were found, with blue-collars experiencing more need-thwarting leadership, having less room for decision-making, being less autonomous motivated and having lower scores on OCB, in comparison with white-collars. Also, a set of linear regression analyses demonstrated a significant mediating role of need frustration for the associations between need-supportive leadership and vitality, turn-over intention and in-role behaviour, with a partial mediating role in prediction of the outcomes autonomous work motivation and job satisfaction. Also, need frustration mediated the associations between need-thwarting leadership and vitality, job satisfaction, turn-over intention and in-role behaviour. Contrary to our expectations, the significant associations between need-supportive leadership and all study outcomes were not mediated by need satisfaction. Also, no moderating effects were found of both room for decision-making and functions.

The current findings show evidence for the universality nature of the basic needs. More specifically, a need-supportive context or need-thwarting context should predict, respectively, the thriving and ill-being of *all* employees, no matter if you are a blue-collar or white collar or you have more or less room for decision-making at work. This research provides insight into the mechanism behind need fulfilment of employees with different functions. Based on these findings, suggestions about practical implementations and suggestions for future research were made.

Keywords: Self-Determination Theory, motivation, blue-collar workers, room for decision-making

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Manifold studies grounded in Self-Determination Theory (SDT; Ryan & Deci, 1985; 2017), a well-validated theory on human motivation, have shown that the satisfaction of the need for autonomy has benefits on different domains. Notably, within the SDT, 'Autonomy' is a much broader concept than merely being independent. Specifically, the need for autonomy refers to the need for experiencing a sense of volition and psychological freedom. In addition to the need for autonomy, the fulfilment of the need for relatedness or Belongingness (i.e., feeling loved and cared for) and Competence (i.e., feeling effective) equally plays a crucial role in promoting sustainable motivation and growth in employees. In contrast, the frustration of these basic needs is likely to damage well-being.

These ABC experienced psychological needs (i.e., Autonomy, Belongingness, Competence) are rooted in the extent to which the context supports or frustrates them. A need-supportive context (e.g., autonomy-supportive and structuring leadership style) will lead to positive outcomes via need satisfaction experiences. This is called the 'bright' pathway. Also, there is a 'dark' pathway which starts from a need-thwarting context (e.g., controlling and chaotic leadership style) to negative outcomes via need frustration experiences. Although substantial cross-sectional (e.g., Bartholomew, et al., 2011; De Clerck, et al., 2019; Haerens, et al., 2015) and longitudinal research (e.g., Bartholomew, et al., 2018; Jang, et al., 2016; Patall, et al., 2018) has evidenced this dual process model in the context of education and sport, far less studies have examined this model in the domain of work. Therefore, the current study aims to fill this void by investigating whether we can replicate this dual process model among employees.

SDT states that these three basic needs are universal, such that all individuals possess these needs, regardless of their culture or educational background (Chirkov & Ryan, 2001). "Regardless of our many differences, we all have the same three psychological needs. What differs is the strategy for fulfilling these needs", a well-known quote by the American psychologist Marshall Rosenberg (1970). Indeed, claiming universality of needs does not imply that every person, especially within every domain or task, would equally benefit in need-satisfying situations or suffer in case of from need-frustrating experiences (Soenens, et al., 2015). The universality claim is still questioned both by researchers and practitioners, and the present research aims to further dive into this debate. More specifically, employees may differentially benefit or suffer from the leadership style of their supervisor depending on their specific function (e.g., blue-collar or white-collar) and room for decision-making, which will in turn influence work-related and non-related outcomes.

In this regard, statements that often arise from the field are the stereotypes about the work context of blue-collar workers, such as the monotonous nature of their job, the lack of voice, and the fact that they just have to follow orders from their leader. In sum, they just do what is expected from them from the beginning till the end of their workday. Additionally, regarding their work content, they just do boring and repetitive work. Even in some cases, their mobility is limited due to working at the same place all over again. Due to these thoughts, some people have a general conviction that blue-collar workers, by definition, experience little or no autonomy in their job because of their work content and work context. These beliefs stem from the assumption that autonomy can be equated with or even is limited to the experience of independence. Therefore, the question arises whether blue-collar workers can experience a sense of volition in their job, even though they are working in restricted and routine work environments, where there is less room for initiative. More specifically, it is about whether blue-collars with a repetitive work context experience less beneficial effects of a need supportive environment and experience less disadvantage from a need thwarting environment.

Literature Review

A trio of basic psychological needs

SDT states that the satisfaction of the psychological needs for autonomy, relatedness and competence is necessary for flourishing, growth and well-being across the lifespan and cross-culturally (e.g., Ryan & Deci, 2017). In contrast, the frustration of these three needs, which is felt during threatening experiences and will harm human well-being. Below, the three concepts are described into more detail and Figure 1 gives a visualisation of it.

Autonomy. The psychological need for autonomy involves a sense of choice and freedom. It entails the perception that behaviour in the activities one engages in is consistent with the inner interests and values (de Charms, 1968). Because of the experience of behaviour as choiceful and self-endorsed, one experiences a sense of integrity and authenticity when the need of autonomy is satisfied. On the other hand, autonomy frustration refers to the experience of not standing behind your own actions and having to act against the own will due to internal or external factors. When frustrated, one experiences a sense of pressure and often conflict, such as feeling pushed in an unwanted direction. Autonomy frustration is thus about the experience of behaviour as pressured and coerced (de Charms, 1968).

Notably, autonomy as specified in SDT does not equate to independence, but rather to the experience of volition and willingness. Such volitional functioning can characterize both independent behaviour and dependency on others for inputs and guidance (Soenens, et al.,

2018). That is, people might also experience autonomy satisfaction when they depend on others and even when they follow others' requests. For instance, employees might follow a request from their supervisor (and thus fail to be independent), but nonetheless act willingly because their supervisor provided them with a meaningful rationale for doing so (Soenens, et al., 2007). This is called voluntary dependence, indicating that employees choose by themselves to receive help from others. Here, they do not work alone or independent, yet they will experience satisfaction of their need for autonomy, as they have volitionally chosen themselves to rely on the advice of a colleague or supervisor. Secondly, some employees like to experiment or find out things on their own, which is named as voluntary independence. In contrast, there could also be frustration for the need of autonomy. This is applied in (1) forced independence; when an employee is pushed to complete his task on his/her own whereas in fact he/she would like to have more assistance and (2) forced dependence, when a leader expects that you seek his/her advice before making a personal decision.

Relatedness. The second need is relatedness, which involves the ability to develop meaningful relationships. It refers to the experience of intimacy and genuine connection with others (Ryan, 1995). The need for relatedness (e.g., Baumeister and Leary, 1995) is fulfilled when one feels connected with, significant to and cared for by others. It refers to the experience of mutual connection with important others, and experiences of warmth and bonding. There are 'horizontal relations', for example, when you feel a strong connection with colleagues. Teams can for instance strengthen relatedness by talking about their well-being before a meeting starts. Relatedness also extends to feelings of inclusion and harmony at the group level (Kelly, et al., 2008; Sheldon & Bettencourt, 2002). This can be done, for example, by organizing team-buildings, invest in separate rooms for having informal coffee breaks. Feelings of connectedness with the organization for which one works, are named as 'vertical relations'. Organizations can strengthen these feelings by focusing on cohesion values or having a similar vision and shared values.

In contrast, frustration of the need for relatedness refers to the experience of a lack of communion and close connection with others. Relatedness frustration comes with a sense of social alienation, exclusion, and loneliness or isolated feelings (Vansteenkiste, et al., 2020). For instance, when an employee does not get why he/she is not been invited for a (lunch)meeting when that person actually would have liked to attend. Or when someone does not feel some affiliation towards the organisation he or she is working in.

Competence. The need for competence involves feelings of mastery, attaining desired outcomes, and succeeding at challenging tasks. Competence (White, 1959) is satisfied when

one feels effective and thus has the resources and capabilities required to accomplish one's activities and goals. Competence satisfaction allows individuals to adapt to complex and changing environments (Deci & Ryan, 2000). It is also about the experience of mastery. When satisfied, one feels capable to engage in activities and one experiences opportunities for using and extending one's skills and expertise.

Frustration of the need for competence refers to the experience of feeling ineffective and unable to achieve desired outcomes. Even a sense of failure can appear. Competence frustration is likely to result in helplessness and a lack of motivation (Deci & Ryan, 2000). It could appear for example when a particular task is too easy or too complex for someone, but also when the expectations or goals are ambiguous or unclear.

The characteristics of the basic needs

Within SDT, five criteria are identified as being characteristic of the three basic psychological needs. Specifically, the needs for autonomy, competence and relatedness are said to be psychological, essential, inherent, distinct and universal.

Psychological. SDT focuses on needs that are *psychological* in nature. Just like human beings have physiological needs (such as hunger, sex, sleep), all individuals also have these three psychological needs for autonomy, competence and relatedness. However, we may not totally separate physiological and psychological needs. The development and maintenance of a healthy lifestyle is affected by ongoing psychological need satisfactions and frustrations (e.g., Ng, et al., 2012), with a healthy lifestyle feeding back into individuals' need-based experiences (Campbell, et al., 2018).

Essential. The three needs for autonomy, competence and relatedness are defined as the psychological nutriments that are *essential* to fostering adjustment, integrity, growth and wellness (Ryan, 1995). Need satisfaction has been found to predict adjustment (e.g., Van den Broeck, et al., 2016), to characterize satisfying life events (e.g., Sheldon, et al., 2010), to be critical to a sense of meaning in life (Gonzalez-Cutre, et al., 2017) and to contribute to harmonious passions (Vallerand, 2016). In contrast, frustration predicts lower happiness and multiple forms of maladjustment (Bartholomew, et al., 2011; Ryan, et al., 2016; Vansteenkiste & Ryan, 2013), such as problem behaviour, ill-being and psychopathology. All three needs are thus considered important for individuals' growth and well-being, in- and outside the workplace, an issue that we will elaborate on in the next section.

Inherent. Psychological needs have come to form an *inherent* part of individuals' functioning, which is based in our biological make-up (Di Domenico & Ryan, 2017; Reeve &

Lee, 2019). Rather than learned, SDT considers the basic psychological needs to be innate (i.e., present from birth), fundamental propensities, much like biological needs (Deci & Ryan, 2000). So, due to adaptive advantages, a basic need is part of our psychological nature and will play a role in our well-being till the end of our lives.

