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► To cite this version:

Nicolas Gillet, Alexandre J S Morin, Isabelle Huart, Mathieu Fiolet, Evelyne Fouquereau, et al.. Nature, predictors, and outcomes of the psychological capital trajectories observed among upcoming police officers' undergoing vocational training. *Journal of Vocational Behavior*, 2024, 155, pp.104058. 10.1016/j.jvb.2024.104058 . hal-04714055

HAL Id: hal-04714055

<https://hal.science/hal-04714055v1>

Submitted on 30 Sep 2024

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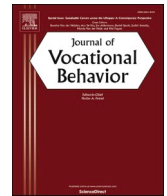
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Journal of Vocational Behavior

journal homepage: www.elsevier.com/locate/jvb

Nature, predictors, and outcomes of the psychological capital trajectories observed among upcoming police officers' undergoing vocational training

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ARTICLE INFO

Keywords:

Psychological capital

Trajectories

Profiles

Growth mixture modeling (GMM)

Leader-member exchange (LMX)

Perceived organizational support

Engagement

Ill-being

Performance

ABSTRACT

This study seeks to achieve a dynamic person-centered understanding of the nature of the psychological capital trajectories observed among upcoming police officers undergoing vocational training. Moreover, it seeks to document the predictive role of leader-member exchange and perceived organizational support in relation to these psychological capital trajectories, as well as the implications of these trajectories for a variety of outcomes related to trainees' attitudes (i.e., organizational cynicism, identification with the organization, engagement in the training program, and satisfaction toward the training program), psychological health (i.e., perceived stress), and behaviors (i.e., performance in the training program). A sample of 1200 participants undergoing a 33-week full-time vocational training program to become police officers were surveyed four times over a period of five months and a half. Results revealed that psychological capital trajectories corresponded to five primary profiles: Learning to Hate, High Fit, Moderate Fit, Honeymoon-Hangover, and Low Fit. Perceived leader-member exchange and organizational support were associated with these trajectories in a way that mainly supported our expectations. Trajectories characterized by lower levels of psychological capital were associated with higher levels of cynicism and stress, and with lower levels of engagement, identification, performance, and satisfaction. Conversely, trajectories characterized by higher levels of psychological capital were associated with the most positive outcomes.

Defined as a psychological resource encompassing the experience of hope, resilience, optimism, and efficacy (Luthans & Youssef, 2004), psychological capital represents a key driver of well-being, performance, and positive functioning (e.g., Avey et al., 2011; Wu & Nguyen, 2019) among diverse types of employees, including police officers (Siu et al., 2015; Walumbwa et al., 2010). In light of these

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<https://doi.org/10.1016/j.jvb.2024.104058>

Received 1 February 2024; Received in revised form 11 September 2024; Accepted 19 September 2024

Available online 24 September 2024

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benefits, this study seeks to achieve a clearer understanding of the evolution of psychological capital as it first starts to emerge among upcoming police officers as they complete a vocational training program leading directly into the workforce, as well as the likely drivers of psychological capital trajectories falling under the control of organizations and trainers.

Although psychological capital is a dynamic process known to fluctuate over time (Avey et al., 2010; Peterson et al., 2011) in a way that differs across individuals (Luthans & Youssef-Morgan, 2017), only a handful of studies have adopted a methodological approach able to account for this person-centered dynamic nature. The ability to identify the psychosocial mechanisms through which individuals' psychological capital changes over time and the theoretical and empirical implications of these changes require a longitudinal perspective. Yet, longitudinal investigations of psychological capital remain scarce (e.g., Alessandri et al., 2018; Mei et al., 2022), leaving room for speculation and limiting the guidance than can be grasped from current psychological capital research. The present study longitudinally addresses this important limitation via the adoption of methodologically inductive growth mixture analyses (Morin et al., 2018; Morin & Litalien, 2019), which are specifically designed to help identify the different types (or profiles) of psychological capital trajectories most commonly observed among any sample of participants followed over time. Observing changes over time in these trajectories would indicate that this type of psychological resources may be reactive to training-related factors (Luthans et al., 2015). Interventions seeking to improve psychological capital early in career, as early as within vocational training, could then be considered. Conversely, observing trajectories displaying little growth or decline may indicate that interventions might not be a priority in early career stages, but that particular attention could be paid to recruitment of trainees already displaying high levels of psychological capital. This is especially true if psychological capital levels are found to be well-differentiated at the start of training.

To understand the drivers and implications of these trajectories, we also consider their dynamic time-structured associations (i.e., whether associations change or remain stable over time) with a series of theoretical predictors (i.e., perceived organizational support and leader-member exchange: LMX) and outcomes related to trainees' attitudes (i.e., organizational cynicism, identification with the organization, engagement in the training program, and satisfaction toward the training program), psychological health (i.e., perceived stress), and behaviors (i.e., performance in the training program). In doing so, this study contributes novel theoretical developments to psychological capital research by considering a wider range of a predictors and outcomes central to any vocational training context and not previously examined in relation to psychological capital (for instance, Meyers et al., 2015 only assessed personal growth initiative, whereas Peterson et al., 2011 only considered work performance).

More precisely, we investigate the role of trainees' perceptions of organizational support (i.e., perception that their organization values their contribution and cares for their well-being; Eisenberger et al., 1986) and LMX (i.e., perception of the quality of their relationship with their training instructor based on their perceived loyalty, affect, contribution, and professional respect; Liden & Maslyn, 1998) as predictors of psychological capital trajectories. These predictors can be theoretically expected to help drive trainees to allocate—willingly or not—more or less of their energy and resources to their training role (Hobfoll, 2002), and thus influence the emergence of specific psychological capital trajectories (Luthans & Youssef-Morgan, 2017).

We finally assess the implications of the profiles of psychological capital trajectories for trainees' levels of: (a) engagement in their training (i.e., active involvement in training activities through behaviors, emotions, cognitions, and agency; Jang et al., 2016); (b) satisfaction toward their training (i.e., perception that the training program matches their professional expectations and values; Shimazu et al., 2015); (c) performance in training (i.e., ability to adequately mobilize the resources at their disposal to accomplish training goals; Kessler et al., 2003); (d) organizational cynicism (i.e., negative emotions toward their organization, based on the belief that this organization lacks integrity and does not live up to its commitments; Pfrombeck et al., 2020); (e) identification with their organization (i.e., the extent to which they have a strong sense of belonging to their organization and feel that their individual values are consistent with those of this organization; Ellemers et al., 1999); and (e) perceived stress (i.e., perception of a mismatch between resources and their training demands; Cohen et al., 1983). These outcomes are all closely linked to the preservation or deterioration of trainees' resources (Hobfoll, 2002). For instance, some trainees may become cynical about their organization (i.e., the national police) because they feel lacking the resources needed to adequately cope with training demands, which they may come to see as a breach of psychological contract from their organization (Pfrombeck et al., 2020). Distancing themselves from their organization (i.e., becoming cynical about it) may then become a way to preserve their few remaining resources, while hoping that changes in their training environment will enable them to rebuild these resources. Conversely, trainees can be very engaged in their training and very satisfied about it when they feel that their training environment provides them with the resources they need (e.g., autonomy, support, recognition) to deal with the challenges encountered (Bakker & Demerouti, 2017).

