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To cite this article: Hans-Christian Knevelsrud, Jørn Hetland, Arnold B. Bakker, Tommy Krabberød, Henrik O. Sørli, Roar Espevik & Olav K. Olsen (2026) Empowering leadership and employee work engagement: a diary study using self-determination theory, *European Journal of Work and Organizational Psychology*, 35:4, 443-461, DOI: [10.1080/1359432X.2025.2594485](https://doi.org/10.1080/1359432X.2025.2594485)

To link to this article: <https://doi.org/10.1080/1359432X.2025.2594485>



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Published online: 27 Nov 2025.



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Empowering leadership and employee work engagement: a diary study using self-determination theory

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ABSTRACT

Empowering leaders delegate authority, grant autonomy, and assign responsibilities to individuals or teams. Drawing on empowerment theory and self-determination theory (SDT), the present study hypothesizes that daily empowering leadership is related to employee work engagement through (a) psychological empowerment, and (b) the satisfaction of basic psychological needs. We collected data among 86 Norwegian Navy cadets during a 30-day transatlantic voyage (response = 97%; $n = 2022$ observations). Consistent with hypotheses, results of multilevel mediation path analysis showed that daily leader autonomy support and development support were positively related to daily employee work engagement through psychological empowerment and satisfaction of the needs for autonomy, relatedness, and competence. Moreover, leaders' autonomy-supportive behaviour was most strongly related to psychological empowerment (not need satisfaction) and indirectly to work engagement when development support was high (vs. low). We discuss how these findings support and contribute to empowering leadership literature, as well as the practical implications.

ARTICLE HISTORY

Received 15 October 2024
Accepted 19 November 2025

KEYWORDS

Basic needs; empowering leadership; Self-determination theory; psychological empowerment; work engagement

Over the past two decades, there has been a growing interest in empowering leadership for its relevance in today's dynamic and complex work environments (Taskan et al., 2022). By emphasizing delegation, decentralized decision-making, and skill development, this leadership style has been shown to positively influence employees' motivation, attitudes, and proactive behaviour, as well as drive favourable organizational outcomes (Kim, Beehr, & Prewett, 2018; Lee et al., 2018; Thun & Bakker, 2018).

However, most research on empowering leadership has focused on the between-person level, relying on cross-sectional or static designs, thereby overlooking the dynamic and fluctuating nature of leadership behaviours and employee experiences (McCormick et al., 2020). As findings at the between-person level may not generalize to the within-person level (Podsakoff et al., 2019), it is essential to replicate studies using within-person designs to uncover daily dynamics. While a small number of daily diary studies have found a positive relationship between empowering leadership and outcomes such as job crafting (Tang et al., 2020),

work engagement (Jiang et al., 2021; Kwan et al., 2024), and proactive behaviours (Schilpzand et al., 2018), the underlying psychological mechanisms linking daily empowering leadership to positive job-related outcomes remain underexplored.

Leaders have a significant impact on employees' work engagement (Decuyper & Schaufeli, 2021). Defined as a fluctuating work-related state of mind characterized by vigour, dedication, and absorption (Schaufeli & Bakker, 2023), work engagement is a well-established predictor of both job and organizational performance (Bakker et al., 2023; Neuber et al., 2022). Empowering leadership has been linked to work engagement through multiple pathways, including organizational identification and workplace well-being (Li et al., 2024), job crafting (Jiang et al., 2021), psychological empowerment (Monje-Amor et al., 2021), basic psychological needs satisfaction (Kim & Beehr, 2020), and work meaningfulness (Lee et al., 2017). However, except for job crafting (Jiang et al., 2021), these mechanisms have been studied exclusively at the between-person level, leaving their day-to-day fluctuations and relationships unknown.

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To address these gaps, we examine two distinct yet potentially complementary psychological mechanisms: basic needs satisfaction and psychological empowerment. While basic needs satisfaction reflects foundational human motivational processes rooted in self-determination theory (SDT), psychological empowerment captures work-specific perceptions of self-determination, competence, meaning, and impact (Spreitzer, 1995). Both mechanisms reflect perceptions of the work environment and are expected to vary as a function of daily contextual changes (Podsakoff et al., 2019). By studying these mechanisms in parallel, this study aims to replicate and extend upon between-person findings at the daily level. Testing both pathways simultaneously, we help clarify whether the effects of empowering leadership primarily operate through universal psychological needs, by fostering a context-specific sense of empowerment, or through a combination of pathways to enhance work engagement (Oc et al., 2023). Finally, to our knowledge, only one study has examined how the subdimensions of empowering leadership relate to employee outcomes (Amundsen & Martinsen, 2014), overlooking the unique relationships between its distinct dimensions and outcomes (Cheong et al., 2019; Lee et al., 2018). Analyzing how the main subdimensions dynamically influence outcomes and interact can improve our understanding of the effectiveness of empowering leadership (Cheong et al., 2019). Do leaders who use a blend of daily empowering leadership behaviours have the strongest impact on their followers' work engagement?

Accordingly, the purpose of this study is to examine how daily empowering leadership behaviours relate to employees' motivational states and, in turn, to work engagement. Using a daily diary design, we examine these daily dynamics in a natural setting, minimizing recall bias and providing a more nuanced description of these relationships (Kelemen et al., 2020). We follow naval cadets in a unique and high-demand environment during the first 30 days of their voyage, as they cross the North Sea and the Atlantic Ocean. Uncovering short-term fluctuations in empowering leadership and employee responses in real-world, high-demand environments can provide valuable insights into how empowering leadership functions in practice. These insights can help identify when, how, and why empowering leadership is most effective, informing practitioners and enabling the development of targeted leadership interventions and training programs.

We aim to make four theoretical contributions. First, our study employs a quantitative daily diary methodology to capture the dynamic nature of leadership and the fluctuating psychological states of employees, offering

a nuanced perspective on the day-to-day variations in empowering leadership and its short-term relationships with employees' work engagement. Importantly, we isolate leader behaviour effects by studying naval cadets who rotate leadership every three days. Second, we examine the mediating role of psychological empowerment and test whether satisfaction of basic psychological needs provides explanatory power beyond the experience of psychological empowerment in the relationship between daily empowering leadership behaviour and daily employee work engagement. Third, we test the novel hypothesis that autonomy support will have the strongest positive relationship with psychological need satisfaction and psychological empowerment when combined with development support. Finally, we explore whether leader development support moderates the indirect relationship between leader autonomy support and work engagement via basic need satisfaction and/or perceived empowerment.

1. Theoretical background

To effectively empower their followers, leaders must not only delegate authority and decision-making rights but also provide their followers with the necessary resources, knowledge, and skills to make sound and informed decisions (Hughes et al., 2022). Amundsen and Martinsen (2014) proposed autonomy support and development support as the two main components of empowering leadership. They defined empowering leadership as "the process of influencing subordinates through power sharing, motivation support, and development support with the intent to promote their experience of self-reliance, motivation, and capability to work autonomously within the boundaries of overall organizational goals and strategies" (Amundsen & Martinsen, 2014, p. 7). Through autonomy support, empowering leaders promote and facilitate their subordinates' sense of autonomy in the workplace by sharing power, delegating formal responsibility, encouraging initiative, and enhancing self-efficacy beliefs. Additionally, through development support, leaders enhance subordinates' skills, competence, and self-leadership abilities, enabling them to manage autonomy and work efficiently.

However, it is important to distinguish between leaders' empowerment practices and employees' subjective experiences of feeling empowered (Cheong et al., 2019). Psychological empowerment refers to employees' cognitive state of empowerment, defined as "the increased task motivation that results from an individual's positive orientation to the work role" (Yukl & Becker, 2006, p. 211). This psychological state is manifested through the four cognitive dimensions: meaning,

competence, self-determination, and impact, which together determine an employee's intrinsic task motivation (Spreitzer, 1995; Thomas & Velthouse, 1990). Theoretically, empowering leadership can benefit both employees and organizations, as empowering leadership practices involve a range of leader behaviours aimed at increasing followers' sense of psychological empowerment, ultimately improving various positive work outcomes (Kim, Beehr, & Prewett, 2018; Lee et al., 2018). Like psychological empowerment, self-determination theory (SDT) emphasizes the crucial role of self-direction and self-determination in fostering intrinsic motivation (Taylor et al., 2019). In separate studies, empowering leadership has been empirically linked to work engagement through satisfaction of basic psychological needs (Kim & Beehr, 2020) and psychological empowerment (Monje-Amor et al., 2021). Both frameworks can, therefore, contribute to a better understanding of how empowerment practices can enhance work engagement.