Distinct. Basic psychological needs need to be sufficiently *distinct* from other identified basic needs. Every need should be associated with a qualitatively different set of experiences and the basic needs may not be a by-product of another need. So, the emergence of a basic need is not contingent upon or derivative from the frustration of other needs. An illustration is the desire of power. This is not considered as a sperate need within the SDT because the emergence of the desire for power occurs here when one feels pushed in a certain direction. In other words, this refers to a compensation mechanism for the lack of autonomy (Martela, et al., 2019). Another example is the need for safety (Maslow, 1943), which has a physical and a psychological or interpretational component. This psychological component linked to physical security refers to the basic psychological needs, because the feeling of security does indeed have a positive effect on well-being. More specifically, this happens via the satisfaction or frustration of the basic psychological needs (Vansteenkiste, 2020).

Universal. There is also a *universal* nature of the basic needs. According to SDT, need satisfaction and need frustration should predict, respectively, the thriving and ill-being of *all* individuals. Need satisfaction is beneficial for people regardless of their demographic characteristics like age, nationality and gender (Henning, et al., 2019), personality (e.g., Mabbe, et al., 2016), or cultural background (e.g., Benita, et al., 2001).

The effects of need satisfaction versus need frustration

Multiple studies in the past have demonstrated that the satisfaction of the three basic needs offers benefits for employees' functioning, whereas its frustration is detrimental. Studies in which the three needs were examined separately showed that each of the three needs correlated positively with employees' optimal functioning (e.g., Lynch, et al., 2005). There have tended to be several types of effects, which are listed below: (1) motivational outcomes, (2) affective outcomes, (3) behavioural outcomes, and (4) social outcomes.

Motivational outcomes. Satisfaction of needs is associated with high quality motivation, while frustration of needs is predictive of low quality motivation and amotivation. In this literature, SDT's theoretical framework evolved from research on intrinsic and extrinsic motivations and expanded to be a well-validated theory that has been proven applicable in different domains. According to SDT, the type of autonomous motivation is prominent when

employees engage in an activity because they consider it personally valuable or intrinsically interesting (Deci & Ryan, 2000). They do it with a full sense of willingness, volition, and choice. It is contrasted with the type of controlled motivation, resulting from experiencing external (i.e., a bonus, supervisory approval) or internal (i.e., guilt, shame) contingencies to conduct a particular behaviour (Deci & Ryan, 2000). When motivation is controlled, it can decrease efforts of employees, produce short-term gains on targeted outcomes, and have negative spill-over effects on subsequent performance and work engagement (e.g., Jang et al. (2016).

Often, autonomously regulated activities are intrinsically motivated. When lacking autonomy, someone may engage in the activity to please others, get approval, avoid feelings of guilt, or other controlled forms of regulation (Haerens, et al., 2015; Markland & Tobin, 2010). Perhaps more relevant to the workplace, however, extrinsically motivated activities can, under the right circumstances, also be autonomously motivated (i.e., engaged with authenticity and vitality). When individuals understand the value and purpose of their jobs, receive supports, feel ownership and autonomy in carrying them out, and get clear feedback which will support the need of competence, they are likely to become more autonomously motivated and reliably perform better, learn better, and be better adjusted (Deci, et al., 2017)**.** In sum, the satisfaction of the needs for autonomy, relatedness, and competence is essential for the quality of motivation and work-related outcomes like the level of pleasure and engagement (Orsini, et al., 2016; Patall, et al., 2018; Skinner, et al., 2008).

Affective outcomes. In addition to benefits in terms of employees' quality of motivation, the satisfaction of the basic needs has also been found to be beneficial for their affective functioning. Tay and Diener (2011) reported that autonomy, competence, and relatedness each associated uniquely to well-being (e.g., positive affect). Several studies have shown that need satisfaction promotes psychological growth and healthy functioning (Ryan & Deci, 2017; Vansteenkiste & Ryan, 2013). For example, university students who have their basis psychological needs fulfilled, experience more well-being (Gillet, et al., 2019), while being less vulnerable for stress and poor sleep (Campbell, et al., 2018). Employees who report higher levels of need satisfaction tend to report higher levels of global well-being (Van den Broeck, et al., 2010), psychological adjustment (Baard, et al., 2004), and higher job satisfaction (Baard, et al., 2004; Gagne, et al., 2000), but also lower levels of burnout (Fernet, et al., 2013), which results in more enjoyment of their work and less job-uncertainty (Vander Elst, et al., 2012).

In contrast, need frustration is theorized to contribute to energy depletion, dysfunction, and illness and even relates to psychopathology (Ryan & Deci, 2017; Vansteenkiste & Ryan, 2013). Indeed, empirical work demonstrates that need frustration predicts various ill-being indicators, including depressive symptoms (Cordeiro, et al., 2016), negative affect (Bartholomew, et al., 2011), anxiety (Ng, et al., 2012) and stress (Campbell, et al., 2017; Weinstein & Ryan, 2011). These higher levels of stress which are correlated with need frustration will in turn predict dysfunctional pre-sleep cognitions that damage sleep patterns (Campbell, et al., 2017; Vansteenkiste, et al., 2018). According to the longitudinal study of Olafsen and colleagues (2017) in a sample of nurses, autonomy, competence, and relatedness frustration is associated with higher levels of work-related stress and somatic symptom burden, which in turn is associated with higher levels of emotional exhaustion.

Behavioural outcomes. The predictive role of the basic psychological needs has also been investigated in relation to behavioural outcomes, including indicators of engagement, performance, absenteeism and turn-over. Firstly, need satisfaction relates to engagement, whereas need-frustration relates to disengagement (Ryan & Deci, 2017; Vansteenkiste & Ryan, 2013). There are positive relations between need satisfaction and indicators of performance and productivity at work. The more people have their basic needs fulfilled at work, the better they will perform as indexed by self-reportage (Gagne and Deci, 2005; Van den Broeck, et al., 2008).

When people experience more job resources and challenge demands, and less hindrance demands than usual, their needs for competence and autonomy are more satisfied, which make them perform better. The satisfaction of the need for autonomy and the need for competence mediated the relationships between job resources, hindrance demands, and performance. (De Gieter, et al., 2017)

There is a positive relation between employees' need satisfaction and positive attitudes towards work; when their basic needs are satisfied, employees are better able to deal with changes and have less intentions to leave the organisation (Van den Broeck, et al., 2008). Frustration of the basic psychological needs for autonomy, competence, and relatedness is associated with more work-related stress and somatic symptom burden, which is in turn associated with more turnover intention and absenteeism. (Olafsen, et al., 2017).

In addition, when satisfaction for the three needs are felt, it is also more likely to deeply process learning material (e.g., Jang, et al., 2016; Vansteenkiste, et al., 2005).

Social outcomes. Finally, we discuss the effects of the needs on social outcomes, as the satisfaction and frustration of the basic needs appear to also relate to how one interacts

interpersonally. A study of Vermote and colleagues among secondary school teachers (2020) shows that the degree to which their basic needs are satisfied (or frustrated) at work is related to the way they interact with their students. Specifically, the more teachers have their basic needs fulfilled, the more they will act in need-supportive ways towards their students themselves. In contrast, experiences of need frustration are related to a more coercive way of dealing and interacting with others. Wörtler, Van Yperen and Barelds (2020) found that experiences of volition, mastery, and connection at work are conducive to employees' organizational citizenship behaviour. Additionally, helping others contributes to the perceived satisfaction of need and happiness in life. This indicates a relation in both directions.
Need satisfaction and need frustration are also associated with helping behaviour because SDT research shows how acts of helping others (Weinstein & Ryan, 2010), civic duty (Wray-Lake, et al., 2017), and giving (Martela & Ryan, 2016) fulfil the basic psychological needs and in turn results in greater happiness. Also, just highlighting relatedness increases engagement in prosocial activities. In an experimental study, where the researcher highlighted the need for relatedness, the participants who were in that relatedness manipulation task donated more money to charity than did participants given a neutral task. (Pavey & Sparks, 2011). Weinstein and Ryan (2010) showed that feeling pressured to engage in prosocial behaviour (i.e., one specific type of moral behaviour) failed to contribute to the well-being of either the one who provides and receives help (see also Roth, 2008). Also, during development, pervasive psychological need frustration can precipitate deficits in capacities for self-regulation and social connection, often through layered and cascading negative effects (Vansteenkiste & Ryan, 2013).

The significant role of the context

Need supportive and need thwarting leadership. SDT research has shown that work environments that are perceived as supportive of the basic psychological needs are conducive to optimal motivation, functioning, engagement and well-being among employees, along with benefits for the organization (for a review, see Deci, Olafsen, & Ryan, 2005). This included more initiative-taking, flexibility, efficiency, achievement and performance. Under need-supportive circumstances, people would move to a direction of increasing growth and adaptation (Sheldon & Kasser, 2001; Van der Kaap-Deeder, et al., 2016). Regarding the work context, it is important to look at practices that involve thoughts of whether it is likely to (a) experience the freedom to experiment and initiate their own behaviours and not feel pressured and coerced to behave as directed (i.e., autonomy), (b) feel respect and belongingness in

relation to both supervisors and peers (i.e., relatedness), and (c) allow the employees to gain competencies and/or feel confident (i.e., competence) (Van den Broeck, et al., 2010). So, a need-supportive (work) context promotes full functioning and wellness among employees, which is beneficial for both employees and the organization.

On the other hand, when the context is undermining, it can lead to frustration of the psychological needs. It is like negative dimensions of the social environment that indicates compromised functioning and well-being (Bartholomew, et al., 2011). Need-thwarting environments, lifestyles, or activities are associated with controlled motivation (e.g., behaving out of external pressure or guilt) and, consequently, ill-being and psychopathology in various age groups and cultures (e.g., Deci and Ryan 2012; Deci, et al., 2001; Soenens, et al., 2007; Vansteenkiste, et al., 2006).

SDT offers a useful framework because of the distinction between three broad dimensions of need-supportive and need-thwarting socialization: (1) autonomy support (i.e., understanding) versus autonomy thwarting (i.e., intrusive, domineering and controlling), (2) relational support (i.e., involvement) versus rejection (i.e., cold and indifferent) and (3) structure (i.e., guidance) versus chaos (i.e., chaotic, unpredictable, and critical), which are defined into more depth below (Soenens, et al., 2017; Vansteenkiste & Soenens, 2015, Aelterman, et al., 2018).

Autonomy-supportive versus controlling style. The basic attitude of an '*autonomy-supportive style'* represents an interpersonal tone of understanding. When adopting this style, the leader attempts to maximize employees' sense of volition and psychological freedom by adopting a curious interest and accepting attitude (Mageau & Vallerand, 2003; Vansteenkiste & Soenens, 2015) in employees' interests, personal preferences, problems, and concerns. This way, they could better empathize with employees' values (Reeve, 2009) and approach them more closely by giving them a feeling of being themselves (e.g., Jang, et al., 2010; Patall, et al., 2013). An autonomy-supportive style generally involves leaders acknowledging employees' perspectives, encouraging self-initiation, offering opportunities for choice and input, communicating in an informational rather than a controlling manner, and avoiding the use of rewards or sanctions to motivate behaviour (Baard, et al., 2004; Hardré and Reeve, 2009; Su and Reeve, 2011). Recent work (Aelterman, et al., 2019; Delrue, et al., 2019) distinguishes two approaches to support autonomy, that is, (1) a *participative* style, including practices such as providing choices, asking input, giving suggestions, but also engaging in a dialogue, and (2) an *attuning* style, including practices like giving a meaningful explanation for the choices made,

especially when input is not possible, and acknowledging employees' negative affect and resistance.