This study seeks to improve understanding of the mechanisms involved in psychological capital trajectories, thereby hoping to guide the development of interventions designed to strengthen trainees' unfolding psychological capital trajectories in the context of their vocational training and beyond. This global objective is important for three primary reasons. First, all trainees need to develop psychological resources throughout their vocational training to be well-prepared to face the various professional difficulties and challenges they will encounter throughout their career (Gillet, Morin, et al., 2018). As such, determining how psychological capital evolves early in the career may provide knowledge on how to improve training conditions to maximally support them across their subsequent entry into the workforce. More generally, the period of entry into a new occupation is critical for all employees. Indeed, as they transit from the controlled training environment and enter their true occupational reality, new employees are likely to experience stressful, challenging, new, and unexpected situations that can lead them to question their career choice, to experience stress and anxiety, and to decrease their motivation and commitment toward their new roles (e.g., Houle et al., 2024; Solinger et al., 2013). Employees need to quickly learn to understand these new roles to reduce these feelings and to efficiently manage their new job demands without feeling that they are losing themselves. Psychological capital is a key psychological resource likely to help them experience a smoother transition into the workforce (Luthans et al., 2015).

Second, many organizations, including critically important public organizations, such as police (Wong et al., 2023) or healthcare (Huyghebaert et al., 2019) organizations, face particularly high levels of turnover during the critical period of entry into the workforce that directly follows vocational training (Xie & Zong, 2024). The “great resignation” resulting from the recent COVID-19 pandemic has contributed to drastically increased the scope of this problem (e.g., Formica & Sfodera, 2022; Ng & Stanton, 2023), making it urgent to dedicate empirical efforts to better capture how the vocational training contexts support the development of personal resources, such as psychological capital, to ensure a smoother entry into the workforce. Third, our specific focus on police officers is predicated on the critical role they have to play in ensuring and preserving the safety and optimal functioning of society (Siu et al., 2015). Policing is a stressful and demanding occupation (Ondrejková & Halamová, 2022) for which there is a continuous need for new recruits willing to risk their own security to help maintain law enforcement, public safety, and the protection of citizens. Moreover, in recent years, police officers have experienced an increase in stress levels and health problems (Fix & Powell, 2024), with significant consequences for colleagues, family, and community members (Laufs et al., 2020). This may be due to increasing demands on police agencies and unavoidable workplace stressors (e.g., increased work hours, enforcement of new and changing policies; Baker et al., 2020). To cope with these job demands, police officers need to develop and maintain psychological resources allowing them to better cope with these various stressors (i.e., resilience) while maintaining a positive life orientation (i.e., hope and optimism) and their professional efficacy, such as psychological capital (Bakker & Demerouti, 2017; Hobfoll, 2002). It is thus critical to understand how police organizations and society more generally can capitalize on the vocational training period of upcoming police officers to help them develop their psychological capital to support them in their upcoming career.

1. A global perspective on psychological capital

Psychological capital is conceptualized as a global psychological resource encompassing the joint experience of hope, resilience, optimism, and efficacy (Luthans et al., 2007; Luthans & Youssef, 2004). Importantly, employees' global levels of psychological capital tend to share much stronger associations with predictors and outcomes (e.g., performance, engagement, satisfaction) relative to their specific levels of hope, resilience, optimism, and efficacy (Luthans et al., 2005, 2007). These conclusions hold across settings (e.g., education, work, sport), cultures, and operationalization of psychological capital (either as a single score, as higher-order psychological capital scores, or as separate psychological capital dimensions). These results underscore the relevance of primarily considering global levels of psychological capital when investigating its evolution, drivers, and implications rather than separately focusing on its separate components.

2. A person-centered perspective on psychological capital trajectories

When seeking to understand the longitudinal dynamics of psychological capital, a first source of empirical evidence comes from research examining rank-order stability (i.e., the extent to which the ordering of scores on a specific variable across participants remains the same over time). In this regard, research has reported moderately high levels of rank-order stability among samples of established petrochemical ($r = 0.45$; Mei et al., 2022) or white collar ($r = 0.81$; Alessandri et al., 2018) employees across a one-year time interval. A second source of evidence comes from studies specifically concerned with longitudinal trajectories of psychological capital, focusing more on intra-individual stability (i.e., whether individual scores remain unchanged over time). Although some of these studies have reported evidence of slightly increasing psychological capital trajectories as a function of age among samples of students and employees (Aryani et al., 2021; King et al., 2020; Xie et al., 2021), others reported decreasing (Meyers et al., 2015; Peterson et al., 2011) or stable (Jia et al., 2021; Yue et al., 2023) trajectories. Despite these generic tendencies, these studies clearly highlight substantial inter-individual heterogeneity in the shape of these trajectories (e.g., McAuley et al., 2011; Shan et al., 2023). Although these previous results may seem hard to reconcile, the presence of inter-individual variability suggests that all possible shapes (e.g., high, low, increasing) might be occurring among different segments of the population (Morin & Litalien, 2019). A person-centered perspective, designed to identify subpopulations of participants following distinctly shaped longitudinal psychological capital trajectories, may thus provide a way to reconcile these apparently discrepant results (Hofmans et al., 2021; Morin & Litalien, 2019).

This expectation is anchored in the theoretical literature on newcomers' socialization, which focuses on how trainees and new employees come to progressively learn the roles of their new occupational roles (e.g., Cooper-Thomas & Anderson, 2006; Houle et al., 2024; Louis, 1980; Moyson et al., 2018). Trainees' socialization generally unfolds across three stages. In the first stage (anticipatory socialization), trainees have not started training yet but already begun visualizing imagining themselves as upcoming police officers. In the second stage (encounter), trainees have just started their training, and need to quickly adjust to new role expectations and functional requirements. Finally, in the third stage (transformation or adjustment), trainees have started to acquire a set of desired values, attitudes, and behaviors expected of them as upcoming police officers. Based on what happens at each of these stages, socialization theory has long acknowledged the heterogeneity of the longitudinal trajectories likely to be displayed by newcomers (e.g., Bauer et al., 2021; Boswell et al., 2005; Solinger et al., 2013). In the present study, we more specifically focus on the integrative taxonomy of socialization scenarios (1. *Learning to Love*; 2. *Honeymoon-Hangover*; 3. *Low Fit*; 4. *High Fit*; and 5. *Moderate Fit*) theoretically proposed by Solinger et al. (2013).