1.1 Psychological mechanisms

While there are several similarities between the needs outlined in SDT and the cognitive dimensions constituting psychological empowerment, the two concepts differ in scope and focus. Whereas SDT addresses universal needs required to thrive across all life domains, psychological empowerment is a work-specific construct describing an individual's perceived control and ability to influence their work role (Thomas & Velthouse, 1990). The *need for autonomy* (SDT) and the subdimension *self-determination* (empowerment) are equivalent constructs. However, the *competence* subdimension within psychological empowerment is rooted in Bandura's (1986) future-oriented concept of *self-efficacy*, emphasizing the belief in one's capacity to perform specific tasks (Van den Broeck et al., 2008). In contrast, SDT's innate need for *competence* is broader and present-focused, reflecting a general sense of effectiveness that underpins an individual's overall well-being and functioning (Van den Broeck et al., 2008). Furthermore, SDT includes a *relational* dimension that emphasizes the importance of social belonging to well-being. Conversely, psychological empowerment encompasses the cognitive dimensions of *meaning* and *impact*, capturing an employee's sense of purpose and influence. Examining psychological empowerment and basic needs satisfaction in parallel allows for a more comprehensive understanding of how empowering leadership drives engagement, clarifying whether satisfying universal needs adds value to the context-specific empowerment process.

SDT posits three innate psychological needs: autonomy, competence, and relatedness (Ryan & Deci, 2017). Autonomy concerns the need to experience choice and self-regulate one's actions (Deci & Ryan, 2000). Competence refers to the need to master one's environment and develop new skills (Deci & Ryan, 2000; Van Den Broeck et al., 2016), and relatedness is the need to form meaningful connections and establish a sense of belonging with others (Deci & Ryan, 2000; Ryan & Deci, 2017). Satisfying these needs is essential for individuals' intrinsic motivation, optimal functioning, and well-being (Deci & Ryan, 2000; Gagné & Deci, 2005).

According to SDT, leaders play a key role in fostering intrinsic motivation, as they have the power to substantially influence and shape the work environment to provide opportunities for employees to satisfy their basic psychological needs (Chiniara & Bentein, 2016; Hetland et al., 2015; Slemp et al., 2018). Empowering leadership is considered particularly well-suited to create such an environment (Amundsen & Martinsen, 2014). Daily autonomy support, through practices such as delegating responsibility and decision-making authority, gives employees the independence to adjust their daily workflow, thereby satisfying their need for autonomy (Amundsen & Martinsen, 2014; Lee et al., 2018). Providing flexibility and encouraging initiative not only promotes autonomy but also enables employees to develop and apply new skills in their daily work, contributing to the satisfaction of the need for competence (Kim, Beehr, & Prewett, 2018). Additionally, autonomy-supportive leaders foster a sense of social connection by communicating shared goals and continuously encouraging information sharing, promoting satisfaction of the need for relatedness (Kim & Beehr, 2020). Similarly, leaders who provide development support through daily coaching and guidance strengthen subordinates' self-leadership skills and ability to work independently, enhancing their sense of autonomy (Kim & Beehr, 2020). Development-supportive leaders also promote followers' sense of competence by expressing confidence in their abilities, providing timely feedback, and offering opportunities for skill development to help meet daily work demands (Kim & Beehr, 2018). Moreover, when employees perceive that their organization is investing in their development, they develop positive feelings towards their employer, thereby promoting satisfaction of the need for relatedness (Kuvaas & Dysvik, 2009).

When basic psychological needs are satisfied, employees experience autonomous motivation, whereby they can act out of free will and a sense of choice, thus giving them a sense of control and decision-making power (O'Donoghue & van der Werff, 2022; Ryan

& Deci, 2017). Consequently, when employees have the autonomy to make everyday decisions and manage their work, they align tasks with personal goals, approaching activities with greater enthusiasm and persistence (Deci & Ryan, 2000; Rahmadani et al., 2019). When employees feel competent, they are more inclined to accept and pursue challenging tasks and dedicate additional effort to their work (Cerasoli et al., 2016). Furthermore, employees who experience a sense of belonging and secure attachment are more inclined to internalize group values and objectives, thereby increasing commitment and emotional investment in their work (Gagné & Deci, 2005).

A training intervention by Hardré and Reeve (2009) showed that managers who adopted an autonomy-supportive style enhanced their employees' autonomous motivation and work engagement compared to the control group, where managers did not receive such training. Additionally, a recent study by Moore et al. (2023) found that satisfying the needs for autonomy and competence at noon positively influenced employees' task accomplishment and goal attainment in the afternoon. The latter study also found a positive link between daily satisfaction of the need for relatedness and daily organizational citizenship behaviour. Finally, Kim and Beehr (2020) found that empowering leadership predicted work engagement through the satisfaction of employees' basic psychological needs. However, as acknowledged by the authors, this study was limited in that each variable was only measured once using a time-separated design with one month between the assessments. This means that stabilities and changes of the variables could not be considered. Self-determination theory posits that within-person fluctuations in need satisfaction over time, context, or social interactions predict variations in optimal functioning and wellness (Ryan & Deci, 2017). Supporting this view, a meta-analysis found substantial within-person variability in daily needs satisfaction and demonstrated that these fluctuations are positively related to employee attitudes and job-related outcomes, including daily work engagement (Coxen et al., 2021). By focusing on within-person dynamics, the present study provides insight into immediate, day-to-day interplay between empowering leadership and employee work engagement – rather than relying on broad generalizations across individuals. This approach allows us to capture the short-term motivational processes that unfold in response to daily leadership behaviour and how they shape employee functioning in real time. Taken together, we argue that employees' perceptions of

daily empowering leadership are linked to work engagement through its relationship with employees' basic psychological needs satisfaction.

Hypothesis 1. Daily (a) leader autonomy support and (b) development support are positively related to daily employee work engagement through employees' basic psychological needs satisfaction.

For empowering leadership to have its intended effect, it must increase employees' sense of psychological empowerment, a key mechanism in understanding how empowering leadership influences work-related outcomes (Lee et al., 2018; Zhang & Bartol, 2010). Empowerment, shaped by the four interrelated cognitive dimensions – meaning, competence, self-determination, and impact – fosters employees' intrinsic task motivation (Spreitzer, 1995; Thomas & Velthouse, 1990). Meaning emerges when employees' work goals align with their personal ideals or standards (Thomas & Velthouse, 1990). Competence refers to employees' work specific self-efficacy, reflecting their belief in their ability to perform work activities effectively (Spreitzer, 1995). Self-determination is experienced when employees have a sense of choice in initiating and regulating their work-related behaviour (Deci et al., 1989). Impact is the perception that one can influence organizational outcomes and make a difference (Thomas & Velthouse, 1990).

Empowering leaders enhance employees' sense of self-determination by allowing subordinates extensive discretion to manage their daily workflow and decide on work methods while also equipping employees with the skills they need to handle their autonomy efficiently (Amundsen & Martinsen, 2014; Lee et al., 2018). Second, empowering leaders enhance employees' sense of competence by boosting their self-efficacy through daily strategies such as emotional support, encouragement, positive persuasion, and role modelling (Bandura, 1986), while also providing constructive feedback and facilitating learning to further develop their competence (Spreitzer, 1995). Third, empowering leaders facilitate meaning by continuously sharing information and helping employees understand how their contributions add value to organizational success (Conger & Kanungo, 1988; Zhang & Bartol, 2010). Finally, empowering leaders strengthen employees' daily sense of impact by actively involving them in decision-making processes, valuing their input, and recognizing their contributions (Amundsen & Martinsen, 2014; Spreitzer, 1995). Moreover, leaders' development efforts increase employees' skills, strengthening their ability to influence work outcomes and further enhancing their perceptions of impact (Spreitzer et al., 1997).