Autonomy need thwarting is when one is practicing '*control'* (an interpersonal tone of pressure and coercion). Controlling leaders put their agenda more central, such that they try to guide their employees in a way that is suitable in their agenda and viewpoint. A controlling style is often interpreted as prescriptive, inflexible, and rigid, pressuring the employee to think, feel, or behave in particular ways (Ryan & Deci, 2017) leaving little or no room for employees' own perspectives (Reeve, 2009). Hence, the style signals to employees that the leader is the initiator of action, shifting the perceived cause of one's behaviour to an external source (Deci, et al., 1989; Deci and Ryan, 1987). Controlling leaders tend to use pressuring language like 'it is your duty to do this task'. Specifically, control falls apart in two styles: (1) a *demanding* style, i.e., one admits no contradiction, one's using tight, forceful, commanding language and threating the employees with sanctions, and (2) a *domineering* style, when the leader focuses on the person itself, so it is about a personal attack. The leader acts in intrusive strategies like inducing feelings of guilt and shame by using their power (Aelterman, et al., 2018).

Here are some more examples of previous studies to demonstrate once again the importance of an autonomy supportive context. Individuals are more likely to be autonomous and volitional in their work activities in an autonomy supportive context (Rigby & Ryan, 2018). Leader autonomy support is positively associated with basic needs, well-being, and positive work behaviours (but also with work engagement, positive job attitudes), and was negatively associated with distress (meta-analyse, Slemp, et al., 2018). Also, and amotivation is more likely to be absent. In addition, autonomy support of the leader showed a strong positive association with proactive work behaviour and a moderate positive association with prosocial work behaviour (e.g., Gagné 2003; Güntert 2015; Slemp, 2017; Slemp, et al., 2015).

Relational support versus rejection. Secondly, 'relational support' appears by showing involvement, feeling what the other person is actually feeling, practicing nice activities together as a group, celebrating success and having spontaneous talks. It is characterized by a basic attitude of genuine respect, care and warmth. This can be done by strengthening the bond with the employee or by promoting a group feeling between employees (Kark, et al., 2003). When experiencing relational support, the employee suffers less from stress and handles it better. In addition, relational support also has a positive effect on the overall well-being of employees (Schaufeli & Enzmann, 1998; Avoilio, et al., 2004).

In contrast, *'rejection'* (i.e., thwarting for the need of relatedness) presents when the leader is physically absent or when he/she keeps staring at your computer when someone asks

a question. Rejection or poor relationships in the workplace is a major cause of stress within an organization (Tepper, 2000). Cold, rejecting, and controlling (i.e., need-thwarting) parenting has been shown to be involved in the development of various traits such as Machiavellianism (Láng & Birkás, 2014), borderline personality disorder (Fruzzetti, et al., 2005; Ryan, 1995; Stepp, et al., 2014), and self-critical perfectionism (Koestner, et al., 1991; Kopala-Sibley & Zuroff, 2014; Soenens, et al., 2008). Considered from SDT, these maladaptive traits can be seen as defensive and compensatory responses to deal with chronic exposure to need-thwarting conditions (Deci & Ryan, 2000; Ryan, et al., 2016).

Structure versus chaos. Finally, '*structure'* is characterized by an interpersonal tone of guidance. It consists of a process-oriented approach (Curran, et al., 2013; Soenens & Vansteenkiste, 2010), like making progression and learning. Structure is also about guidelines in what is needed and clearness in what the goals are. There is a clear agenda, so the employees know what is expected from them. It's also about offering assistance when needed. This way, the need for competence is supported. When leaders adopt a structuring style, they try to align activities and expectations with employees' emerging skills while offering help and suggesting strategies, so that they feel competent to master learning activities (Vansteenkiste & Soenens, 2015). Structure is divided into (1) a *guiding* style, which is about constructively reflecting or allowing to ask questions to get more insight. To provide appropriate help or assistance when needed. Additionally, giving motivational and informational feedback (De Muynck, et al., 2017; Jang, et al. 2010; Levesque, et al., 2004), and (2) a *clarifying* style such as when the leader communicates clear expectations and goals and follows up whether employees live up to these expectations (Belmont, et al., 1988).

In contrast, when there is an interpersonal tone of laissez faire; employees are experiencing '*chaos'* if they get confused about what they should do and it even hinders them in their skill-development (Mageau & Vallerand, 2003; Skinner, et al., 2005) (i.e., thwarting to the need of competence). When leaders adopt a chaotic coaching style, their behaviour is unpredictable, inconsistent, or indifferent. Chaos falls apart into two styles: (1) an *abandoning* style such as when the leader gives up on his/her employees by neglecting them, showing little interest in their work and leaving to their own device. They are unresponsive to struggles or give up on earlier introduced rules in case of resistance. Second, the *awaiting* style includes letting things take their course and seeing how a situation further evolves before she/he takes action, so this is actually a wait-and-see attitude while more direction is needed (Aelterman, et al., 2019).

To conclude, SDT has been centrally concerned with promoting the need-supportive conditions across domains that facilitate people motivating themselves autonomously and in turn working well and feeling good. Need-supportive leaders elicit and acknowledge employees' perspectives, provide opportunities for skills building and problem solving, and create a warm interpersonal environment (Niemiec, et al., 2014; Williams, et al., 2011). Need-supportive environments are positively related to experiences of need satisfaction and to lower levels of need frustration (Schultz, et al., 2015). Need-supportive work contexts have positive relations with employees' work-related well-being (i.e., job satisfaction, work engagement, and lower burnout), favourable attitudes (i.e., decreased turnover-intentions, increased readiness to change), and higher performance (see Gagne & Deci, 2005; Van den Broeck, et al., 2008, for overviews). Need-supportive work contexts may help to optimize employees' personal resources, motives, goals and autonomous motivation (for a review, see Gagné & Deci, 2005).

The dual process model. Basically, need-satisfaction is a better predictor of positive outcomes (e.g., vitality) (Nix, et al., 1999) than low need frustration, and need frustration is a stronger predictor of negative outcomes (e.g., depression, negative affect, psychological stress biomarkers) than low need satisfaction (Bartholomew, et al., 2010, 2011; Stebbings, et al., 2012). Need frustration is not just the opposite of need satisfaction but instead is a separate motivational experience (Chen, et al., 2015; Sheldon & Hilpert, 2012). The opposite of need satisfaction is not need frustration (e.g., "I feel rejected by those around me") but, rather, is need dissatisfaction (e.g., "I don't have opportunities to interact with others"), which is an experience of need neglect or a lacking of opportunities for need satisfaction (Costa, et al., 2015). Need dissatisfaction follows from a passive disregard for the basic psychological needs. However, the psychological needs must be actively thwarted or undermined to speak about need frustration (Bartholomew, et al., 2011; Haerens, et al., 2015; Vansteenkiste & Ryan, 2013). Need frustration, in contrast, is closely linked to active need thwarting. When need satisfaction and need frustration are assessed together, researchers find that they are only moderately negatively correlated (Bartholomew, et al., 2011; Cheon & Reeve, 2015; Unanue, et al., 2014). Further, these investigations find that need satisfaction tends to predict one class of outcomes (e.g., optimal functioning), while need frustration tends to predict a different class of outcomes (e.g., non-optimal functioning).

The dual process model is built on a differentiated view of the social-contextual environment, of motivation, and of outcomes. That is, leaders' perceived motivating style is differentiated into the distinct processes of perceived autonomy support and perceived control, employees' motivation is differentiated into the distinct processes of need satisfaction and need

frustration, and the outcomes are differentiated into those that are adaptive and optimal (e.g., engagement) and those that are maladaptive and non-optimal (e.g., disengagement). Leaders could rely on both controlling and autonomy-supportive styles (Haerens, et al., 2018), so autonomy support and control may constitute a 'bright' and 'dark' pathway to followers' optimal functioning (Haerens, et al., 2015). Autonomy support and control are two separate dimensions rather than strict opposites falling along the same continuum. (e.g., Haerens, et al., 2015; Jang, et al., 2016). Autonomy support and control and structure and chaos were found to be moderately (but not perfectly) negatively correlated, which is also congruent with the dual process model. Cross-sectional (Bartholomew, et al., 2011; De Clerck, et al., 2019; Haerens, et al., 2015) but also longitudinal research (Bartholomew, et al., 2018; Jang, et al., 2016; Patall, et al., 2018) have found evidence these differentiated processes conceptually distinct with its own unique set of antecedents and outcomes (Vansteenkiste & Ryan, 2013). Figure 2 gives a visualisation of these two pathways.

There are already many studies in the educational context that provide evidence for the dual process model and this model has been studied to a rather limited extent in the work context. Although there are exceptions, like Gillet or Olafsen's study, but they have mainly looked at the effects of need frustration. The present study within the SDT will broaden it in a more general way to the work context.

A closer look at the universality claim

As we already mentioned, an important characteristic, according to SDT, is the universal nature of the needs. Need satisfaction and need frustration should predict, respectively, the thriving and ill-being of *all* individuals.

At this moment, the debate about the claim that everyone benefits equally from a need-supporting style is going on among researchers and practitioners. Also the fact that everyone is equally disadvantaged by a need-undermining style is being questioned.

Relativistic models pay attention to moderating variables such as age, personality, families' socio-economic status, cultural climate, education, and the domain of socialization. Specifically, relativists argue that there is no room for universalities so they don't support 'one size fits all'. SDT's view on human nature is controversial from the perspective of these cultural relativist views (e.g., Markus & Kitayama, 2003) because the assumption of a growth tendency supported by universal needs contradicts their blank slate, culture-as-script understanding of human propensities (Vansteenkiste & Ryan, 2013). An extreme relativistic view would hold that these kind of moderating variables may alter the effects of leading a team, so that the nature of

optimal leadership cannot be defined. In this view, autonomy support could not be considered an ingredient of good leadership because its effects would be qualified by several variables. An extreme relativistic position risks concluding that no recommendations can be made regarding beneficial or detrimental leadership practices.

In contrast, the universality claim postulates that differences play a minimal role in altering effects of experienced need satisfaction and frustration relative to the expected main effects (Ryan, et al., 2019). An extreme universal view would hold that key ingredients of optimal leadership produce the same effects for all employees. In this view, autonomy supportive leadership would benefit all employees equally. An extreme universal position leaves no room for important individual differences in leadership styles. This view denies the role of powerful sources of influence in dynamics of leading a team such as function and room for decision-making.