A first scenario occurs when all three stages of socialization unfold smoothly, resulting in steadily increasing levels of psychological capital. This scenario was referred by Solinger et al. (2013) as matching a 1. *Learning to Love* process. Trainees undergoing this type of onboarding scenario progressively discover, and adapt to, their new environment, and gradually develop the psychological resources required to cope with difficulties encountered during training (Bauer et al., 2021).

Following from Boswell et al. (2005), Solinger et al. (2013) also described a second onboarding scenario corresponding to a 2. *Honeymoon-Hangover* process. Once trainees decide to undergo vocational training and consider themselves ready to learn the ropes of a new job, their expectations regarding their training program and their new organizational context can sometimes be unrealistically high. This initial phase is akin to a *Honeymoon* period during which trainees' enthusiasm, interest, efficacy, energy, and commitment enable them to cope with any difficulties that they may encounter (Zhou et al., 2021). However, overenthusiastic trainees can quickly (within a few weeks; Wong et al., 2023) see their psychological resources gradually weaken (i.e., the *Hangover* stage), when their experience and the reality of their job or training context fail to fully match their initial expectations, and failures or challenges start to accumulate (Valero & Hirschi, 2019).

Trainees' psychological resources, as captured by their global psychological capital levels, also depend on the two complementary processes (Kristof-Brown et al., 2005; Solinger et al., 2013) of attraction (i.e., trainees are keen to take part in training programs that match their expectations and skills) and selection (i.e., organizations and training programs only select trainees whose profiles match the training expectations). These two processes should help trainees experience feelings of adequation, match, or fit between their knowledge, skills and expectations, and the requirements, content, and nature of their training program. This experience of fit should be intimately related to the nature of their psychological capital trajectories (Choi et al., 2020): The higher the fit, the greater the psychological capital. Solinger et al. (2013) refer to these various scenarios as involving high, moderate, or low levels of fit. Indeed, some trainees may have few options in terms of accessible vocational training programs or may simply quickly realize that they have made the wrong choice. However, not all of them can leave their training program right after finding that it does not suit them due to a lack of credible alternatives or financial resources (e.g., Morin, Morizot, et al., 2011). In this 3. *Low Fit* scenario, trainees should display low and stable levels of psychological capital.

In contrast, the constant search for the best possible solution on the part of both trainees and organizations could also result in a 4. *High Fit* scenario in which trainees approach their training with high levels of psychological capital that remain stable over time. These trainees have the skills to succeed, are strongly committed to the program, and know what the organization expects of them. As a result, they will be protected against unpleasant surprises during their training, and any problems encountered can be quickly resolved (Houle et al., 2022; Tóth-Király et al., 2023).

Finally, Solinger et al. (2013) also proposed a 5. *Moderate Fit* scenario. Some trainees may indeed find themselves in an intermediate zone with uncertainties and apprehensions about their ability to cope with the demands of their training program, which may result in moderate initial levels of psychological capital. Some of those doubts may gradually be dispelled by the experience of real-life professional situations, while difficulties and challenges may also arise, resulting in moderate and stable levels of psychological capital (Cheyroux et al., 2023; Griep, 2022).

This taxonomy of socialization scenarios has only been validated in relation to newcomers' levels of affective commitment to their organization (Solinger et al., 2013) and occupation (Houle et al., 2024). However, it is far more consistent with a description of unfolding trajectories of psychological resources, as captured by the psychological capital construct, which is conceptually seen as an indicator of evolving person-environment congruence (Luthans et al., 2007; Luthans & Youssef-Morgan, 2017). The current study is thus designed to provide the first empirical validation evidence of the taxonomy of socialization scenarios proposed by Solinger et al. (2013), while also directly focusing on a global indicator of psychological resources. More precisely, based on the aforementioned theoretical considerations, we expect that:

Hypothesis 1. At least five profiles of psychological capital trajectories will be identified, displaying (a) moderate to high initial levels with increasing (*Learning to Love*) trajectories; (b) high initial and stable levels followed by decreasing trajectories (*Honeymoon-Hangover*); and (c) low (*Low Fit*), moderate (*Moderate Fit*), or high (*High Fit*) initial levels with stable trajectories.

3. Predictors of psychological capital trajectories

In person-centered research, documenting associations between profiles, predictors, and outcomes is particularly important. Indeed, although person-centered analyses can be used for confirmatory or exploratory purposes, person-centered approaches are methodologically exploratory (Morin et al., 2018). As a result, although this methodologically inductive nature reduces the importance of a priori expectations, it reinforces that of documenting relations between the profiles and facets of their nomological network to assess their construct validity (Meyer & Morin, 2016; Morin et al., 2018).

Psychological capital is theoretically conceptualized as emerging from the experience of a congruence between individuals' own goals and values and those of their environment (Luthans et al., 2007; Luthans & Youssef-Morgan, 2017). As a result, psychological capital trajectories should demonstrate reactivity to fluctuations in the characteristics of the vocational training context (Demerouti et al., 2011; Luthans, Avey, & Patera, 2008). Supporting this assertion, employees exposed to high levels of authentic leadership (Johnson et al., 2023), social support (Schmidt & Flatten, 2022), to a positive learning climate (Peng & Chen, 2023), and to a climate of psychosocial safety (Siami et al., 2022) have been found to display higher levels of psychological capital, whereas those exposed to less desirable and supportive work environments tend to display lower levels of psychological capital (Wu & Nguyen, 2019). However, to accurately grasp the dynamic nature of the associations between characteristics of the vocational training and psychological capital trajectories in a way that can support intervention, longitudinal methods are required. Unfortunately, very little research has so far examined these questions dynamically. Among exceptions, Jiao and Lee (2021) revealed time-structured positive associations between job resources and psychological capital, whereas Carter and Youssef-Morgan (2019) showcased the benefits of mentoring quality for psychological capital.