When employees perceive their work as meaningful and personally important, they find purpose and gain a sense of responsibility, leading them to invest more effort into their work (Lee et al., 2017). Additionally, employees with high self-efficacy, who feel confident in their abilities to perform their work successfully, will invest more energy and dedication in their work (Salanova et al., 2011). Survey research using a between-person perspective has suggested that psychological empowerment mediates the relationship of empowering leader behaviours with various employee outcomes, including job satisfaction (Amundsen & Martinsen, 2015), creativity and innovative behaviour (Amundsen & Martinsen, 2014; Chen et al., 2011; Zhang & Bartol, 2010), in-role and extra-role behaviour (Raub & Robert, 2010), proactive behaviour (Li et al., 2017), and work engagement (Albrecht & Andreetta, 2011; Monje-Amor et al., 2021). These findings suggest that on the days employees feel empowered by their leaders, they will be more enthusiastic and engaged in their work.

Hypothesis 2. Daily (a) leader autonomy support and (b) development support are positively related to daily employee work engagement through employees' psychological empowerment.

1.2 Combined impact of leader autonomy and development support

To understand the effectiveness of certain leader behaviours, it is important to examine how they interact and influence each other (Yukl, 2013). Previous studies have considered autonomy support and development support as complementary dimensions of empowering leadership, which together influence work-related outcomes. However, leaders may use a range of autonomy-supportive and development-focused behaviours, either sequentially or in parallel, as part of their daily empowering leadership approach. Using complementary empowering strategies, leaders can adapt their behaviour to satisfy various employee needs and effectively influence employee work engagement. In the present study, we argue that daily leader development support will strengthen the association between daily leader autonomy support and basic psychological needs satisfaction and psychological empowerment.

To ensure that empowered employees can effectively handle increased responsibilities, leaders must develop employees' knowledge, skills, and self-leadership abilities (Amundsen & Martinsen, 2014). Simply delegating authority and decision-making rights without accounting for an employee's competence can actually result in increased

strain and poor performance (Cheong et al., 2016). Conger and Kanungo (1988), inspired by Bandura's (1986) theory of self-efficacy, considered empowerment a motivational process that enhances an individual's belief in their abilities to handle future situations. This sense of empowerment is strengthened when employees feel competent and confident in their task execution (Amundsen & Martinsen, 2014; Conger & Kanungo, 1988). Employees without the necessary skills may feel uncomfortable and reluctant to accept increased responsibilities (Forrester, 2000). To increase employees' perceptions of empowerment, leaders need to enhance their employees' knowledge, skills, and expertise (Forrester, 2000). Supporting this notion, Dysvik et al. (2013) found an interaction between satisfaction of the needs for competence and autonomy, with competence being essential to intrinsic motivation. Thus, the impact of daily leader development support on autonomy support will lead to a more profound and sustained sense of empowerment among employees, combining the freedom to make decisions and take initiative, with the skills and confidence to do so effectively.

When leaders allow employees greater control and freedom to regulate their actions in alignment with their personal values, they help satisfy the need for autonomy, which is pivotal in fostering intrinsic motivation and work engagement (Slemp et al., 2018). However, when autonomy is combined with and complemented by development support, satisfying the needs for competence and relatedness becomes more attainable. Leaders who delegate responsibility and decision-making power while developing employees through feedback, appropriate challenges, and skill development not only enhance autonomy but also boost employees' sense of competence. Furthermore, a sense of belonging is strengthened when employees perceive their leaders as invested in their professional growth and success, creating a more supportive work environment. On the days that leaders use a combination of autonomy-supportive and development-supportive behaviours, they encourage employee work engagement through the satisfaction of basic needs and employees' experiences of empowerment. More formally:

Hypothesis 3. Daily leader development support moderates the positive relationships of leader autonomy support with (a) satisfaction of basic psychological needs, and (b) psychological empowerment. These relationships are stronger when development support is high rather than low.

Hypothesis 4. Daily leader development support moderates the indirect relationship of daily leader autonomy support with daily work engagement

through (a) basic psychological needs satisfaction, and (b) psychological empowerment. These indirect relationships are stronger when development support is high (vs. low).

2. Method

2.1 Participants and procedure

A total of 86 Navy cadets from the Norwegian Naval Academy took part in the study. As part of their leadership development, the cadets sailed from Northern Europe to North America, crossing the North Sea and the Atlantic Ocean during fall 2015. The cadets were organized into teams of eight to nine members, with each cadet serving as the team leader for a three-day period before rotating. The cadets were asked to complete a daily survey immediately before dinner at 5 p.m. each day for the first 30 days of their 75-day voyage. This initial period was chosen as it provided the longest continuous stretch of the voyage, offering a high degree of complexity and requiring significant adaptation to an unfamiliar work setting. To evaluate their leadership experiences, cadets were asked to rate the leadership behaviour of their team leader each day. To facilitate a high response rate, team leaders were asked to remind their team to complete the daily survey. The response rate during the 30-day period was high, with an average daily rate of 78.4% – not unusual in this occupational context. The sample included 68 male (79.1%) and 18 female (20.9%) participants. The average age of the participants was 23.15 years ($SD = 2.56$).

2.2 Measures

All study variables were measured daily using adapted versions of validated scales. The items were modified to reflect daily behaviour, referring only to a specific day. The total number of items for each measure was reduced in line with recommendations to avoid survey fatigue (Ohly et al., 2010). All measures used the same 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Daily empowering leadership was measured using six items from the empowering leadership scale (Amundsen & Martinsen, 2014). The items were selected based on a combination of factor loadings and face validity for the study context. The scale comprises two sub-dimensions: autonomy and developmental support. An example item for autonomy support is “During the last 24 hours, my leader encouraged me to take initiative”, and for development support: “During the last 24 hours, my leader showed

me how I can improve my way of working”. The hierarchical omega at the within-person level (HW) revealed marginal reliability for autonomy support ($\omega = .66$), and good reliability for development support ($\omega = .79$).

Daily satisfaction of basic psychological needs for autonomy, competence, and relatedness was assessed using nine items from Van Den Broeck et al. (2010), with three items for each need. The items were selected based on a combination of factor loading and face validity. Example items are “Today, the tasks I have been doing are in line with what I really want” (autonomy satisfaction) “Today, I felt that I could accomplish even the most difficult tasks at work” (competence), and “Today, I felt that I was part of a group” (relatedness). Daily need satisfaction was treated as a higher-order factor. The within-person level reliability of the scale was satisfactory ($\omega = .72$).

Daily psychological empowerment was measured with six items from Spreitzer’s (1995), 12-item scale. The items covered all four subdimensions of meaning, competence, self-determination, and impact. Example items are “Today, the work I did was very important to me” (meaning), “Today, I was self-assured about my capabilities to perform my work activities” (competence), “Today, I could decide on my own how to go about doing my work” (self-determination), and “Today, my impact on what happens in my team was significant” (impact). The within-person level reliability was good ($\omega = .86$).

Daily work engagement was measured using the state version of the 9-item Utrecht Work Engagement Scale (Breevaart et al., 2012). Example items are “During today’s shift, I felt bursting with energy” (vigour), “During today’s shift, my job inspired me” (dedication), and “During today’s shift, I was immersed in my work” (absorption). The scale demonstrated good within-person level reliability ($\omega = .89$).

2.3 Strategy of analyses

We used R version 4.4.0 (R Core Team, 2024) with the psych package (Revelle, 2024) for descriptive statistics. The reliability of the general factor was assessed by estimating hierarchical omega at the within-person level (HW) using Mplus version 7.4 (Muthén et al., 1998). This approach accounts for the multidimensional nature of the scales (Zinbarg et al., 2005). Given the multilevel structure of the data with 30 daily measurements (Level 1; $N = 2022$ observations) nested within individuals (Level 2; $N = 86$ participants), we conducted multilevel path analysis using Mplus version 7.4 (Muthén et al., 1998). Due to low sample size, we limited the number of parameters using manifest aggregated scores at the within- and between-person levels. Consistent

with recommendations by Ohly et al. (2010), we centred the within-person level predictor variables on the person-mean and the between-person level predictor on the grand-mean. Since our study focuses on within-person relationships, this approach was used to remove between-person variance from the within-level analyses (Preacher et al., 2010).