This debate has so far been conducted primarily in the educational context. Relativistic and universalistic viewpoints on the role of parents' support for autonomy and control are not necessarily contradictory. Different children perceive and interpret the same parental behaviour differently, and these differential appraisals may be shaped by the factors highlighted in relativistic accounts of parenting. This variation refers to the notion of functional significance highlighted in SDT. However, what ultimately (and universally) matters for children's adjustment is the extent to which events are experienced (either consciously or unconsciously) as supporting autonomy or being controlling. Consistent with SDT, at a deep level, subjective experiences of autonomy, competence, and relatedness are universally essential for growth. Yet, individual differences exist in how actual parental behaviour translates into such subjective experiences. So at the work context, it is important to look at how the employees interpret the behaviour of the leader.

Such reasoning suggests that there is no call for a one-size-fits-all perspective. It is rather a position that leaves room for individual differences within the universalistic perspective. This is like Schweder and Sullivan's principle of universalism without uniformity (Soenens, et al., 2014) in which everyone receives benefits when the three needs are fulfilled, but in a different way. So the pathways to need fulfillment may depend to some extent on factors such as culture, developmental history, and personality, although the satisfaction and frustration of the needs are still produced across these variations (e.g., Vansteenkiste, et al., 2019; Yu, et al., 2018). Within the SDT-literature, this is also referred to as 'functional significance' (Deci & Ryan, 1985) in which individuals attribute to an objective need-relevant practice, which can vary as a function of cultural, socio-demographic, and personality differences.

Claiming universality of needs does not imply that every person, especially within every domain or task, would equally benefit or suffer from need-satisfying or need-frustrating experiences (Soenens, et al., 2015). Although this issue has been increasingly investigated in the educational and parenting field, a closer scientific look at the specific moderators in the work domain is currently lacking. The present study aims to fill this void by examining whether the function of blue- or white-collar worker and room for decision-making play an influencing role.

The influence of function and room for decision-making

Regarding the universality without uniformity principle (Soenens, et al., 2014) not everyone benefits equally from a need-supportive context and not everyone suffers equally from a need-thwarting context. Also, there is a conviction that the benefits (or disadvantages) of need satisfaction (and need frustration) depend on the situation, but also on individual characteristics. Specifically, in the current study, we will take a closer look at different potential moderators that could influence the relation between the leadership style and the psychological needs, namely function and room for decision-making.

Function as a moderator. In the work context, there are various people and profiles with different personalities, needs, work content, etc. Here, we make a distinction between white- and blue-collar workers. The common part of the definitions of blue-collar workers are manual and hard physical work, and index people on 'the floor'. Blue-collars are characterized by non-supervisory, non-managerial and often hourly waged jobs. It mostly requires low skills with low educational level. We refer to labourers in the primary or secondary sectors, whose profession is often temporary and/or low-status (Savage, et al., 2013). According to Gibson and Papa (2000) blue-collars skilled tradespeople, factory workers, farmers and other labourers. They are engaged in a work with some type of physical labour that is paid in an hourly, rather than fixed, wage (Ledere, 1987). In contrast, white-collars are doing mainly brain-work. Their work is based on data like words, numbers, ideas, figures, information. White-collars are more situated at a professional and managerial level (Halle, 1984).

In recent decades, the nature of work has shifted from industry to knowledge and, as a result, focus has shifted from chemical, biological, and physical hazards in the workplace to psychological demands at work (Bureau of Labor Statistics, 2014). Yet with psychological demands at work represented by higher performance standards and more complex technology, employees may perceive the workplace as need thwarting rather than need supportive, and as a result may experience stress while at work (Olafsen, et al., 2017). The blue-collar workers work in a different work environment than white-collar workers. According to SDT, the varied

types of extrinsic motivation are salient to different degrees in workplaces, and each has predictable consequences. For example, some work environments foster more autonomous motivation and engagement in their employees, whereas others have them focused more on external contingencies or leaders' approval.

Although the amount of research about blue-collars is rather small, here are some findngs. Brannan (2000) indicated that judges' decisions depend on the setting and context, so that discriminatory and offensive behaviour is more tolerated in blue-collar work settings. These stereotypes were for instance that they do dirty and dangerous work in a vulgar setting. Miners construct a positive self-identity about their occupation position by arguing that all work is valuable and important, and that dignity is based on the quality of work (Lucas, 2011). A study in an American factory has shown that the work-identity is based among a strong work ethic and these blue-collars said that for working in this company you have to be an extremely hard working, motivated a conscientious worker. According to the relatedness basic need in the SDT; Baxter and Wallace (2009) indicated that male blue-collars in construction work construct their work identity by threatening outgroups such as Polish immigrant workers. By doing this, they construct a strong sense normative identity based on solidarity and cohesion for their group. Blue-collar workers don't have a need for training because of the nature of the job itself and they only attribute importance to rewards and advancement chances. In contrast, white-collar workers have more attention to job titles, satisfaction with the job itself, social status, independence, rewards, training and chance for progress, and especially involvement in decision making. (Dora Najjarand Pascale Fares, 2017). Lemogne C, et al. (2017) studied the moderating effect of occupational grade on the association between depressive symptoms and incident cardiac events. This association was positive among blue-collar workers. However, these are mainly findings of main effects. Remarkably, we couldn't have find moderation effects of function.

Room for decision-making as a moderator. Room for decision-making is a second moderator that will be investigated. A concern with this variable is a possible conceptual overlap with the role of autonomy support (and a participative style of the supervisor in particular). We consider room for decision-making as a job characteristic, rather than as a context variable related to the behaviour of others (e.g., the supervisor). An interesting question here is whether workers who have little room for decision-making because of their job context benefit more from an autonomy-supportive style of their direct supervisor, and suffer more from a controlling style of their direct supervisor.

Some researchers made a differentiation between two operationalizations of autonomy; autonomy as independence (versus dependence) is operationalized as the degree of independent decision making, and autonomy as self-endorsed (versus controlled) functioning is operationalized as the degree of self-endorsement reflected in motives underlying both independent and dependent decision making. These two operationalizations of autonomy (namely (1) autonomy as independence and (2) autonomy as self-endorsed functioning) were associated differentially with adolescents' adjustment. In addition, independent decision making is related to more problem behaviour. Self-endorsed motives for both independent and dependent decision making were associated with better adjustment, and controlled motives found to relate to maladjustment (Van Petegem, et al., 2011). Also in a study about autonomy in a collectivistic culture with Chinese adolescents, they made the distinction of autonomy as independence (FDMS, Dornbusch, et al., 1985) and autonomy as self-endorsed functioning. Autonomy as independence was not associated with psychological well-being or need satisfaction. Self-endorsed motives related to higher levels of subjective well-being, whereas the experience of psychological need satisfaction playing an intervening role in these association (Chen, et al., 2013). We have already highlighted the importance of a need-supportive work environment to foster experiences of autonomy, relatedness and competence satisfaction. A problem related to the blue-collar workers could be to ensure this amount of autonomy and control despite the repetitive nature of the work. Although the work process is highly standardized, worker empowerment can still be achieved through a control based on interdependence. However, this can only happen if the decision-maker understands that autonomy must be a function of coordination to ensure the system's integration. The supervisor should be able to observe in a non-judgmental manner in order to allow the employee to have a range of autonomy despite possible errors. This together with trying to increase employees' sense of initiative (Finstad, et al., 2019).

Finstad and colleagues (2019) also say that decision-making power along with support from colleagues and superiors are important construct to prevent hostile behaviours at work. Managers that allow more participative decision making may have fewer negative side effects from today's rising levels of employee job insecurity (Probst, 2005).

The Present Study

Research question 1. A first aim to the present study is to replicate the dual process model (Bartholomew, et al., 2018; De Clerck, et al., 2019; Jang, et al., 2016; Haerens, et al., 2015; Patall, et al., 2018), thereby investigating the existence of a bright pathway from a need-

supportive context (i.e., autonomy-supportive, structuring leadership style and relational support) to positive outcomes via experiences of need satisfaction, and a dark pathway from a need-thwarting context (i.e., controlling, chaotic leadership style and rejection) to negative outcomes via experiences of need frustration. Based on prior cross-sectional (Bartholomew, et al., 2011; De Clerck, et al., 2019; Haerens, et al., 2015) and longitudinal studies (Bartholomew, et al., 2018; Jang, et al., 2016; Patall, et al., 2018) confirming this dual process model in education and sport, we predict to find similar findings in the domain of work. Figure 3 gives a visualisation of hypotheses H1a and H1b, and Figure 4 gives a visualisation of hypothesis H1c.

H1a: Need-supportive leadership is positively related to positive outcomes and negatively related to negative outcomes, while a need-thwarting leadership is positively related to negative outcomes and negatively related to positive outcomes.

H1b: Need satisfaction is positively related to positive outcomes and negatively related to negative outcomes, while need frustration is positively related to negative outcomes and negatively related to positive outcomes.

H1c: Experiences of need satisfaction and need frustration mediate the relationship between leadership and (work-related) outcomes.

Research question 2. Even though the basic needs for autonomy, competence, and relatedness are universal, both researchers and practitioners are increasingly convinced that the fulfilment of these needs may differ in function of the person and the situation. There is already some evidence of the main effects of room for decision-making in past research. However, we could not have found its moderating role. Also, this was not found for the role of function (i.e., whether you are a blue-collar or white-collar worker). Although all the findings above are insightful, the available research has been mainly conducted in other domains than work, and the question arises whether similar dynamics occur among employees. Therefore, the present study aims to investigate whether the effects of need-supportive and need-thwarting leadership are more or less pronounced as a function of employees' (1) function and (2) room for decision-making in their job. Given that the extent literature regarding the role of each of these two potential moderators is relatively small, this research question was investigated in an exploratory fashion. See figure 5 for a conceptual model regarding this research question.

Method

Procedure

Participants filled in an online survey with questions. Research observed advantages of web-based surveys such as low costs (Cobanoglu, et al., 2001; Ebert, et al., 2018; Greenlaw & Brown-Welty, 2009), short answer time (Sebo, et al., 2017), more completed questionnaires (Sebo, et al., 2017) and less missing values (Ebert, et al., 2018). For these reasons, a web-based survey was used to measure the variables, which was the case for all white-collar workers. A visit on site within the companies was done and most of the blue-collar workers were assisted to fill in the questionnaire in order to provide them with more clarification when needed (see Figure 6 for an informal look into my company visits as a surveyor). The questionnaire was given in Dutch (70%) and English (30%) to the respective Dutch-speaking and English-speaking participants.