In the present study, we focus on two possible predictors falling under the control of training organizations: Perceived

organizational support and LMX. According to the conservation of resources theory (Hobfoll, 2002) and job demands-resources model (Bakker & Demerouti, 2017), perceived organizational support and LMX can be seen as contextual resources likely to facilitate the development and maintenance of individual resources, such as psychological capital. More precisely, perceived organizational support helps trainees face contextual demands while retaining their personal resources (Gillet, Fouquereau, et al., 2018; Morin et al., 2023). Managers, trainers, and practitioners can easily act to improve trainees' perceptions of organizational support to support trainees' functioning (Caesens et al., 2020). Similarly, LMX represent a well-documented driver of performance, engagement, and well-being (Gillet, Morin, Cougot, et al., 2022; Liden & Maslyn, 1998) anchored in positive social exchange relationships between trainers and trainees. LMX thus represents an interpersonal resource present to various degrees in the training context that is likely to help trainees build, accumulate, and recover their personal resources by directly helping them to better face the demands and challenges of the training context (Tabak et al., 2024; Volmer et al., 2023). Both of training-related resources are thus likely help trainees more efficiently meet their training-related demands without exhausting their own personal resources, such as their psychological capital (Bakker & Demerouti, 2017).

Acknowledging that psychological capital (e.g., Meyers et al., 2015; Peterson et al., 2011), LMX (e.g., Lu et al., 2024; Scott & Zweig, 2020), and perceived organizational support (e.g., Caesens et al., 2016, 2020) are dynamic constructs exhibiting short-term (state-like) fluctuations around more stable trajectories (trait-like), makes it important to consider their associations across these two layers of analysis (Hofmans et al., 2021). Considering the trait-like effects of LMX and positive organizational support on psychological capital trajectories (i.e., effects on profile membership and within-profile trajectories) will reveal more lasting, or longer-term, benefits of LMX and positive organizational support. Conversely, considering their short-term effects (i.e., on state-like deviations) will indicate whether they can be used to temporarily boost psychological capital levels in periods of need.

3.1. Perceived organizational support

Perceived organizational support reflects the extent to which trainees feel that their organization cares about their well-being and values their contribution (Eisenberger et al., 1986). Organizational support has been theoretically conceptualized as contributing to, and empirically found to contribute to, the development of trust, autonomy, positive self-perceptions, and positive social interactions (Eisenberger & Stinglhamber, 2011; Kurtessis et al., 2017). From this perspective, when trainees feel supported in their training, they are more likely to hope (a theoretical component of psychological capital) that new ways of learning are possible, and that certain tasks can be made easier. Moreover, when trainees face difficulties in their learning, those who feel exposed to a strong level of support from their organization are more likely to develop high levels of resilience (a theoretical component of psychological capital) and thus to persevere more despite the problems encountered (Bhatnagar & Aggarwal, 2020). In this context, even if they make mistakes, trainees will be less likely to question their skills and or ability to solve the problems encountered, but will be more likely to remain optimistic (another theoretical component of psychological capital) and to continue their efforts while trying to do things differently (Luthans, Norman, et al., 2008). Finally, trainees who feel supported and encouraged to attend to their needs at work are more likely to believe in their own ability to manage their job demands and responsibilities. More specifically, they are more likely to mobilize greater efforts and sustain them to develop their skills and personal efficacy to manage their role demands and responsibilities, which increases their self-efficacy (a final theoretical component of psychological capital; Chan et al., 2022). These theoretical assertions have been supported by previous studies showing a positive effect of employees' perceptions of organizational support on their levels of psychological capital (Liu et al., 2013; Shaheen & Krishnankutty, 2018). Based on these theoretical empirical considerations, we expect that:

Hypothesis 2. Initial perceptions of organizational support will be associated with: (a) a higher likelihood of membership into profiles characterized by higher initial levels of psychological capital (e.g., *High Fit, Honeymoon-Hangover*), (b) higher within-profile initial levels of psychological capital, and (c) within-profile increases in psychological capital.

Hypothesis 3. Increases in perceptions of organizational support will be associated with: (a) a higher likelihood of membership into profiles characterized by higher increases in psychological capital (e.g., *High Fit, Learning to Love*), and (b) within-profile increases in psychological capital.

Hypothesis 4. Time-specific (i.e., state-like fluctuations) increases in perceptions of organizational support will be associated with within-profile time-specific increases in psychological capital.

3.2. LMX

LMX refers to the quality of exchange relationships between trainers and trainees (Liden & Maslyn, 1998). From a theoretical standpoint, trainees who feel exposed to high levels of LMX, should come to strongly identify with their trainers and develop confidence in them (Gillet, Morin, Cougot, et al., 2022). By facilitating a sense of belonging and connection, LMX theoretically allows trainees to seek opportunities to develop novel or bolster existing psychological resources to better prepare themselves to cope with job demands requiring adaptation (Hobfoll, 2002). More specifically, LMX is theoretically positioned as facilitating the flow of information between trainers and trainees about how to succeed, leading to higher levels of hope (a theoretical component of psychological capital) among trainees as they feel able to better see the pathways to success (Luthans et al., 2015). Likewise, when exposed to higher levels of LMX, trainees should be more likely to realize that they are not alone and can benefit from a wealth of social resources and support to fall back on when facing difficulties, which can translate into higher levels of resilience (another theoretical component of psychological capital; Caniëls & Hatak, 2022). Likewise, when trainees accurately identify their goals and know their responsibilities, their

sense of agency and ability to act on their environment are improved, which represent key theoretical drivers of optimism (another theoretical component of psychological capital; Seligman, 1998). Finally, LMX has been theoretically proposed to help support trainees' understanding of the expectations of their training program, resulting in higher levels of role clarity (Wang et al., 2016). As a result of this role clarity, they should be more likely to succeed in their program, leading to an increased sense of self-efficacy (a final theoretical component of psychological capital; Bandura, 1997). Research has supported these expectations, showing that LMX tends to be associated with higher levels of psychological capital (He et al., 2021; Johnson et al., 2023), leading to the following hypotheses:

Hypothesis 5. Initial levels of LMX will be associated with: (a) a higher likelihood of membership into profiles characterized by higher initial levels of psychological capital (e.g., *High Fit, Honeymoon-Hangover*), (b) higher within-profile initial levels of psychological capital, and (c) within-profile increases in psychological capital.

Hypothesis 6. Increases in LMX will be associated with: (a) a higher likelihood of membership into profiles characterized by higher increases in psychological capital levels (e.g., *High Fit, Learning to Love*), and (b) within-profile increases in psychological capital.

Hypothesis 7. Time-specific (i.e., state-like fluctuations) increases in LMX will be associated with within-profile time-specific increases in psychological capital.

4. Outcomes of psychological capital trajectories

Although psychological capital has always been theoretically conceived as a core psychological resource involved in driving positive functioning (Avey et al., 2011; Luthans et al., 2007), we expand upon prior longitudinal research by considering a broader range of outcomes pertaining to trainees' attitudes (i.e., organizational cynicism, identification with the organization, engagement in the training program, and satisfaction toward the training program), psychological health (i.e., perceived stress), and behaviors (i.e., performance in the training program), all selected based on their strong empirically-demonstrated relevance to performance and professional success. As a result, documenting associations between profiles and outcomes helps to examine their desirability, which can then help prioritize interventions seeking to promote or limit the development of certain profiles, thereby supporting performance and success (Luthans et al., 2015).