To test our hypotheses, we estimated a multilevel model with parallel mediators at the within- and between-person level. The main predictors, autonomy support and development support, the mediators – psychological empowerment and basic psychological needs satisfaction – and the outcome, work engagement, were all modelled on the same day (d). Additionally, we included the interaction between autonomy support and development support as a predictor variable. Importantly, in our model, we also controlled for the previous day (d – 1) levels of the mediator and outcome variables at the within-person level. At both the within- and between-person levels, we allowed the leadership dimensions to covary with one another. Similarly, we permitted covariance between the mediators, psychological empowerment and basic need satisfaction. Additionally, we permitted the control variables (d – 1) for the mediators and the outcome to covary at the within-person level. We tested the significance of the indirect relationships between empowering leadership and work engagement by obtaining 95% confidence intervals for the indirect paths. In order to test the interaction effects, we conducted simple slope analyses, following the method described by Preacher et al. (2006). The slopes were tested at ± 1 standard deviation (SD) from the mean for the influence of development support on autonomy support. To explore potential lagged relationships of daily empowering leadership behaviours, we tested an alternative model where we positioned the predictors on the current day (d), and the mediators and outcome variables on the subsequent day (d + 1), while controlling for the mediator and outcome variables from the current day (d).

3. Results

3.1 Descriptive statistics

Means, standard deviations, and the within- and between-person correlations for all study variables are presented in Table 1. The results revealed statistically significant relationships among all study variables, both at the within- and at the between-person level. We calculated the intraclass correlation coefficient (ICC) for each study variable to assess the presence of sufficient between-cluster variability to support multilevel analysis (Preacher et al., 2010). The estimated ICC values were .21 for daily autonomy support, .42 for daily development support, .51 for daily basic psychological needs satisfaction, .35 for daily psychological empowerment, and .26 for daily work engagement. These values indicate substantial within-person variability, reflecting the dynamic and fluctuating nature of daily leadership behaviours and employee experiences.

3.2 Preliminary analyses

Prior to testing the hypothesized relationships, several Multilevel Confirmatory Factor Analysis (MCFA) were conducted to assess the discriminant validity of key study variables. First, to test whether empowering leadership and psychological empowerment were distinguishable constructs in our data, a six-factor model was estimated. Specifically, the two subdimensions of empowering leadership – autonomy support and development support – were each modelled as latent factors with their respective indicators. The meaning subdimension of psychological empowerment was also modelled as a latent factor with three observed indicators, while the remaining psychological empowerment subdimensions (impact, self-determination, competence) were modelled as single observed indicators. The model demonstrated an overall good fit to the data ($\chi^2 = 151.140$, $df = 84$, $RMSEA = 0.020$, $CFI = 0.983$, $TLI = 0.973$), with good fit at both the within-person level

Table 1. Means, standard deviation, and correlations for all study variables.

	M	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Autonomy Support	3.61	0.47		.44***	.35***	.48***	.12	.28**	.49***	.39***	.24*	.47***	.19	.43***
2. Development Support	3.00	0.47	.26***		.25*	.30**	.09	.22*	.51***	.46***	.31**	.29**	.16	.36***
3. Basic Psychological Needs Satisfaction	3.76	0.31	.20***	.11***		.78***	.78***	.77***	.55***	.33**	.21*	.42***	.72***	.57***
4. Need for Autonomy	3.77	0.44	.15***	.06**	.69***		.47***	.47***	.59***	.49***	.13	.38***	.44***	.67***
5. Need for Competence	3.68	0.53	.13***	.05*	.73***	.18***		.30**	.26*	-.03	.12	.29**	.90***	.31**
6. Need for Relatedness	3.83	0.37	.15***	.14***	.66***	.30***	.20***		.49***	.39***	.25*	.32**	.30**	.43***
7. Psychological Empowerment	3.31	0.41	.19***	.11***	.47***	.42***	.26***	.31***		.90***	.49***	.61***	.30**	.73***
8. Perceived Meaning	3.21	0.59	.13***	.09***	.32***	.39***	.06**	.25***	.87***		.29**	.36***	-.04	.67***
9. Perceived Impact	3.15	0.66	.13***	.10***	.28***	.18***	.17***	.25***	.57***	.28***		.17	.15	.26*
10. Perceived Self-Determination	3.25	0.66	.13***	.08***	.24***	.18***	.18***	.14***	.52***	.21***	.26***		.35***	.40***
11. Perceived Competence	3.82	0.56	.10***	.00	.42***	.16***	.52***	.12***	.29***	.00	.10***	.11***		.31**
12. Work Engagement	3.29	0.51	.15***	.08***	.36***	.41***	.14***	.22***	.47***	.50***	.20***	.14***	.07**	

Note. $N = 86$ participants, 30 days, and $N = 2022$ observations. Correlations below the diagonal are level 1 within (day) correlations, and correlations above the diagonal are level 2 between (person) correlations.

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

(SRMR^{within} = 0.032) and the between-person level (SRMR^{between} = 0.045). All factor loadings were acceptable, ranging from 0.42 to 0.85 at the within-person level and from 0.76 to 1 at the between-person level. At the within-person level, the latent constructs showed a positive significant inter-correlation ranging from 0.10 to 0.31. The observed indicators were significantly correlated with the latent constructs (0.08–0.30), except for the competence indicator, which did not significantly correlate with development support or meaning. The model was then compared to a one-factor model where all indicators were loaded on a single factor at the within- and between-person level. The one-factor model yielded an unacceptable fit to the data ($\chi^2 = 2030.690$, $df = 108$, $RMSEA = 0.094$, $CFI = 0.501$, $TLI = 0.390$), with a poor fit at both the within-person level (SRMR^{within} = 0.126) and the between-person level (SRMR^{between} = 0.175), indicating that the three-factor model provided a better fit to the data. Overall, the results suggest that the two empowering leadership dimensions are empirically distinct from psychological empowerment.

Given the potential conceptual overlap between basic psychological needs satisfaction and psychological empowerment, a second set of measurement models was tested. In the first model, the subdimensions of basic psychological needs satisfaction (autonomy, competence, relatedness) were each modelled as latent constructs using their respective observed indicators. For psychological empowerment, the meaning subdimension was represented by its three observed indicators, while the remaining subdimensions (impact, self-determination, competence) were modelled as single observed indicators. The model demonstrated an overall acceptable to somewhat poor fit to the data ($\chi^2 = 846.106$, $df = 150$, $RMSEA = 0.048$, $CFI = 0.867$, $TLI = 0.814$), with acceptable fit at the within-person level (SRMR^{within} = 0.071) but poor fit at the between-person level (SRMR^{between} = 0.144). At the within-person level, factor loadings were generally acceptable, ranging from 0.46 to 0.83, except for autonomy, which had two factors with loadings below 0.45 (0.31 and 0.38). At the between-person level, factor loadings were acceptable, ranging from 0.42 to 0.96. Within-person correlations among the latent constructs for basic psychological needs were significant and positive, ranging from 0.26 to 0.58. Perceived meaning correlated significantly with the basic needs for relatedness (0.28) and autonomy (0.68), but not with competence. The remaining psychological empowerment indicators (impact, self-determination, competence) were all significantly and positively correlated with the latent construct, ranging from 0.10 to 0.24. Finally, the model was compared to

a one-factor model in which all indicators loaded onto a single factor at both the within- and between-person level. The alternative model demonstrated a poor fit to the data ($\chi^2 = 2751.652$, $df = 180$, $RMSEA = 0.084$, $CFI = 0.510$, $TLI = 0.428$), with a poor fit at the within-person level (SRMR^{within} = 0.121) and the between-person level (SRMR^{between} = 0.250). Taken together, these findings indicate that basic psychological needs satisfaction and psychological empowerment are empirically distinct constructs and can be reliably distinguished at the within-person level of analysis.