Participants

Four different companies were recruited. The most important requirement to be able to participate in this research was that the company existed of both blue-collar and white-collar workers. Each questionnaire started with an informed consent to inform participants of their rights. The final sample consists of 204 participants who completed the questionnaire (77.3% of participants were male). The average age of the participants was 45 years old (with a minimum of 21 years old and a maximum of 63 years old). Participants worked in various sectors, such as food industry (20%), pharmaceutical (health care) sector (12%), packaging and containers (27%) and a material solutions company (industrial minerals) (41%). The majority of the participants were no leaders (70%). 55.7% of the participants were blue-collars and 44.3% of the participants were white-collars. The mean of the number of years they worked in the current company at that moment (measured by job experience) was 15 years (with a minimum of several months and a maximum of 39 years). Finally, the majority of participants worked full-time (92.2%), in comparing with 7.8% of half-time employment. More details about the number of participants and the percentages can be find in Table 1A (see Appendix).

Materials

Since the variables in this study reflect most of the time inner and subjective constructs, it is preferred to use self-ratings for the measuring.

Need-supportive Leadership and Need-thwarting Leadership. These concepts were measured with the Situations At Work questionnaire (short version) and counted twenty-five

items. The Situations-at-Work Scale (SAW) was developed from the Situations-in-School Questionnaire (Aelterman, et al., 2018), a vignette-based questionnaire. The participants were given different leadership behaviours corresponding to an autonomy-supporting, structuring, controlling, chaotic, relational support and rejection style of the supervisor. Using a 7-point Likert scale ranging from 1 (“does not describe my leader at all”) to 7 (“describes my leader very well”), employees were asked to indicate the extent to which each of these behaviours described their leader's style. For example, “my leader actively listens to me and takes into account my needs.”, which measures a need-supportive leadership style, and “my leader does not tolerate any participation or dissent from me.”, which measures a need-thwarting leadership style. Cronbach’s alpha for the need-supportive leadership scale was .93 and for the need-thwarting leadership scale .74.

Need Satisfaction and Need Frustration. To measure the three basic needs, the Basic Psychological Need Satisfaction Need Frustration Scale (BPNSNF) was used (Chen, et al., 2015). This scale consists of items measuring need satisfaction (i.e., satisfaction of autonomy, competence, connectedness) and items dealing with need frustration (i.e., frustration of autonomy, competence and connectedness). An example of an item reporting need satisfaction is "I feel a sense of choice and freedom in the things I do." An item that measures need frustration is "I feel insecure about my abilities in my job." The twelve items were measured on a 5-point Likert scale from 1 (not at all true) to 5 (completely true). Cronbach’s alpha for the Need Satisfaction scale was .62, which is rather low. Cronbach’s alpha for the Need Frustration scale was .70.

Autonomous Work motivation. Employee motivation was measured by The Multidimensional Work Motivation Scale (MWMS; Gagné, et al., 2015). Normally, this counts 19 items, distinguishing between the different types of motivation, namely: amotivation, external regulation, external regulation, introjected regulation, identified regulation and intrinsic motivation. The different items of the questionnaire were categorised into three scale scores, namely autonomous motivation, controlled motivation and amotivation. Because of the many other variables already included in this study, we have chosen to include only autonomous motivation, like “putting efforts in this job has personal significance to me”. The six items were measured on a 5-point Likert scale from 1 (not at all true) to 5 (completely true). Cronbach’s alpha for this scale was .89.

Room for Decision-making. Room for decision-making was measured by using the Demand-Control Model from Robert Karasek (1979) and taking the core dimension decision latitude. He defined decision latitude as a combination of skill use and job control. An example

of one of the eight items is “I can determine when to work”. Cronbach’s alpha for this scale was .80.

Vitality. There were two scales combined to measure vitality, namely UWES (Utrechtse Bevlogenheidsschaal; Schaufeli & Bakker, 2003) and UBOS (Utrechtse Burnout schaal, UBOS; Schaufeli & Bakker, 2003). Only the subscale vitality from the UWES was taken. For example, “At work I am full of energy”. The items from the UBOS were reversed, for instance “At work I feel mentally exhausted”. In sum, the number of items for the construct vitality was fifteen. Cronbach’s alpha for this scale was .89.

Job satisfaction and Turn-over Intention. In the survey, the following three statements about job satisfaction and turn-over intention (Kuvaas & Kuvaas, 2006) were mentioned: “How satisfied are you with your current job?”, to measure job satisfaction. “I will probably look for a new job in the next year” and “I often think about quitting my current job”, were the two items for measuring turn-over intention. The participants indicated there score from 1 (very unsatisfied / not at all applicable to me) to 10 (very satisfied / very applicable to me).

In-role Behaviour. To measure in-role behaviour, the IRB from Williams and Anderson (1991) was used. This scale measures if an employee adequately complete assigned duties and perform tasks that are expected from them, like the item “I meet formal performance requirements of the job.” The construct consisted of seven items. Cronbach’s alpha for this scale was .70.

Organizational Citizenship Behaviour. Organizational Citizenship Behaviour was measured by the OCB scale (Lee & Allen, 2002; Williams & Anderson, 1991). The four items were measured on a 5-point Likert scale from 1 (“not at all true”) to 5 (“completely true”). For example, “I take on tasks that are not mandatory but improve the image of the organization”. Cronbach’s alpha for this scale was .75.

Plan of Analysis

To test for differences in the means between blue-collars and white-collars, a multivariate analyses of variance (MANOVA) was implemented. According to MANOVA, the background variables sex (female versus male), employment (fulltime versus halftime) and position (leader versus not a leader) were checked whether they influenced the variables that has been studied. These outcome variables are need-supportive leadership, need-thwarting leadership, need satisfaction, need frustration, room for decision, autonomous work motivation,

vitality, job satisfaction, turn-over intention, in-role behaviour and organizational citizenship behaviour (OCB).

A mediation-analysis was implemented to explore the association between leadership styles (i.e., need-supportive and need-thwarting) and the outcomes (i.e., motivational, affective, behavioural and social effects), mediated by the need-experiences (i.e., need satisfaction and need frustration). Baron and Kenny's method (1986) was used to examine the mediational hypotheses (see Figure 4). Mediation is examined through following regressions; (Step 1) leadership style (need-supportive and need-thwarting) predicting the study outcomes, (Step 2) leadership style predicting need experience (i.e. need experience and need frustration), (Step 3) need experience predicting the study outcomes and (Step 4) leadership style (need-supportive and need-thwarting) predicting the study outcomes with the mediating effect of need experience taken into account. Step 1 and Step 2 have to show significant influences in order to support a significant mediation. Also in step 3, need experience must significantly influence the study outcomes. Here, leadership style and need-experience are predictors. Complete mediation occurs when leadership style no longer influences the study outcomes after the mediator need experience has been controlled and the conditions are met. There is partial mediation when the influence of leadership style on the study outcomes is reduced after the mediator need experience is controlled. To examine whether this reduction is significant or not, or in other words if there is a full or partial mediation-effect, a Sobel test is used (MacKinnon et al., 2002). Examining this mediated association (Figure 4) between the study variables, is actually replicating the dual process, but currently examined in a work context (in hypothesis 1).

Lastly, a moderation analysis was used as a second model in which function (blue-collar or white-collar) and room for decision-making play a moderated role in the relation between the leadership style and the experience of need satisfaction or need frustration. Age, job experience, sex and employment were added as a control variable and all were centered.

Results

Preliminary analysis

Background variables. Analysis shows that there are no effects of sex (Wilks' Lambda = .89, $F(1,130) = 1.41$, $p = .18$) and employment (Wilks' Lambda = .91, $F(1,130) = 1.12$, $p = .35$) on the study variables. However, there is an influence of position (Wilks' Lambda = .79, $F(1,130) = 2.87$, $p = 0.002$), namely whether you are a leader or not, on certain variables. ANOVA's showed that there is a significant difference for position on need-thwarting

leadership, room for decision-making, need satisfaction, autonomous work motivation, vitality and OCB. See Table 1 for more details about the means (and standard deviations). So leaders experience less need-thwarting leadership, more room for decision-making, more need satisfaction, more autonomous motivation, more vitality and score higher on OCB than non-leaders.

Descriptive Statistics and Variable Intercorrelations. Table 2 shows the means, standard deviations, and Pearson correlations among the study variables. According the other continuous background variables, there was only a significant correlation with the job experience, namely the number of years you work at the current company. Namely, there was a negative correlation between job experience and need frustration, and between job experience and turn-over intention.

Regarding the other study variables, need-supportive leadership is negatively correlated with need-thwarting leadership, need-frustration and turn-over intention and positively correlated with room for decision, need satisfaction, autonomous work motivation, vitality, job satisfaction, in-role behaviour and OCB. However, need-thwarting leadership is negatively correlated with room for decision, need satisfaction, vitality, job satisfaction, in-role behaviour and OCB and positively correlated with need frustration and turn-over intention. There was no significant correlation found between need-thwarting leadership and autonomous work motivation. Room for decision is positively correlated with need satisfaction, vitality and OCB. Need satisfaction is positively correlated with autonomous work motivation, vitality, job satisfaction, in-role behaviour and OCB and negatively correlated with need frustration and turn-over intention. However, need frustration is positively correlated with turn-over intention and negatively related with autonomous work motivation, vitality, job satisfaction, in-role behaviour and OCB. Autonomous motivation has a positive correlation with vitality, job satisfaction, in-role behaviour and OCB and a negative correlation with turn-over intention. Vitality is also negatively correlated with turn-over intention, but positively correlated with job satisfaction, in-role behaviour and OCB. Job satisfaction has a positive correlation with in-role behaviour and OCB as well, and a negative correlation with turn-over intention. Turn-over intention is negatively related with in-role behaviour and OCB. Lastly, there is a positive correlation between in-role behaviour and OCB.

A comparison between blue-collars and white-collars

To compare the blue-collar workers with the white-collar workers on the study outcomes (i.e., motivational, affective, behavioural and social effects), multivariate analyses of

variance (MANOVA) was used. An effect was found for function (Wilks' Lambda = .60, *F(1,130) = 7.15, p = 2.945e-09*). There is a significant difference for function on need-thwarting leadership, room for decision-making, autonomous work motivation and OCB. So blue-collars experience more need-thwarting leadership than white-collars. Blue-collar workers experience less room

for decision-making than white-collar workers. White-collars are more autonomous motivated than blue-collars. Lastly, white-collar workers have a higher score on OCB than blue-collar workers. The means (and standard deviations) are shown in Table 1. There were no significant differences found between blue-collar workers and white-collar workers on need-supportive leadership, need satisfaction, need frustration, vitality, job satisfaction, turn-over intention and in-role behaviours.