More precisely, cynicism has often been related to reduced levels of performance, which has been theoretically explained by its negative influence on employees' behavioral, motivational, physical, and/or cognitive functioning (Scott & Zweig, 2021). Indeed, trainees who hold and express cynical attitudes might struggle to develop positive relationships with others (e.g., peers, trainers), which can lead to social isolation during training, which is an important driver of declining performance levels (Peng et al., 2023). Likewise, perceived stress has long been recognized as a direct important precursor of a wide variety of undesirable work outcomes (e.g., turnover: Xu et al., 2023; reduced performance: Alsufyani et al., 2022). In contrast, program engagement and satisfaction are known to positively influence performance (Cheyroux et al., 2023; Hou et al., 2020). Decreases in trainees' performance associated with stress can be explained by difficulties at the cognitive level (e.g., concentration problems), while positive effects of engagement and satisfaction on performance are linked to increased involvement and feelings of self-worth and self-fulfillment (Sadovyy et al., 2021; Yun & Beehr, 2023). Organizational identification is also known to be positively associated with effort, organizational citizenship behaviors, and performance (Lee et al., 2015). Finally, trainees' learning and performance may facilitate subsequent performance improvement in their daily job tasks (Blume et al., 2010). Moreover, all outcomes were selected due to their known dynamic nature (Cheyroux et al., 2023; Scott & Zweig, 2020), making them naturally suited to the investigation of their time-structured associations with psychological capital trajectories.

Many theoretical arguments have been offered to account for the desirable consequences of psychological capital. Theoretically, psychological capital is conceptualized as being intimately related to the ability to mobilize ones' resources to achieve one's goals, as well as to the capacity to assess demands and difficulties in a positive (e.g., challenges) rather than negative (e.g., hindrances) way, thereby supporting perseverance and optimal functioning (Luthans & Youssef-Morgan, 2017; Youssef-Morgan & Luthans, 2015). From the perspective of the conservation of resources theory (Hobfoll, 2002), trainees with high levels of psychological capital should be able to allocate more of their personal resources to training activities, while gaining additional resources from the fulfillment and enjoyment derived from spending time in activities that they like and that are consistent with their own values. Turning now our attention to the specific outcomes considered in this study, since optimists expect to succeed and self-efficient employees believe in their individual abilities to achieve success, we can first expect trainees experiencing high levels of psychological capital to display high levels of satisfaction and performance during training (Choi et al., 2020; Luthans et al., 2007). Likewise, they should be more inclined to invest themselves fully in training, and to find pleasure and enthusiasm in it, which should lead to higher levels of engagement (Datu et al., 2018). In addition, resilience to setbacks and optimistic expectations of the future may allow trainees with high levels of psychological capital to be more open and less cynical about their organization (Avey et al., 2011). Positive psychological resources (e.g., hope) could also be a way for trainees to cope with the job demands they face during their training program, which are generally associated with high levels of stress and ill-being (Bakker & Demerouti, 2017). Not surprisingly, previous studies have shown a negative effect of psychological capital on stress (Avey et al., 2009; Sen et al., 2023). Finally, psychological capital may have a positive influence on organizational identification through gratitude as trainees with a great deal of gratitude toward their trainers and their organization as a whole have a greater sense of responsibility and identify more with their organization (Hu et al., 2022).

Although research has rarely investigated these specific variables as dynamic outcomes of psychological capital trajectories, the bulk of research on psychological capital has reported positive associations between psychological capital and levels of organizational identification, engagement, performance, and satisfaction, as well as negative associations between psychological capital and levels of

stress and cynicism (e.g., Avey et al., 2011; Luthans & Youssef-Morgan, 2017; Youssef-Morgan & Luthans, 2015). Thus, we propose that:

Hypothesis 8. Time-specific levels of psychological capital will be associated with matched time-specific levels of: (a) identification with the organization, (b) engagement and (c) performance in the training program, and (d) satisfaction toward the training program, and inversely associated with their levels of (e) organizational cynicism and (f) perceived stress.

5. Method

5.1. Sample and procedure

This study relies on a sample of 1200 participants ($M_{age} = 24.88$; $SD_{age} = 3.71$; 69.7 % male) undergoing a 33-week full-time vocational training program to become police officers in France. In terms of previous education, 19 participants (1.6 %) had no previous diploma, 118 previously obtained a vocational training certificate (9.8 %), 788 previously obtained a high school diploma (65.7 %), and 275 previously obtained a university diploma (22.9 %). Participation was voluntary and all participants enrolled in this program were invited to complete a self-report questionnaire close to the beginning of the program (Time 1, T1: $n = 1200$), and then 14 (T2: $n = 638$), 17 (T3: $n = 599$), and 22 (T4: $n = 528$) weeks later. At each data collection point, members of the research team explained the purpose of the study to all participants who, after providing informed consent, completed a 20-minute web-based questionnaire. Participants were ensured that their responses would be kept confidential and would not impact their educational or professional trajectories or achievement. They were also asked to provide a personal identification code to allow researchers to match their responses over time. More generally, all procedures implemented in the present research follow the ethical standards and principles of the Declaration of Helsinki (World Medical Association, 2013).

5.2. Timing of the repeated measures

This study relies on a sample of upcoming police officers surveyed across four times points (with intervals ranging from one to three months) taken over a total period of five months and a half as they undergo vocational training. This specific time frame reflects the nature of the training program considered in this study, is aligned with the range of time intervals usually considered appropriate in research focusing on trainees (e.g., Cece et al., 2023), and encompass enough time points to detect nonlinear trajectories (e.g., Grimm et al., 2016). More generally, unlike cross-sectional or limited longitudinal (including only two measurement points; Carter & Youssef-Morgan, 2019; Datu et al., 2018) designs, this timeframe allows us to capture the dynamic nature of psychological capital trajectories (Meyers et al., 2015; Peterson et al., 2011; Ployhart & Vandenberg, 2010).