To further evaluate the discriminant validity of the key constructs as represented in the structural model, we tested three additional models. First, we estimated a four-factor model that included autonomy support, development support, psychological empowerment, and basic needs satisfaction ($\chi^2 = 1159.754$, $df = 168$, $RMSEA = 0.054$, $CFI = 0.813$, $TLI = 0.767$, SRMR^{within} = 0.072, SRMR^{between} = 0.141). Then we tested a three-factor model where psychological empowerment and basic needs satisfaction were collapsed into a single factor, while autonomy support and development support were retained as separate factors ($\chi^2 = 1335.192$, $df = 174$, $RMSEA = 0.057$, $CFI = 0.781$, $TLI = 0.736$, SRMR^{within} = 0.077, SRMR^{between} = 0.147). Finally, we assessed a two-factor model, combining autonomy support, development support, and psychological empowerment into a single factor, while retaining basic needs satisfaction as the second factor data ($\chi^2 = 2940.037$, $df = 178$, $RMSEA = 0.088$, $CFI = 0.480$, $TLI = 0.386$, SRMR^{within} = 0.118, SRMR^{between} = 0.187). The results show that the four-factor model demonstrated the best overall fit to the data. The significant increase in chi-square values between the four-factor model and the three-factor model ($\Delta\chi^2 = 175.438$, $\Delta df = 6$, $p < .001$), as well as the four-factor model and two-factor model ($\Delta\chi^2 = 1780.283$, $\Delta df = 10$, $p < .001$), further support that autonomy support, development support, psychological empowerment, and basic needs satisfaction are empirically distinct constructs. A summary of the results is presented in Table 2.

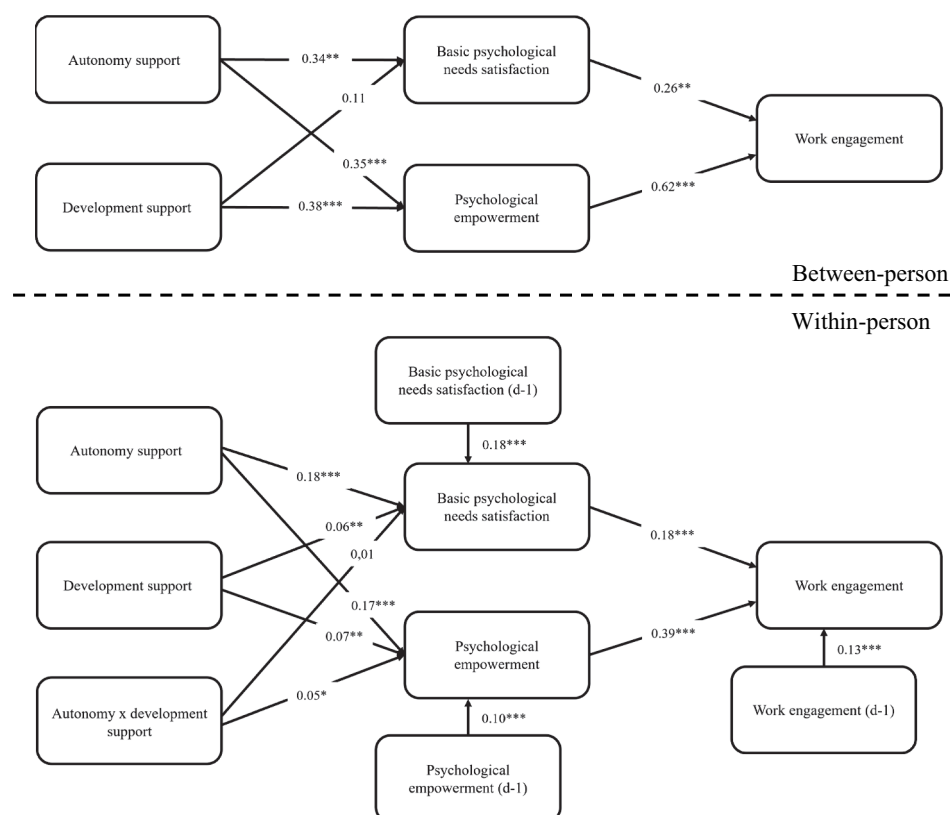
3.3 Hypothesis testing

The hypothesized model (see Figure 1), which included all study variables, showed a good overall fit to the data ($\chi^2 = 102.793$, $df = 30$, $CFI = 0.974$, $TLI = 0.955$, $RMSEA = 0.035$), with a good fit at the within-person level (SRMR^{within} = 0.030) and a marginal fit at the between-person level (SRMR^{between} = 0.088). The relationships between the study variables, including standardized

Table 2. Summary of multilevel confirmatory factor analyses results.

Model	Factors	χ^2	df	CFI	TLI	RMSEA	SRMR-within	SRMR-between
6-factor	AS; DS; 4 PE subdimensions*	151.140	84	0.983	0.973	0.020	0.032	0.045
1-factor	AS + DS + PE combined	2030.690	108	0.501	0.390	0.094	0.126	0.175
7-factor	3 BNS subdimensions**; 4 PE subdimensions	846.106	150	0.867	0.814	0.048	0.071	0.144
1-factor	BNS + PE combined	2751.652	180	0.510	0.428	0.084	0.121	0.250
4-factor	AS; DS; PE; BNS	1159.754	168	0.813	0.767	0.054	0.072	0.141
3-factor	AS; DS; PE + BNS combined	1335.192	174	0.781	0.736	0.057	0.077	0.147
2-factor	AS + DS + PE combined; BNS	2940.037	178	0.480	0.386	0.088	0.118	0.187

Note. AS = autonomy support, DS = development support, PE = psychological empowerment, BNS = basic needs satisfaction, *meaning, competence, self-determination, and impact, **autonomy, competence, and relatedness.

**Figure 1.** Parameter estimates in the hypothesized multilevel model. Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

estimates for the complete model, are shown in Figure 1, while the indirect effect estimates with confidence intervals are presented in Table 3.

Hypothesis 1 stated that daily leader autonomy support and development support are positively related to daily work engagement, mediated by the satisfaction of basic psychological needs. Results from multilevel path analysis supported this, indicating that (a) leader autonomy support ($\beta = .032$, $p < .001$) and (b) leader development support ($\beta = .010$, $p = .013$) were each uniquely and positively related to work engagement through basic needs satisfaction. Thus, Hypothesis 1 was supported.

In Hypothesis 2, we proposed that psychological empowerment would mediate the indirect relationship between daily leader (a) autonomy support, (b) development support, and daily work engagement. The results showed that psychological empowerment mediated the positive relationships of daily leader autonomy support ($\beta = .064$, $p < .001$) and development support ($\beta = .025$, $p = .004$) with work engagement. Thus, Hypothesis 2 was also supported.

In Hypothesis 3, we predicted that daily leader development support would moderate the positive relationship between daily leader autonomy support and (a) satisfaction of basic psychological needs and (b) psychological

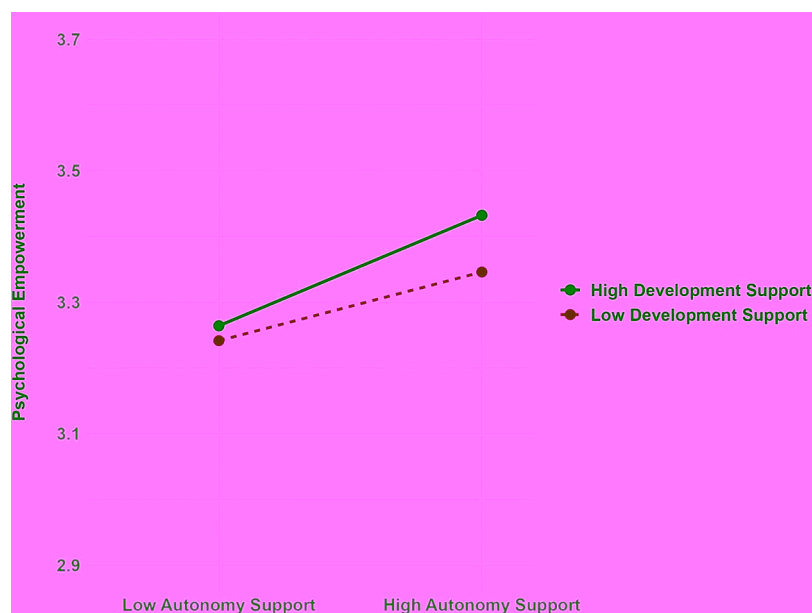
Table 3. Hypothesized model: maximum likelihood parameter estimates, standard errors, and confidence intervals for indirect effects.