Mediation

The mediating role of need-based experiences was tested with regression analyses on different outcomes, namely autonomous work motivation, vitality, job satisfaction, turn-over intention, in-role behaviour and OCB. Mediation analysis was used with Need-supportive leadership as a predictor and Need satisfaction (Table 3) and Need frustration (Table 4) as Mediating Variables. Table 5 shows the mediation analysis with Need-thwarting leadership as a predictor and Need frustration as Mediating Variable. The effect of Need-thwarting leadership on Need satisfaction was not significant. The coefficients were all standardized.

The mediation-analyses showed that need-supportive leadership has an association with autonomous work motivation, vitality, turn-over intention, job satisfaction, in-role behaviour and OCB, but these significant associations are not mediated by need satisfaction. However, the associations between need-supportive leadership and vitality, turn-over intention and in-role behaviour are fully mediated by need frustration. And the association between need-supportive leadership and the outcomes autonomous work motivation and job satisfaction are partially mediated by need frustration. For example, the direct association between a need-supportive leadership style and vitality is significant. When you take into account step 4 (which is explained in the plan of analysis of this paper), you notice that these initial associations disappear and that a significant effect of need frustration left, which indicated a full mediation. However, when we look at autonomous work motivation, the initial associations between need-supportive leadership and autonomous work motivation are reduced but still significant, which indicates a partial mediation of need frustration. There was just no significant mediating effect of OCB here. Need-thwarting leadership has an association with vitality, job satisfaction, turn-over intention and in-

role behaviour, which are all fully mediated by need frustration. There are no significant associations found between need-thwarting leadership and autonomous work motivation and between need-thwarting leadership and OCB.

Moderation

A moderation analysis was used for analysing if the relationship between leadership style and need satisfaction or need frustration is moderated by both moderators *room for decision making* and *function* (i.e., blue-collar workers and white-collar workers). So, this moderating effect is examined on the first path of the model (see Figure 5).

Actually, there were four regressions on which each time the influence of room for decision-making and function was tested, namely (1) from need-supportive leadership to need satisfaction, (2) from need-supportive leadership to need frustration, (3) from need-thwarting leadership to need satisfaction, (4) from need-thwarting leadership to need frustration. [1]

As can be seen in Table 6 there is no significant moderating effect of room for decision-making in the relation between leadership style and need-experience (i.e., nor need satisfaction, nor need frustration). As can be seen in Table 7, there is no significant moderating effect of function in the relation between leadership style and need-experience (i.e., nor need satisfaction, nor need frustration). In sum, room for decision making and function do not play a significant moderating role in the relation between leadership style and need experience.

Discussion

This research aimed to replicate both the dual process model (Bartholomew, et al., 2018; De Clerck, et al., 2019; Jang, et al., 2016; Haerens, et al., 2015; Patall, et al., 2018) in the work domain and the universality claim (Chirkov & Ryan, 2001; Soenens, et al., 2015) among employees by testing function (blue- or white-collar) and room for decision-making as possible moderators. In doing this, we compared the blue-collars and white-collars on a set of conceptual outcomes. The findings show significant differences on perceived need-thwarting leadership, room for decision-making, autonomous work motivation and OCB. So blue-collars experience more need-thwarting leadership and less room for decision-making, than white-collars. White-collars were found to score higher on autonomous motivated than blue-collars.

[1] In addition, there is no significant moderating effect of function and room for decision-making in the relation between need-experience and the outcomes autonomous work motivation, vitality, job satisfaction, turn-over intention, in-role behaviour and OCB.

Lastly, blue-collar workers exhibited less OCB than white-collar workers. There were no significant differences found between blue-collar workers and white-collar workers in terms of the experience of need-supportive leadership, need satisfaction, need frustration, and they also not differ on vitality, job satisfaction, turn-over intention and in-role behaviours.

The current study found that need-supportive leadership is positively related to the positive outcomes autonomous work motivation, vitality, job satisfaction, in-role behaviour and OCB and negatively related to negative outcomes, such as turn-over intention. While need-thwarting leadership is positively related to the negative outcome turn-over intention, and is negatively related to the positive outcomes vitality, job satisfaction and in-role behaviour. Therefore, hypothesis 1a, which proposed that need-supportive leadership is positively related to positive outcomes and negatively related to negative outcomes, while a need-thwarting leadership is positively related to negative outcomes and negatively related to positive outcomes., is accepted. However, need-thwarting leadership is not negatively related to the positive outcomes autonomous work motivation and OCB in the study.

Secondly, hypothesis 1b proposed that need satisfaction is positively related to positive outcomes and negatively related to negative outcomes, while need frustration is positively related to negative outcomes and negatively related to positive outcomes. Results showed that need satisfaction is positively related to the positive outcomes autonomous work motivation, vitality, job satisfaction and in-role behaviour, while need frustration is positively related to negative outcome turn-over intention and negatively related to the positive outcomes autonomous work motivation, vitality, job satisfaction, in-role behaviour and OCB. So hypothesis 1b is confirmed, in exception for the non-significant relation between need satisfaction and the positive outcome OCB.

Based on the dual process model (e.g., Bartholomew, et al., 2018; De Clerck, et al., 2019; Jang, et al., 2016; Haerens, et al., 2015; Patall, et al., 2018), hypothesis 1c stated that experiences of need satisfaction and need frustration mediate the relationship between leadership and outcomes. The results showed that the associations between need-supportive leadership and vitality, turn-over intention and in-role behaviour are fully mediated by need frustration. And the associations between need-supportive leadership and the outcomes autonomous work motivation and job satisfaction are partially mediated by need frustration. Need-thwarting leadership has an association with vitality, job satisfaction, turn-over intention and in-role behaviour, which are all fully mediated by need frustration. However, need-supportive leadership has an association with all study outcomes, but there is no significant mediating

effect of need satisfaction. There are no significant associations found between need-thwarting leadership and autonomous work motivation and between need-thwarting leadership and OCB. This is mainly in line with previous research on cross-sectional (Bartholomew, et al., 2011; De Clerck, et al., 2019; Haerens, et al., 2015) but also longitudinal research (Bartholomew, et al., 2018; Jang, et al., 2016; Patall, et al., 2018) which find evidence for the dual process model in other context than the work field.

Lastly, the moderating effect of function and room for decision-making on the relationship between leadership style and need experience was examined in this paper. This question was tested in an exploratory way because the role of these possible moderations has been little studied in the literature. Currently, there was no evidence for moderation effects in this relationship, nor for function nor for room for decision-making. These results support the universality character of the needs (Chirkov & Ryan, 2001). However, the principle of universalism without uniformity is repeatedly supported in research in different domains (Soenens, et al., 2014). In this paper, it seems that the pathways to need fulfillment and its outcomes do not depend on factors such as function and room for decision-making. So blue-collars and white-collars equally benefit or suffer from need-supportive leadership or need-thwarting leadership.

Limitations and Suggestions for Further Research

There are several limitations that need to be discussed in this study. First, looking at the demographic variables, almost all blue-collar workers who filled in the survey were men. Common method bias could have appeared by factors such as specific characteristics of the items (e.g., item complexity, negatively worded items, scale length, item priming; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Especially, the target group blue-collars who are often less high-educated the questionnaire could be difficult and cognitive challenging. The mother language of several blue-collar workers were French, Polish and Oekraïnish. Therefore, the conducting researcher had to help them with more explanation of the English items, which could have influenced the interpretation. Future research could focus on developing and validating instruments in more languages.

To measure the variables, the decision was made to only use self-reporting instruments. Research suggests that employees regularly perceive the situation as not safe to evaluate their leader, because of the possible negative career-related consequences such as punishment, negative labels, poor evaluations, losing the support of their supervisor (Detert & Edmondson, 2011; Kish-Gephart, et al., 2009; Milliken, et al., 2003). However, this can also have the

consequence of participants answering with social desirability (i.e., the tendency to give socially desirable answers instead of answering with the truth). A recommendation for future research is to investigate whether the results are different when the variables are measured with ratings from other sources. Now there are used self-rating instruments from the inner perception. Therefore, it is also suggested to include more objective variables in future studies, such as absence rates.

As the workplace is very divers, next to function and room for decision-making, it could be relevant to investigate the moderating role of personality, by using The Big Five Inventory (John, et al.,1991). It is a personality instrument which allows assessment of five personality dimensions, namely extraversion, emotional stability, agreeableness, conscientiousness, and openness (Costa & McCrae, 1990). In terms of contextual appraisals, personality may affect the functional significance of external events (Deci & Ryan, 1987; Vansteenkiste, et al., 2008). That is, depending on their personality, individuals may be more inclined to see the informational and growth-promoting value of external events or, in contrast, interpret these same events in more evaluative and threatening terms. So, personality differences could colour for example the interpretation of these external events and the social environment. However, directly considering the role of Big-Five traits, recent studies have begun addressing whether personality moderates the association between psychologically controlling parenting and problem coping related outcomes (Mabbe, et al., 2016; Vansteenkiste, et al., 2018). These studies have shown that the number of moderating effects (across different outcomes and across informants) is limited. Specifically, psychologically controlling parenting was found to relate to more internalizing problems irrespective of children's Big Five personality traits, yet it was related to externalizing problems mainly among children scoring low on agreeableness (Mabbe, et al., 2016). So, Agreeableness, the most consistent personality moderator across the studies, can play a protective role against psychologically controlling parenting, particularly when considering externalizing problems as an outcome. Although children and teens scoring high on Agreeableness were less likely to display externalizing problems in response to psychologically controlling parenting, they did experience internalizing problems in relation to parental control. Agreeableness did not attenuate all costs. It could be interesting to research the role of personality in a work-context as well.

Also, individual differences in 'need-strength' (i.e., the preference of particular needs; Vallerand, 2000) may play a moderating role. Within need-strength we can distinct (1) need desire (craving for new opportunities for need satisfaction) and (2) need valuation (the extent to

which individuals value certain needs (i.e., need valuation or importance assigned to the needs). Several studies (e.g., Harackiewicz & Sansone, 1991; Hofer & Busch, 2011) demonstrated that satisfaction of a particular need has the strongest relation to well-being among individuals scoring high in need strength for this particular need, which supported the moderating effect of need-strength. However, regarding the universality claim of the SDT, differences in need-strength play a minimal role in altering effects of experienced need satisfaction and frustration relative to the expected main effects (Ryan, et al., 2019). Thus, there are inconsistent results regarding the need strength as moderator and can serve as a suggestion for future research.

Another limitation is the choice of the measurement instrument for room for decision-making, namely the dimension decision latitude from the Demand-Control Model (Robert Karasek, 1979). There is a possibility that using another measurement instrument could change the outcome and result, such that the results would scientifically support the moderation from room for decision-making in the relationship between leadership and need-experience and between need-experience and the study outcomes.