5.3. Content of the vocational training program

This vocational training program is divided into three main periods. The first period covers the first 22 weeks of training during which police officers learn about their upcoming duties (e.g. receiving victims and other citizens, roadside checks, intervention in situations of domestic violence, drug-related interventions). The first moment of data collection (T1) took place five to six weeks after the start of this period. At the end of this period, trainees are assessed on their technical and legal knowledge, and on their ability to solve a concrete situation. The trainees then learn about the police work environment by completing a three-week internship in a police station. This internship gives them an opportunity to gradually discover real work situations and to apply their knowledge under the supervision of experienced officers. The second data collection point (T2) took place just before the start of this internship, while the third data collection point (T3) took place after the end of this internship. Finally, the final eight-week period essentially focuses on reviewing the experience gained during the internship, with in-depth discussions on elements such as discernment, decision-making, religions, and video protection. At the end of the program, trainees' attitudes, behaviors, and willingness to learn are assessed. This training period ended with a final data collection point (T4).

5.4. Measures

Most measures were already validated in French (i.e., psychological capital, LMX, perceived organizational support, engagement, stress, satisfaction, and performance). Measures not already validated in French (i.e., identification and cynicism) were adapted to French using a translation back-translation procedure realized by independent bilingual experts. Discrepancies were resolved by consensus. All items were rated on a 1 (*strongly disagree*) to 5 (*strongly agree*) response scale, with the exception of the single-item measures of satisfaction and performance.

5.4.1. Psychological capital

Participants' psychological capital was assessed using the French version (Choisay et al., 2021) of the Psychological Capital Questionnaire (Luthans et al., 2007). This questionnaire captures four dimensions: (a) hope (six items; e.g., "I can think of many ways to reach my current training goals"; $\alpha_1 = 0.78$; $\alpha_2 = 0.86$; $\alpha_3 = 0.87$; and $\alpha_4 = 0.92$); (b) resilience (six items, e.g., "I feel I can handle many things at a time at this training"; $\alpha_1 = 0.72$; $\alpha_2 = 0.81$; $\alpha_3 = 0.84$; and $\alpha_4 = 0.89$); (c) optimism (six items, e.g., "I always look on the bright side of things regarding my training"; $\alpha_1 = 0.65$; $\alpha_2 = 0.76$; $\alpha_3 = 0.79$; and $\alpha_4 = 0.84$); and (d) efficacy (six items, e.g., "I

feel confident to present information to a group of trainees"; $\alpha_{t1} = 0.77$; $\alpha_{t2} = 0.83$; $\alpha_{t3} = 0.89$; and $\alpha_{t4} = 0.93$). All items can be used together to assess global levels of psychological capital ($\alpha_{t1} = 0.90$; $\alpha_{t2} = 0.94$; $\alpha_{t3} = 0.95$; and $\alpha_{t4} = 0.97$), which is the approach taken in this study (Choisay et al., 2021).

5.4.2. LMX (predictor)

LMX was assessed with a scale (Liden & Maslyn, 1998; French version: Gillet, Morin, Cougot, et al., 2022) assessing the four dimensions of loyalty (three items; $\alpha_{t1} = 0.67$; $\alpha_{t2} = 0.84$; $\alpha_{t3} = 0.88$; and $\alpha_{t4} = 0.89$; e.g., "My trainer defends my work actions to a superior, even without complete knowledge of the issue in question"), affect (three items; $\alpha_{t1} = 0.79$; $\alpha_{t2} = 0.90$; $\alpha_{t3} = 0.91$; and $\alpha_{t4} = 0.92$; e.g., "I like my trainer very much as a person"), contribution (three items; $\alpha_{t1} = 0.66$; $\alpha_{t2} = 0.73$; $\alpha_{t3} = 0.79$; and $\alpha_{t4} = 0.83$; e.g., "I do work for my trainer that goes beyond what is specified in my program description"), and professional respect (three items; $\alpha_{t1} = 0.86$; $\alpha_{t2} = 0.91$; $\alpha_{t3} = 0.90$; and $\alpha_{t4} = 0.92$; e.g., "I admire my trainer's professional skills"). All items can be used together to assess participants' global levels of LMX ($\alpha_{t1} = 0.85$; $\alpha_{t2} = 0.93$; $\alpha_{t3} = 0.94$; and $\alpha_{t4} = 0.95$), which is the approach taken in this study (Gillet, Morin, Cougot, et al., 2022).

5.4.3. Perceived organizational support (predictor)

Perceived organizational support was assessed using a four-item measure developed in French by Caesens et al. (2014; e.g. "National police really cares about my well-being"; $\alpha_{t1} = .80$; $\alpha_{t2} = .82$; $\alpha_{t3} = .77$; and $\alpha_{t4} = .70$).

5.4.4. Identification (outcome)

Participants' identification with their organization (i.e., the French national police) was assessed using a questionnaire developed by Ellemers et al. (1999). This questionnaire captures three dimensions: (a) group self-esteem (four items; e.g., "I feel good about national police"; $\alpha_{t1} = 0.41$; $\alpha_{t2} = 0.59$; $\alpha_{t3} = 0.69$; and $\alpha_{t4} = 0.74$); (b) self-categorization (three items, e.g., "I am like other police officers"; $\alpha_{t1} = 0.47$; $\alpha_{t2} = 0.56$; $\alpha_{t3} = 0.65$; and $\alpha_{t4} = 0.74$); and (c) commitment (three items, e.g., "I would like to continue working with police officers"; $\alpha_{t1} = 0.78$; $\alpha_{t2} = 0.83$; $\alpha_{t3} = 0.81$; and $\alpha_{t4} = 0.82$). All items can be jointly used to assess global levels of identification ($\alpha_{t1} = 0.67$; $\alpha_{t2} = 0.78$; $\alpha_{t3} = 0.82$; and $\alpha_{t4} = 0.86$), which is the approach taken in this study (Ellemers et al., 2004).

5.4.5. Engagement (outcome)

Participants' engagement in the training program was assessed using a questionnaire covering four dimensions (Jang et al., 2016; French version: Sandrin et al., 2022): Behavioral (five items; e.g., "I pay attention in this training program"; $\alpha_{t1} = 0.80$; $\alpha_{t2} = 0.82$; $\alpha_{t3} = 0.77$; and $\alpha_{t4} = 0.70$), emotional (five items; e.g., "When we work on something in this training program, I get involved"; $\alpha_{t1} = 0.80$; $\alpha_{t2} = 0.82$; $\alpha_{t3} = 0.77$; and $\alpha_{t4} = 0.70$), agentic (five items; e.g., "When I need something in this training program, I will ask the trainer for it"; $\alpha_{t1} = 0.80$; $\alpha_{t2} = 0.82$; $\alpha_{t3} = 0.77$; and $\alpha_{t4} = 0.70$), and cognitive (four items; e.g., "When learning about a new topic in this training program, I usually try to summarize it in my own words"; $\alpha_{t1} = 0.80$; $\alpha_{t2} = 0.82$; $\alpha_{t3} = 0.77$; and $\alpha_{t4} = 0.70$) engagement. Following Cheon et al. (2019), we relied on a global score of engagement in this study ($\alpha_{t1} = 0.80$; $\alpha_{t2} = 0.82$; $\alpha_{t3} = 0.77$; and $\alpha_{t4} = 0.70$).