Indirect effect $x \rightarrow m \rightarrow y$	Standardized			95% CI	
	Est.	SE	p	Lower	Upper
Autonomy Support $\rightarrow$ Work Engagement					
Total indirect	.096	.012	<.001	.074	.119
Autonomy Support $\rightarrow$ Basic Psychological Needs Satisfaction $\rightarrow$ Work Engagement	.032	.006	<.001	.021	.043
Autonomy Support $\rightarrow$ Psychological Empowerment $\rightarrow$ Work Engagement	.064	.009	<.001	.046	.083
Development Support $\rightarrow$ Work Engagement					
Total indirect	.036	.011	.001	.014	.057
Development Support $\rightarrow$ Basic Psychological Needs Satisfaction $\rightarrow$ Work Engagement	.010	.004	.013	.002	.019
Development Support $\rightarrow$ Psychological Empowerment $\rightarrow$ Work Engagement	.025	.009	.004	.008	.043
Autonomy Support*Development Support $\rightarrow$ Work Engagement					
Total indirect	.021	.011	.058	-.001	.043
Autonomy Support*Development Support $\rightarrow$ Basic Psychological Needs Satisfaction $\rightarrow$ Work Engagement	.002	.004	.533	-.005	.010
Autonomy Support*Development Support $\rightarrow$ Psychological Empowerment $\rightarrow$ Work Engagement	.018	.009	.035	.001	.036

empowerment. We anticipated that these relationships would be stronger when development support was high (vs. low). Our analysis indicated that the interaction between development support and autonomy support did not predict satisfaction of basic psychological needs ($\beta = .014$, $p = .532$), which means that Hypothesis 3a was not supported. However, as predicted, the interaction term of daily leader development support and daily leader autonomy support was a significant predictor of psychological empowerment ($\beta = .048$, $p = .033$). Simple slope analyses at ± 1 standard deviation revealed a stronger positive relationship between daily leader autonomy support and psychological empowerment when leaders provided high (vs. low) development support. Specifically, Figure 2 shows a more positive slope for participants reporting high (slope = .18, $z = 6.516$, $p < .001$) than low (slope = .11, $z = 4.788$, $p < .001$) daily leader development support. Consequently, Hypothesis 3b was supported.

In Hypothesis 4, we postulated that daily leader development support would moderate the indirect relationship between daily leader autonomy support and daily work engagement, mediated by (a) basic psychological needs satisfaction, and (b) psychological empowerment. We anticipated that these indirect relationships would be stronger when levels of development support were high rather than low. The results showed that the interaction between daily leader development support and daily leader autonomy support was not significantly related to work engagement through basic psychological needs satisfaction ($\beta = .002$, $p = .533$). Thus, Hypothesis 4a was not supported.

Finally, Hypothesis 4b stated that daily leader autonomy support would be most strongly related to daily work engagement through psychological empowerment on days when leaders also provided development support. We hypothesized that this relationship would

**Figure 2.** Interaction effect between daily leader autonomy support and development support on followers' daily psychological empowerment.

be more pronounced when development support was high rather than low. The results revealed a significant moderated mediation mechanism, as the interaction term of daily leader development support and daily leader autonomy support was positively related to work engagement through psychological empowerment ($\beta = .018, p = .035$). Furthermore, testing conditional indirect effects at ± 1 standard deviation revealed that the indirect relationship between daily leader autonomy support and work engagement was indeed somewhat stronger when the levels of development support were high ($B = .087, p < .001$) rather than low ($B = .054, p < .001$). This means that although the moderated indirect relationships were relatively small, Hypothesis 4b was supported.

3.4 Supplementary analyses

The consequences of leadership may manifest both immediately and over time. In a daily diary study, Schilpzand et al. (2018) demonstrated that empowering leadership can enhance followers' proactive behaviour by encouraging next-day proactive goal-setting. Similarly, the extended autonomy and increased competence provided by empowering leaders may foster a more enduring motivational state, sustaining followers' work engagement over time. Additionally, the positive social interactions and experiences employees have with empowering leaders may enhance their sense of relatedness beyond the immediate, same-day relationship. Anticipating that empowering leader behaviour may have a carryover effect on next-day motivation, we conducted an additional analysis.

The alternative model, with mediators and outcome variables positioned on the next day, showed a reasonable overall fit to the data ($\chi^2 = 210.829, df = 31, CFI = 0.935, TLI = 0.892, RMSEA = 0.054$), with an acceptable fit at the within-person level ($SRMR^{\text{within}} = 0.059$) and a poor fit at the between-person level

($SRMR^{\text{between}} = 0.091$). Table 4 presents the indirect effect estimates with confidence intervals. The results revealed that empowering leadership behaviours were *unrelated* to next-day work engagement through basic psychological needs satisfaction, indicating no carryover effect for either autonomy support ($\beta = .008, p = .066$), or development support ($\beta = .008, p = .060$). However, autonomy support was related to next-day work engagement through psychological empowerment ($\beta = .027, p = .005$), while a similar relationship was not observed for development support ($\beta = .011, p = .236$).

Moreover, the analysis indicated that the interaction between development support and autonomy support did not predict next-day satisfaction of basic psychological needs ($\beta = .011, p = .670$). However, the interaction term of daily leader development support and daily leader autonomy support was a significant predictor of next-day psychological empowerment ($\beta = .073, p = .004$). Simple slope analyses at ± 1 standard deviation showed that the positive effect of daily leader autonomy support on next-day psychological empowerment was stronger when leaders provided higher levels of development support. Specifically, Figure 3 shows a significant positive slope for participants reporting high leader development support (slope = .11, $z = 3.670, p < .001$) and a nonsignificant slope for participants reporting low levels of leader development support (slope = .01, $z = .329, p = .742$).

Additionally, development support from leaders moderated the relationship between autonomy support and next-day work engagement via psychological empowerment ($\beta = .028, p = .005$). To test under what conditions daily leader development moderates the indirect relationship between autonomy support and work engagement through psychological empowerment, we tested the conditional indirect paths at ± 1 standard deviation for development support (high versus low). Results revealed that the indirect path of daily leader autonomy support on work engagement through next-day psychological empowerment was only significant when development

Table 4. Alternative model: maximum likelihood parameter estimates, standard errors, and confidence intervals for indirect effects.

Indirect effect $x \rightarrow m \rightarrow y$	Standardized			95% CI	
	Est.	SE	p	Lower	Upper
Autonomy Support $\rightarrow$ Work Engagement (d + 1)					
Total indirect	.035	.012	.004	.011	.058
Autonomy Support $\rightarrow$ Basic Psychological Needs Satisfaction (d + 1) $\rightarrow$ Work Engagement (d + 1)	.008	.004	.066	-.001	.017
Autonomy Support $\rightarrow$ Psychological Empowerment (d + 1) $\rightarrow$ Work Engagement (d + 1)	.027	.009	.005	.008	.045
Development Support $\rightarrow$ Work Engagement (d + 1)					
Total indirect	.019	.012	.106	-.004	.042
Development Support $\rightarrow$ Basic Psychological Needs Satisfaction (d + 1) $\rightarrow$ Work Engagement (d + 1)	.008	.004	.060	.000	.016
Development Support $\rightarrow$ Psychological Empowerment (d + 1) $\rightarrow$ Work Engagement (d + 1)	.011	.009	.236	-.007	.029
Autonomy Support*Development Support $\rightarrow$ Work Engagement (d + 1)					
Total indirect	.030	.013	.018	.005	.054
Autonomy Support*Development Support $\rightarrow$ Basic Psychological Needs Satisfaction (d + 1) $\rightarrow$ Work Engagement (d + 1)	.002	.004	.671	-.007	.011
Autonomy Support*Development Support $\rightarrow$ Psychological Empowerment (d + 1) $\rightarrow$ Work Engagement (d + 1)	.028	.010	.005	.008	.047