A final limitation refers to the design of using a cross-sectional study. Therefore no statements on causal relations can be made. It is an interesting possibility for future research to use the same research question and hypotheses in a longitudinal design to see whether the moderation of function and room for decision-making will be accepted in the long term.

Practical Implications

The findings of this study could help with supporting leadership training programs, because it helps leaders with understanding the mechanism behind the basic psychological needs. If they see the importance of a need-supportive leadership style, it can be a win-win situation for leaders and employees. If leaders create a context where the needs are supported, employees will be more autonomous motivated, experience more vitality, are more satisfied with their job and less chance to think about leaving the current organisation.

For leaders, it might be more interesting to take the well-being of blue-collars into account, because results have shown that they experience more need-thwarting leadership. A possible explanation could be because of the fact that blue-collars have lower levels of room for decision-making. Also, they experience less autonomous work motivation and do less organizational citizenship behaviour. So this is a group of employees which also deserve a lot of attention.

There still was a debate going on about the claim that everyone benefits equally from a need-supporting style and equally experience disadvantage from a need-thwarting style is going on among researchers and practitioners. So far this debate has so far been taken particularly in the educational field. This debate can be substantiated by taking this work-related study into account, as the results showed again the universal nature of the needs, here regardless the function and room for decision-making of all employees.

From a personal point of view, we could hope that this study will reduce the stereotypes surrounding blue-collars, because as this study has shown, function plays less of a role in its mediating effect than you might think at first sight. Organizations can build an inclusive culture where there is attention for the needs of everyone, whether you are a blue-or white-collar.

Conclusion

This study, based on SDT, investigated the relation between leadership styles and both the motivational and personal functioning of blue-collars versus white-collars. It examined if experiences of need satisfaction and need frustration mediated the relationship between leadership and the (work-related) outcomes. Lastly, this study aimed to assess whether room for decision-making and function would have a moderating effect on the relationship between leadership style and need experience. So, the goal of this study is to replicate the Dual Process Model (e.g., Bartholomew, et al., 2018) in a work context and to further dive into the debate about the universality claim of the needs (Chirkov & Ryan, 2001). Results indicated that blue-collars experienced more need-thwarting leadership, had less room for decision-making, were less autonomous motivated and had lower scores on organizational citizenship behaviour, in comparison with white-collars. Secondly, the hypotheses on research question 1 were mainly confirmed. For need-supportive leadership, only need frustration (and not need satisfaction) fully mediated its association with vitality, turn-over intention and in-role behaviour and partially mediated its association with autonomous work motivation and job satisfaction. Need-thwarting leadership had significant associations with less vitality, less job satisfaction, more turn-over intention and less in-role behaviour, wherein need frustration was playing a fully mediating role. There are no significant associations between need-thwarting leadership and the outcomes autonomous work motivation and OCB. Finally, the relationship between leadership style and need-based experiences is not moderated by room for decision making and function, which was examined in an exploratory fashion. So the effects of need-supportive and need-thwarting leadership are not more or less pronounced as a function of room for decision-making or whether

you are a blue-collar of white-collar. These work-related results add a great relevance to science because the Dual Process Model and the universality claim has now, next the educational and parenting field, examined in a work-related context. Specifically, this current study provides more insight into knowledge on need fulfilment of employees with different functions. Because research on blue-collar workers and room for decision-making is scarce, there are considerable opportunities for researchers to collect more empirical evidence and gain knowledge. When taking into account all the findings, this study emphasises the importance of need-supportive leaders and the negative consequences of need-thwarting leadership, regardless your function and room for decision-making.

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Tables

Table 1

A comparison between leaders versus non-leaders and white-collar workers versus blue-collar workers by means (with standard deviation)

	Leader	Non-leader	F(1,130)	*p*-value	White-collar	Blue-collar	F(1,130)	*p*-value
Need-thwarting leadership	3.36 (.82)	3.56 (1.07)	4.11*	.04	3.28 (.01)	3.67 (1.07)	11.14**	.001
Room for decision-making	3.27 (.76)	2.58 (.82)	14.51***	< .001	3.27 (.76)	2.4 (.74)	50.62***	< .001
Need satisfaction	3.87 (.51)	3.65 (.57)	8.89**	.003	3.72 (.53)	3.71 (.59)	< .01	.98
Autonomous work motivation	4.12 (.66)	3.87 (.79)	5.41*	.02	4.06 (.65)	3.85 (.83)	4.22*	.04
Vitality	4.94 (.95)	4.68 (.97)	4.30*	.04	4.82 (.95)	4.7 (.99)	.30	.58
Job satisfaction	7.25 (1.56)	7.02 (1.79)	1.63	.20	7.01 (1.65)	7.15 (1.78)	.14	.71
Tun-over intention	6.14 (4.08)	6.86 (4.39)	.84	.36	6.61 (4.37)	6.66 (4.26)	.03	.87
In-role behaviour	4.22 (.50)	4.29 (.54)	.45	.51	4.23 (.53)	4.3 (.53)	1.77	.19
OCB	3.93 (.67)	3.58 .95)	6.17*	.01	3.87 (.07)	3.53 (1)	5.55*	.02

Note. * $p < .05$. ** $p < .01$ *** $p < .001$

Table 2

Descriptive Statistics and Variable Intercorrelations

	M	*SD*	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Age	44.62	10.88												
2. Job experience	14.85	11.15	.57***											
3. Need-supportive leadership	4.59	1.3	-.05	.12										
4. Need-thwarting leadership	3.5	1	.02	-.14	-.22**									
5. Room for decision	2.78	0.86	.00	.04	.30***	-.15*								
6. Need Satisfaction	3.72	0.56	-.02	.10	.51***	-.17*	.16*							
7. Need Frustration	2.22	0.71	-.03	-.21*	-.39***	.41***	-.06	-.38***						
8. Autonomous motivation	3.94	0.76	.01	.07	.41***	-.12	.13	.49***	-.29***					
9. Vitality	4.76	0.97	-.05	.12	.47***	-.33***	.20**	.51***	-.53***	.50***				
10. Job satisfaction	7.09	1.72	-.03	.18	.47***	-.24**	.12	.50***	-.43***	.46***	.62***			
11. Turn-over intention	6.64	4.29	-.12	-.23*	-.31***	.34***	-.11	-.37***	.48***	-.17*	-.53***	-.57***		
12. In-role Behaviour	4.27	0.53	-.06	.04	.27***	-.21**	.07	.31***	-.47***	.25***	.29***	.36***	-.5***	
13. OCB	3.68	0.89	.04	.13	.33***	-.17*	.29***	.27***	-.26***	.28***	.25***	.20**	-.19*	.25***

Note. *** *p* <.001, ** *p* <. 01, * *p* < .05

Table 3

Standardized coefficients of a Mediation analysis with Need-supportive leadership style as an Independent Variable and Need satisfaction as a Mediating Variable and Autonomous work motivation, Vitality, Job satisfaction, Turn-over intention, In-role behaviour and OCB as outcomes.

	Need-supportive leadership				
	Step 1	Step 2	Step 3	Step 4	Sobel test
Autonomous work motivation	.38***	.47***	.39***	.26*	.97
Vitality	.35***	.47***	.47***	.15	.98
Job satisfaction	.44***	.47***	.48***	.27**	.98
Turn-over intention	–.27*	.47***	–.34**	–.15	–.95
In-role behaviour	.26**	.47***	.25*	.18	.93
OCB	.25*	.47***	.18	.22	.87

Note. Mediator: Need satisfaction; * $p < .05$. ** $p < .01$ *** $p < .001$

Table 4

Standardized coefficients of a Mediation analysis with Need-supportive leadership style as an Independent Variable and Need frustration as a Mediating Variable and Autonomous work motivation, Vitality, Job satisfaction, Turn-over intention, In-role behaviour and OCB as outcomes.

	Need-supportive leadership				
	Step 1	Step 2	Step 3	Step 4	Sobel test
Autonomous work motivation	.38***	–.43***	–.25**	.33**	2.29*
Vitality	.35***	–.43***	–.48***	.17	3.58***
Job satisfaction	.44***	–.43***	–.48***	.28**	3.53***
Turn-over intention	–.27*	–.43***	.43***	–.12	–3.12**

In-role behaviour	.26**	–.43***	–.46***	.08	3.46***
OCB	.25*	–.43***	–.20*	.20	1.90

Note. Mediator: Need frustration; * $p < .05$. ** $p < .01$ *** $p < .001$

Table 5

Standardized coefficients of a Mediation analysis with Need-thwarting leadership style as an Independent Variable and Need frustration as a Mediating Variable and Autonomous work motivation, Vitality, Job satisfaction, Turn-over intention, In-role behaviour and OCB as outcomes.

	Need-thwarting leadership				
	Step 1	Step 2	Step 3	Step 4	Sobel test
Autonomous work motivation	–.15	.39***	–.25**	–.07	–2.19*
Vitality	–.23*	.39***	–.48***	–.04	–3.25**
Job satisfaction	–.27**	.39***	–.48***	–.12	–3.21**
Turn-over intention	.28*	.39***	.43***	.17	2.89**
In-role behaviour	–.28**	.39***	–.46***	–.12	–3.16**
OCB	–.03	.39***	–.20*	.06	–1.85

Note. Mediator: Need frustration; * $p < .05$. ** $p < .01$ *** $p < .001$

Table 6

Room for decision-making as moderator in the relation between leadership style and need-experience. Those are standardized coefficients.

	Need satisfaction	**Need frustration**
Age	.01	.00
Job experience	–.00	–.01
Sex	–.24	.13
Leader	–.67**	–.12

Employment	–.16	.15
Need-supportive leadership	.50***	–.42***
Room for decision	–.09	.06
Need-thwarting leadership	–.11	.35***
Need-supportive leadership * room for decision	.09	–.05
Need-thwarting leadership * room for decision	.19	–.11
R^2 / R^2 adjusted	.329 / .260	.327 / .258

Note. Sex is dummy coded such that 0 = male and 1 = female.
Leader is dummy coded such that 0 = leader and 1 = no leader.
Employment is dummy coded such that 0 = fulltime and 1 = parttime.
* $p < .05$. ** $p < .01$ *** $p < .001$

Table 7

Function as moderator in the relation between leadership style and need-experience. Those are standardized coefficients.