5.4.6. Performance (outcome)

Performance in the training program was assessed using a validated one-item measure (i.e., "How would you rate your overall program performance") from the World Health Organization Health and Work Performance Questionnaire (Kessler et al., 2003; French version by Huyghebaert et al., 2018). Responses were provided on a scale ranging from 0 (*worst performance*) to 10 (*best performance*).

5.4.7. Satisfaction (outcome)

Satisfaction toward the training program (i.e., "Are you satisfied with this program?") was assessed using a validated one-item measure (Shimazu et al., 2015; French version: Fouquereau et al., 2019), rated on a scale ranging from 1 (*dissatisfied*) to 4 (*satisfied*).

Cynicism (outcome). Organizational cynicism was assessed with five items ($\alpha_{t1} = 0.74$; $\alpha_{t2} = 0.76$; $\alpha_{t3} = 0.74$; and $\alpha_{t4} = 0.71$; e.g., "I believe that national police says one thing and does another") used by Pfrombeck et al. (2020).

5.4.8. Stress (outcome)

Perceived stress was assessed with four items ($\alpha_{t1} = 0.75$; $\alpha_{t2} = 0.76$; $\alpha_{t3} = 0.76$; and $\alpha_{t4} = 0.80$; e.g. "How often have you felt that you were unable to control the important things in your life?") developed by Cohen et al. (1983; French version: Gillet, Morin, Ndiaye, et al., 2022). Responses were provided in relation to the previous month.

6. Analyses

6.1. Model estimation and missing data

All analyses models were estimated using Mplus 8.10 (Muthén & Muthén, 2023) and the robust Maximum Likelihood (MLR) estimator which provides parameter estimates, standard errors, and goodness-of-fit indices that are robust to the non-normality of the response scales used in the present study. All models relied on Full Information Maximum Likelihood (FIML) procedures to handle missing data (Enders, 2022), making it possible to estimate all models without relying on the problematic listwise deletion of participants who did not complete all time points. A total of 1200 participants were used in the analyses and provided 2965 occasion-

specific ratings (1200 participants participated at T1, 638 at T2, 599 at T3, and 528 at T4). Due to the way the online questionnaire was programmed, there were no missing responses for participants who completed each time point. To test for the effects of attrition, we estimated a multiple regression analysis in which initial scores (T1) on all variables were used to predict the number of completed time points. The results showed that participants with lower levels of psychological capital ($b = -0.161$, $s.e. = 0.079$; $\beta = -0.085$; $p < .05$), higher levels of identification ($b = 0.193$, $s.e. = 0.040$; $\beta = 0.168$; $p < .05$), and lower levels of stress ($b = -0.098$, $s.e. = 0.048$; $\beta = -0.071$; $p < .05$) completed more measurement points than other participants ($R^2 = 0.028$). As these variables are all part of our analytic models, missingness thus matches the Missing at Random (MAR) assumptions of FIML (Enders, 2022), which allows missing responses to be conditioned on variables included in the analyses.

6.2. Preliminary measurement models

Our main analyses were conducted using factor scores (providing a partial correction for measurement error; Skrondal & Laake, 2001) saved from preliminary measurement models in which their measurement invariance was established to ensure comparability over time (Millsap, 2011). For all measures, these factor scores were estimated in standardized units ($M = 0$, $SD = 1$) at T1, and reflecting deviations from T1 in SD units at the following time points to simplify interpretations. For psychological capital, these factor scores were taken from a bifactor measurement model, making it possible to obtain a global estimate of trainees' global levels of psychological capital across dimensions while controlling for subscale specificity (Choisy et al., 2021), which is consistent with Luthans et al.'s (2007) theoretical conceptualization of psychological capital. More precisely, a bifactor model directly estimates a global factor from all psychological capital items, while accounting for the specificities remaining associated with each specific facet (hope, resilience, efficacy, and optimism) (e.g., Morin, 2023). For predictors and outcomes, the factor scores used in the main analyses were obtained following a two-step procedure advocated by Morin, Maïano, et al. (2011; also see Sandrin et al., 2022). First, longitudinal measurement models were first estimated (global levels of LMX, identification, and engagement were also obtained using a bifactor operationalization; Ellemers et al., 2004; Gillet, Morin, Cougot, et al., 2022; Huyghebaert-Zouaghi et al., 2023), and used to test the measurement invariance of participants' ratings on all multi-item predictors and outcomes. Second, longitudinally invariant scores on these factors were used to estimate latent curve models reflecting participants' longitudinal trajectories (Bollen & Curran, 2006).

For all predictors and outcomes, we contrasted linear, curvilinear, and nonlinear (latent basis) models to select the optimal representation of these longitudinal trajectories (Grimm et al., 2016). Linear trajectories are represented by a random intercept factor reflecting the initial level of the trajectories (the occasion-specific measures are linked to this factor by loadings fixed to 1) and a random linear slope factor reflecting the rate of change in these trajectories over time (the occasion-specific measures are linked to this factor by loadings reflecting the passage of time in monthly units in the present study: 0 at T1, 3.5 at T2, 4.25 at T3, and 5.5 at T4). Quadratic models are specified as the linear models, but with the addition of a quadratic slope factor (the occasion-specific measures are linked to this factor by squaring the time codes used to define the linear slope factor) reflecting the curvature (U-shaped or inverted-U-shaped) of these trajectories. Finally, latent basis models are similar to linear models, but rely on a free estimation of two of the time codes (T2 and T3) on the slope factor, while fixing those associated with T1 and T4 to a respective value of 0 and 1. As a result, latent basis models do not impose any shape on the growth trajectories, and result in a slope factor representing the total amount of change occurring over the course of the study, while the freely estimated loadings describe the proportion of this change occurring by each time point. A latent basis model was retained for identification. A quadratic model was retained for LMX, perceived organizational support, stress, engagement, cynicism, performance, and satisfaction. Then, factor scores representing the intercept and slope(s) of these trajectories were saved and used in the main analyses (Morin, Maïano, et al., 2011). Details on all preliminary analyses (factor solutions, longitudinal invariance, correlations, reliability, and latent curve analyses) are described in the online supplements.