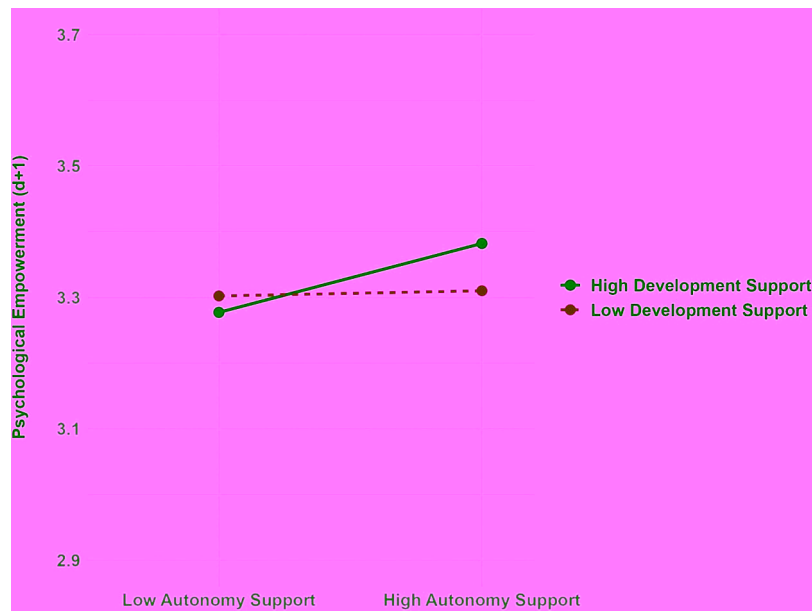


Figure 3. Interaction effect between daily leader autonomy support and development support on followers' next-day psychological empowerment.

support was high ($B = .054, p < .001$), and not when development support was low ($B = .004, p = .735$). The leader development support $\times$ autonomy support interaction effect on next-day work engagement did not occur through next-day basic psychological needs satisfaction ($\beta = .002, p = .671$).

Since individuals from the same team are exposed to common influences such as a shared leader, daily tasks, routines, and climate, some non-independence can be expected. To account for the effects of differences between teams, we conducted two additional analyses. First, we estimated the proportion of variance due to team membership by calculating the ICC for the mediators and the outcome variables. The team-level ICCs were negligible for psychological empowerment (.02) and work engagement (.003), and low for basic needs satisfaction (.06), indicating that team membership explains only a very small portion of the total variance. Next, to directly assess the potential impact on our results, we included team membership as a control variable at the between-person level. The results showed that team membership did not significantly alter the parameter estimates at the within-person level, suggesting that our findings are robust to possible team-level effects.

Finally, to investigate how the different basic psychological needs functioned individually in our model, we estimated a model with manifested aggregated scores, where the basic needs were modelled as parallel mediators, excluding psychological empowerment. The model showed an acceptable fit to the data ($\chi^2 = 142.226, df = 41, CFI = 0.954, TLI = 0.916, RMSEA =$

0.035), with a good fit at the within-person level ($SRMR^{within} = 0.029$) and a poor fit at the between-person level ($SRMR^{between} = 0.111$). Results revealed that daily autonomy support was significant and positively related to work engagement through the satisfaction of the need for autonomy ($\beta = .050, p < .001$), competence ($\beta = .006, p = .015$), and relatedness ($\beta = .012, p < .001$). Daily development support was significant and positively related to work engagement through the satisfaction of the need for relatedness ($\beta = .009, p = .002$), but not through competence ($\beta = .001, p = .411$) or autonomy ($\beta = .008, p = .318$). The interaction term development support $\times$ autonomy support did not have a significant relationship with work engagement through any of the separate psychological needs.

4. Discussion

A primary objective of empowering leadership is to enable and motivate followers to be proactive and work independently (Kim, Beehr, & Prewett, 2018). Building on existing research, this study captures the daily dynamics of empowering leadership and provides insights into how empowering leadership is related to employees' everyday experiences. Psychological empowerment has been identified as the principal motivational process resulting from leader empowerment practices (Cheong et al., 2019; Spreitzer, 1995). However, drawing on self-determination theory, which also highlights the importance of followers' self-directed behaviour, this study indicates that daily empowering

leadership is related to employees' daily satisfaction of basic psychological needs, as well as employees' daily perceptions of being empowered. In turn, each of these psychological states is distinctly related to work engagement. Moreover, our study indicates that on days when leaders support employees' development, employees take greater advantage of delegated responsibility and autonomy, resulting in a heightened sense of empowerment and increased work engagement. This interaction effect extended into next-day perceptions of empowerment and work engagement. Contrary to our hypothesis, the anticipated moderating effect of development support was not evident in the relationship between daily leader autonomy-supportive behaviour and basic psychological needs satisfaction. Below, we discuss these findings in more detail.

4.1 Theoretical contributions

This study makes several contributions to the literature. First, by examining daily fluctuations, this study demonstrates how daily empowering leader behaviours in operational settings are linked to day-to-day variations in followers' work engagement via satisfaction of basic psychological needs and an increased sense of psychological empowerment. Research exploring the daily dynamics of leadership has been rapidly increasing in recent years (Kelemen et al., 2020), adding to the literature as within-person effects are fundamentally different from between-person effects both statistically and conceptually (Hamaker et al., 2015). In a similar study involving 57 naval cadets, Bakker et al. (2023) found that on days when leaders practice transformational leadership behaviours, they stimulate followers' strengths use and personal initiative, which subsequently increases followers' work engagement. However, studies specifically investigating the effects of daily empowering leadership behaviours on followers' thoughts, feelings, and behaviour remain scarce (Kelemen et al., 2020). To our knowledge, only a few studies (Kwan et al., 2024; Li et al., 2024; Schilpzand et al., 2018; Tang et al., 2020) have examined followers' perceived empowering leadership behaviour as practiced by their leaders using a daily diary design. The complexities and rapid changes of the modern workplace require employees to constantly adapt to shifting demands, highlighting the importance of understanding the short-term processes of leadership, individual outcomes, and organizational performance. Such understanding is particularly important in the military, as the operating environment in military settings is often chaotic and fast-changing. A key objective of empowering leadership is to ensure that employees possess the necessary autonomy, motivation, and knowledge to

proactively respond to and act on emerging opportunities, as well as to address problems as they arise. Therefore, a deeper and more nuanced understanding of the short-term consequences is useful to advance empowering leadership research and practice. Our findings concerning daily fluctuations and processes of empowering leader behaviour are in line with previous findings by Schilpzand et al. (2018), who found that daily empowering leadership is related to followers' proactive behaviours.

Second, the study enhances our understanding of how leadership is related to work engagement. Identifying and clarifying these mediating processes is important in organizational science because it helps us explain the underlying mechanisms that connect predictor variables with outcomes (Cheung & Lau, 2008). Finding empirical evidence for the parallel mediating roles of daily basic psychological needs satisfaction and psychological empowerment enriches the literature, as we were able to discern the unique contributions of each theoretical perspective as explanatory mechanisms in the relationship between empowering leadership and work engagement. This demonstrates, as expected, that the perspectives are somewhat overlapping yet complementary in explaining and enhancing employee work engagement. While previous research has demonstrated that basic psychological needs satisfaction mediates the effect of various leadership styles, such as transformational leadership (Kovjanic et al., 2013), servant leadership (Chiniara & Bentein, 2016), and autonomy-supportive leadership (Slemp et al., 2018) on work-related outcomes, research exploring the relationship between empowering leadership and basic psychological needs satisfaction is somewhat limited (Kim & Beehr, 2020; O'Donoghue & van der Werff, 2022). Moreover, empirical findings have shown some inconsistencies regarding the mediating role of psychological empowerment (Lee et al., 2018). In our study, psychological empowerment emerged as the primary mediator in the relationship between daily empowering leadership and work engagement. This finding supports the notion that empowering leadership achieves its intended effect when followers experience a state of psychological empowerment (Zhang & Bartol, 2010). Together, these findings align with previous studies and confirm the mediating role of psychological empowerment between empowering leadership and positive work outcomes in general (Lee et al., 2018), and work engagement in particular (Monje-Amor et al., 2021), and further demonstrate that these relationships also operate on a day-to-day basis. The additional contribution and mediating role of daily basic psychological needs satisfaction enhance our understanding of empowerment,

suggesting that the concept of psychological empowerment alone may not fully capture the intrinsic motivational state stimulated by empowering leadership. As such, our study indicates that, although psychological empowerment emerged as the primary mediator, the two theoretical frameworks complement each other and provide a more comprehensive understanding of the underlying mechanisms.