	Need satisfaction	**Need frustration**
Age	–.01	.01
Job experience	.00	–.01
Sex	.02	.19
Leader	–.85***	–.18
Employment	–.30	.03
Need-supportive leadership	.50***	–.34**
Function	–.58*	.06
Need-thwarting leadership	–.26*	.33**
Need-supportive leadership * function	–.00	–.13

Need-thwarting leadership * function	.33	.09
R^2 / R^2 adjusted	.357 / .291	.321 / .251

Note. Sex is dummy coded such that 0 = male and 1 = female.
Leader is dummy coded such that 0 = leader and 1 = no leader.
Employment is dummy coded such that 0 = fulltime and 1 = parttime.
Function is dummy coded such that 0 = blue-collar and 1 = white-collar.
* $p < .05$. ** $p < .01$ *** $p < .001$

Figures

Figure 1

ABC-model

Figure 2

The Dual Process Model with its a 'bright' and 'dark' pathway

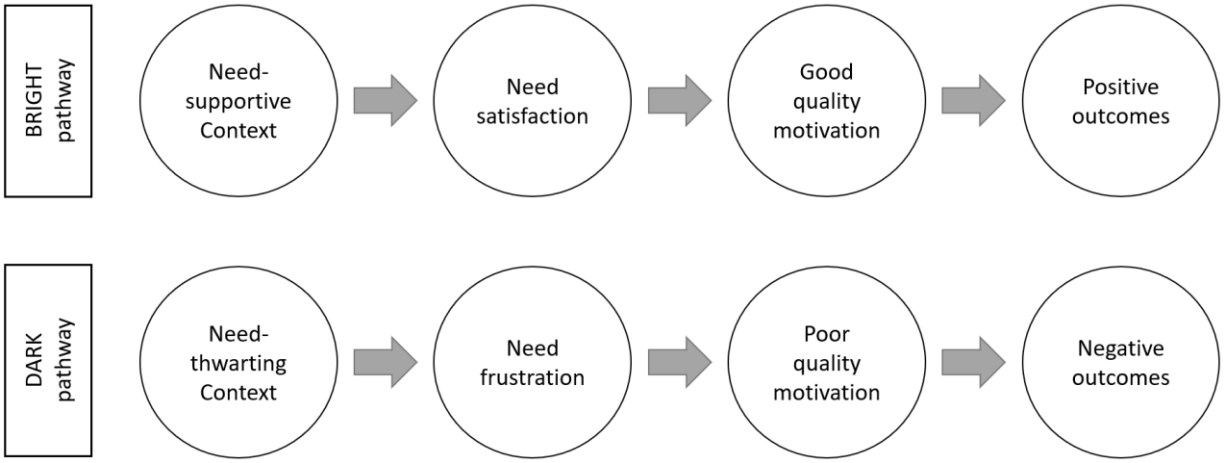

Figure 3

Different paths to the study outcomes

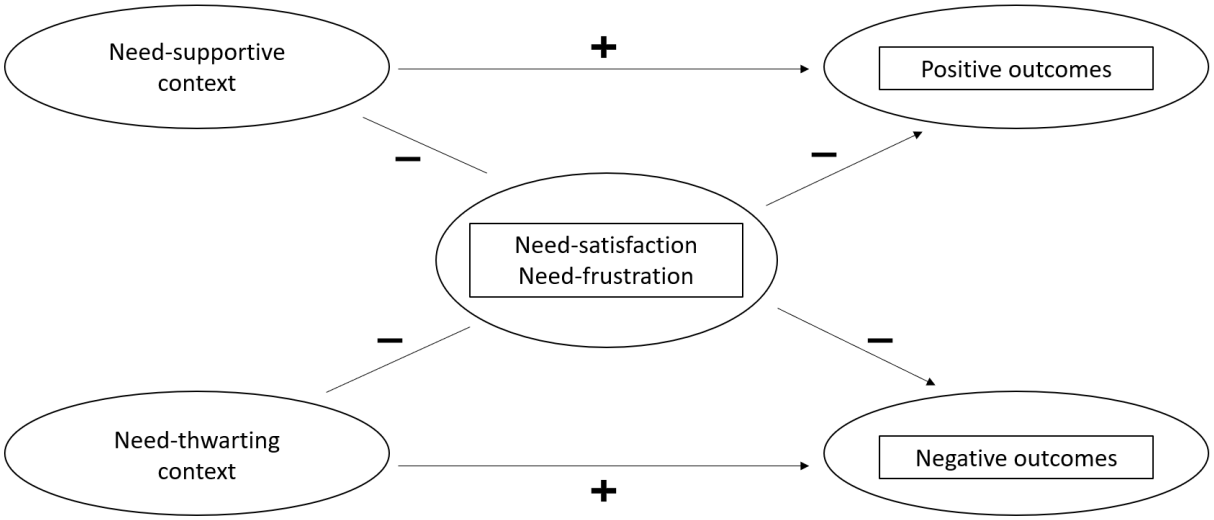

Figure 4

The mediation of experiences of need satisfaction and need frustration

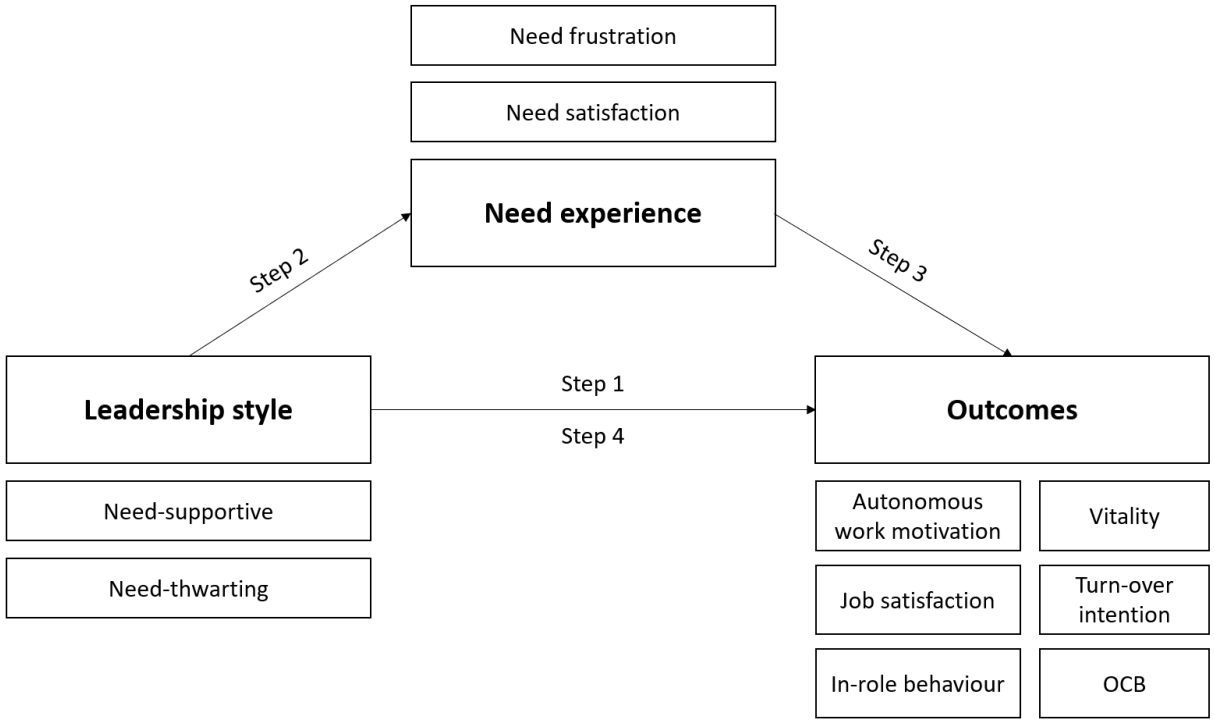

Figure 5

Function (blue-collar or white collar) and room for decision making as potential moderators

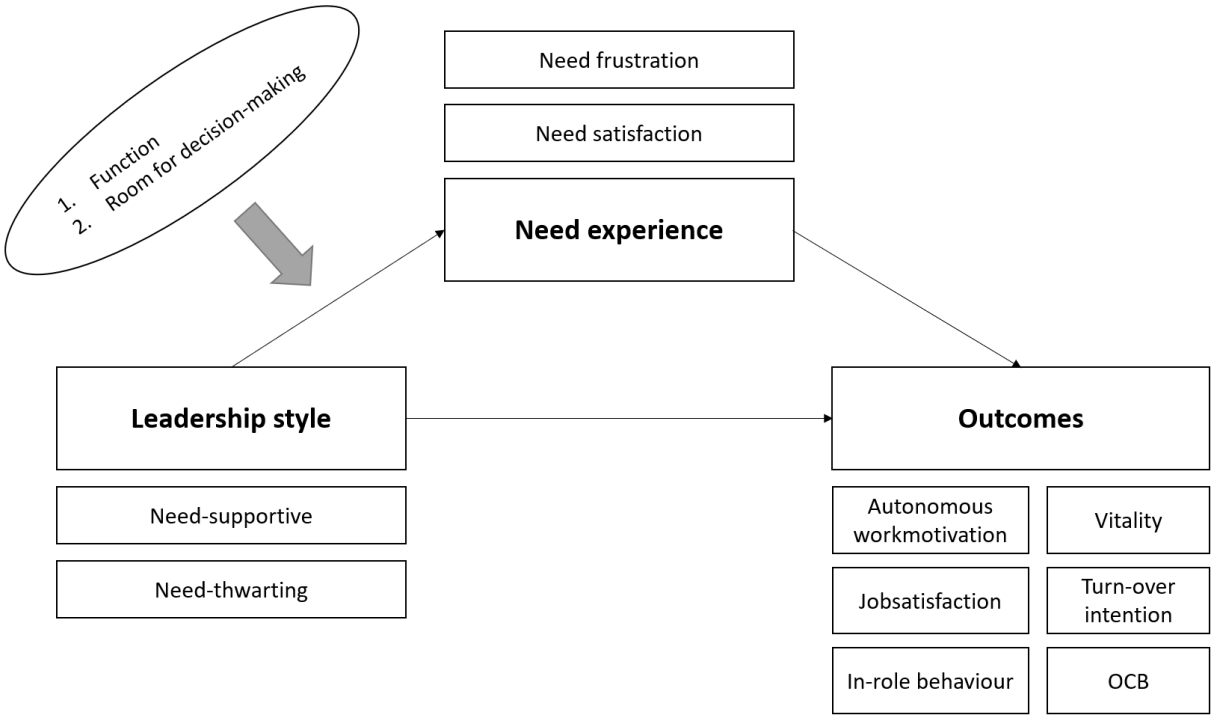

Figure 6

An insight into the company visits for the data collection

Appendix

Table 1A

Demographic Variables (N = 204)

	n	%
Gender		
Female	44	22.7
Male	150	77.3
Sector		

Packaging and containers	55	27
Pharmaceutical sector (health care)	25	12
Food industry	41	20
Material solutions (industrial minerals)	83	41
Function		
Blue-collar worker	108	55.7
White-collar worker	86	44.3
Position		
Leader	58	29.9
Not a leader	136	70.1
Employment		
Full-time	178	92.2
Part-time	15	7.8