Third, our study provides theoretical insight into the relationship and interaction between specific leader behaviours. Specifically, we found that leader behaviours intended to increase followers' competence and self-leadership moderated the relationship between autonomy-supportive practices and followers' sense of psychological empowerment. This corresponds with Yukl's (2013) recommendations to investigate the interactions between behaviours with interrelated effects for a deeper understanding of the effectiveness of specific leader behaviours. Although the interaction effect was small, our findings shed light on how key dimensions of empowering leadership, autonomy support and development support, interact to enhance psychological empowerment. This insight broadens our understanding of the empowerment concept and underscores the importance of followers' sense of competence as a prerequisite to fully leveraging increased autonomy. Delegating important tasks will not be perceived as empowering if followers lack the necessary skills and knowledge to complete the task successfully and are concerned about failing (Yukl, 2013). Notably, a study by Cheong et al. (2016) applying a cost of autonomy and role theory perspective revealed that while empowering leadership boosts followers' self-efficacy, it is also associated with increased stress due to heightened responsibility and role stress, ultimately negatively influencing work performance. Therefore, empowering leaders should provide followers with adequate development opportunities, necessary support, and resources to prevent negative outcomes associated with increased autonomy and reinforce the motivational process of feeling empowered through a sense of competence and skilful action (Cheong et al., 2016; Lee et al., 2018).

Finally, in our supplementary analysis, we explored the relationship between empowering leadership dimensions and work engagement through each basic psychological need. We found that daily autonomy support was linked to work engagement through all three needs, emphasizing the broad motivational role of leader autonomy support (Slemp et al., 2018). In contrast, development support was only related to work engagement through the satisfaction of the need for relatedness, supporting the notion that when leaders show concern for followers' development, it promotes satisfaction of the need for relatedness (Kuvaas &

Dysvik, 2009). These results indicate that empowering leadership dimensions contribute to basic need satisfaction in distinct ways, offering a more nuanced understanding of their relationship with work engagement. Another notable finding is the lower correlations between satisfaction of the psychological needs for autonomy, competence, and relatedness at the daily level compared to the between-person level (see Table 1). Basic psychological needs are context-responsive constructs, and their satisfaction (or thwarting) should vary as a function of contextual changes and perceptions of the social environment (Vansteenkiste et al., 2020). Daily assessments encourage participants to focus on specific, context-driven experiences, likely capturing the nuances of how different needs are satisfied. In contrast, cross-sectional designs may inflate correlations as participants reflect on their generalized or average experiences (Podsakoff et al., 2012; Robinson & Clore, 2002). Reduced correlations suggest that diary studies can better disentangle the unique contribution of each need in the motivational process, pointing to the value of using diary studies to advance research in the domain of self-determination.

4.2 Limitations

Despite a strong research design, this study has limitations that should be considered when interpreting the results. First, except for daily empowering leadership, which was rated by the leader's team members, all study variables were measured daily at the same point in time and relied on self-rated data, increasing the likelihood of inflated correlations and common method variance (Podsakoff et al., 2003). In line with recommendations by Gabriel et al. (2019), to reduce the likelihood of a biased estimate of the within-person (Level 1) regression coefficient, Level 1 predictor variables were centred on the person's mean. Evans (1985) extensive Monte Carlo simulation demonstrated that common method inflation does not produce artificial interactions. Despite strong theoretical grounds supporting the notion that empowering leadership leads to various positive individual outcomes, the opposite direction of effects is also possible. Employees who are highly engaged and active in their work could be viewed favourably by their leader and be granted more autonomy and support as a result. Consequently, this could lead employees to perceive their leader as more empowering. Future research could benefit from separating the measurement of the predictor and criterion variables in time or using methodological separation (Lee et al., 2018; Podsakoff et al., 2003).

Second, this study, conducted with a military sample with naval cadets from Western culture in the unique context of being on board a ship, may not be

directly generalized to other occupational groups, cultures, or settings. A possible limitation is that cadets undergo a selection process, potentially favouring individuals with certain abilities and personality traits (Hystad et al., 2011), which could influence their receptiveness to empowering leadership and, in turn, shape follower attitudes and behaviour (Oc et al., 2023; Yun et al., 2006). For instance, a proactive personality has been found to moderate the relationship between empowering leadership behaviour and employee self-determination; specifically, when proactive personality was high, empowering leadership behaviour was more strongly related to employees' self-determination (Xiang et al., 2021). Moreover, followers from different cultures might perceive an empowering leadership style differently, thus influencing its effectiveness on individual outcomes (House et al., 2004). For example, Raub and Robert (2013) found that the effects of empowering leadership on psychological empowerment – as well as the link between psychological empowerment and organizational commitment and voice behaviour – were substantially lower for employees from high power distance cultures than those from low power distance cultures. While rotating team leadership helps isolate the effects of leadership behaviours from leader-specific factors, such as relationship quality (Gottfredson & Aguinis, 2017) and the leader's personality (Oh & Berry, 2009), it may limit generalizability of our findings to more traditional organizational settings where leaders are more permanent and often more experienced than their team members. Future research should attempt to replicate findings in more stable organizational settings.

Finally, daily diary designs come with certain constraints. One significant challenge is the potential for respondent fatigue, which can lead to a high number of missing responses and affect the quality and accuracy of the data collected. To mitigate this issue, validated measurement scales were designed with a reduced number of items, keeping the total number of items per day at a reasonable level. However, shorter measurement scales may have lower reliability than longer versions, as they capture less of the variability in the true underlying construct and have reduced shared variance as a result of fewer items (Yang et al., 2022). This can result in smaller effect sizes, which, in turn, reduce statistical power and can potentially explain non-significant findings (Yang et al., 2022). Future research could employ more comprehensive measurement scales to capture daily empowering leadership behaviour and psychological empowerment, in order to further investigate the relationships between the different empowering behaviours and their outcomes.

4.3 Practical implications

This study offers valuable insights for practitioners that can inform leadership training, employee development programs, and daily leadership practices. First, the study underscores the importance of empowering leadership, particularly in complex and dynamic environments where intrinsically motivated and empowered employees provide a strategic and competitive advantage. To achieve this, organizations should integrate training modules that focus on self-determination theory and psychological empowerment into their leadership development programs, as both offer unique perspectives on the relationship with work engagement. Additionally, these programs should emphasize the practical application of autonomy- and development support, teaching leaders to effectively balance these elements to maximize employee motivation and performance.

Second, the findings highlight the critical role of developing followers' knowledge, skills, and self-leadership capabilities in conjunction with autonomy support to increase followers' sense of psychological empowerment. Leaders and organizations should focus on employees' competence. At the individual level, leaders should actively create opportunities for employee skill development and professional growth, including providing constructive feedback and guidance to enhance followers' self-efficacy and competence. At the organizational level, organizations can implement mentorship programs where more experienced employees guide less experienced ones to facilitate learning and practical skill development to build a culture of empowerment and continuous learning. Organizations should also invest in training programs that offer access to relevant courses and workshops, in line with individual career plans. By deliberately implementing these strategies, organizations can better support employees' professional development and ensure that they are equipped to handle the responsibilities that come with increased autonomy.

5. Conclusion

Our study demonstrates that daily empowering leadership behaviours, characterized by autonomy- and development support, are associated with followers' daily work engagement. When leaders share power and provide their followers with autonomy, motivational support, and development opportunities, they satisfy followers' basic psychological needs and enhance their perceptions of being empowered. Furthermore, leaders who provide resources, guidance, and growth opportunities, strengthen the positive association between

autonomy-supportive behaviour and followers' sense of psychological empowerment, thereby improving intrinsic motivation. In today's complex and rapidly changing environment, having intrinsically motivated and empowered employees is crucial, as it equips organizations with individuals who work autonomously, take initiative, and act in the best interest of the organization

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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Data availability statement

Due to Norwegian Armed Forces data policies the data cannot be made available in a public repository but will be made available to all colleagues upon reasonable request to the corresponding author.

Data transparency appendix

The data used in this manuscript has been previously used. Specifically, the data variable work engagement has been used in a previous manuscript exploring the relationship between strengths use, positive affect, and work engagement, and the moderating role of employees' personality (Bakker et al., 2019).

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