6.3. Growth Mixture Models (GMM)

To avoid imposing any specific shape on the psychological capital trajectories and to allow them to take a completely distinct shape within each of the profiles (Morin & Litalien, 2019), we relied on a latent basis specification (defined as in the preliminary latent curve analyses) of the main Growth Mixture Models (GMM). We thus estimated solutions including one to eight psychological capital trajectories, using 12,000 random starts, 2000 iterations, 2000 second stage optimizations, and 200 final optimizations (Hipp & Bauer, 2006). In GMM, all parameters (freely estimated latent basis loadings on the slope factor, intercepts and slope means, intercept and slope variance-covariance, and time-specific residuals) should ideally be freely estimated across profiles (Diallo et al., 2016; Morin, Maïano, et al., 2011). However, this recommendation comes with the recognition that this free estimation of all parameters often results in improper or nonconverging solutions due to overparameterization, which supports the need to rely on simpler models (Diallo et al., 2016; Morin & Litalien, 2019). When this happens, as in this study, equality constraints should be progressively implemented across profiles (Diallo et al., 2016). Following recommendations from Diallo et al. (2016), we relied on a parameterization in which the latent basis loadings on the slope factor, the means of the intercept and slope factors, and the time-specific residuals of the trajectories were freely estimated across profiles, while the variance-covariance of the intercept and slope factors were constrained to equality across profiles (i.e., Mplus' default parameterization for the latent variance-covariance in GMM).

The optimal number of profiles was determined by considering the theoretical conformity, heuristic meaning, and statistical adequacy of each solution (Marsh et al., 2009; Morin & Litalien, 2019; Muthén, 2003). This selection was also loosely guided by statistical indices, including the Akaike Information Criterion (AIC) and its consistent version (CAIC), the Bayesian Information Criterion (BIC) and its sample-size adjusted version (ABIC), and two types of likelihood ratio tests (LRT): (1) the Lo et al.'s (2001) adjusted LRT

(aLMR), and (2) the Bootstrap LRT (BLRT). When statistically significant, the aLMR or BLRT support the addition of a profile relative to the previous solution, whereas lower values on the AIC, CAIC, BIC, and ABIC suggest a superior model fit. According to statistical simulation studies, the CAIC, BIC, ABIC, and BLRT are effective guides of the optimal number of profiles, whereas the AIC and aLMR are not (e.g., Diallo et al., 2016, 2017; Nylund et al., 2007; Tein et al., 2013); we thus only report these two indicators to ensure complete disclosure and do not use them to guide model selection. However, these indicators are all impacted by sample size (Marsh et al., 2009), and thus often keep on suggesting the addition of profiles when even none are still necessary. In practice, statistical indicators are used to locate a set of viable solutions (the best fitting ones and adjacent models), which are then more thoroughly contrasted based on their parameter estimates. We finally report the entropy as an indicator of classification accuracy (0-no accuracy to 1-perfect accuracy).

6.4. Predictors of profile membership²

The intercept, linear slope, and quadratic slope factor scores representing participants' trajectories on the predictors were first integrated to the final solution following a sequential model comparison strategy first proposed by Diallo et al. (2017) and updated by Morin and Litalien (2019). First, we estimated a null effect model (P0), in which the associations between the intercept, linear slope, and quadratic slope of the predictor trajectories and participants' likelihood of profile membership, the intercepts of their psychological capital trajectories, and the slopes of their psychological capital trajectories were all constrained to be exactly 0. Second, we contrasted a series of models seeking to assess the role of the intercept of the predictors' trajectories on participants' likelihood of profile membership (P1), on the intercepts of their psychological capital trajectories in a way that was constrained to equality across profiles (P2) or allowed to vary across profiles (P3), and on the slopes of their psychological capital trajectories in a way that was constrained to equality across profiles (P4) or allowed to vary across profiles (P5). Each of those models was built upon the previously retained solution. Once the optimal representation of intercepts' effects was selected, we contrasted a second series of model to assess the role of the linear slope of the predictors' trajectories on participants' likelihood of profile membership (P6) and on the slopes of their psychological capital trajectories in a way that was constrained to equality across profiles (P7) or allowed to vary across profiles (P8). Finally, a third series of model was contrasted to assess the possible role of the quadratic slope of the predictors' trajectories on the slopes of participants' psychological capital trajectories in a way that was constrained to equality across profiles (P9) or allowed to vary across profiles (P10).

The time-specific residuals of participants' predictor trajectories (i.e., reflecting the extent to which their observed scores deviated from their model-implied predictor trajectories at each time point) were incorporated to the previously retained model to assess state-level associations (i.e., whether a short-term boost or drop in predictors resulted in short-term boosts or drops in psychological capital). These models were also estimated in sequence (Morin & Litalien, 2019), starting with a null effect model (TS1) followed by a model in which these effects were set to be equal over time points and profiles (TS2). We then considered models in which these effects were set to be equal over time but not across profiles (TS3), free to vary over time but not across profiles (TS4), and free to vary across time and profiles. We compared the fit of these alternative models using the aforementioned information criteria (CAIC, BIC, and ABIC), where observing a lower value on at least two out of three indicators supports the superiority of a solution (Diallo et al., 2017; Morin et al., 2016; Morin & Litalien, 2019).

6.5. Outcomes of profile membership

Finally, outcome levels (i.e., participants' scores on the intercept, linear slope, and quadratic slope of their outcome trajectories) were contrasted across profiles using the Mplus' Auxiliary (DCON) function (Asparouhov & Muthén, 2014; Lanza et al., 2013).

7. Results

7.1. Selection of the optimal number of profiles

The fit of the alternative unconditional GMM solutions is reported in the top section of Table 1. The CAIC, BIC, and ABIC all reached their lowest point at the six-profile solution, while the BLRT suggested a nine-profile solution (possibly as a result of its sample size dependency). We thus more thoroughly examined the six-profile solution, as well as adjacent solutions including five and seven profiles. The five-profile solution resulted in a meaningful set of profiles, distinct from one another, statistically proper, and fully interpretable. However, adding a sixth profile resulted in the arbitrary division of Profile 2 (from Fig. 1) into two smaller profiles following a virtually identical trajectory, whereas the seven-profile solution resulted in the estimation of an empty profile. The five-profile solution was retained for further analyses and interpretation. This solution is graphically presented in Fig. 1, and detailed parameter estimates are reported in Table 2. This solution has a high level of classification accuracy, ranging from 78.0 % to 93.0 % across profiles (see Table S9 in the online supplements), consistent with its high entropy value (0.806).

Profile 1 characterized 19.87 % of the trainees presenting initially close to average levels of psychological capital and following decreasing trajectories becoming particularly marked after week 14 (T2). We hereafter refer to this profile as reflecting a *Learning to*

² Preliminary analyses, available upon request from the authors, revealed a complete lack of association between the psychological capital trajectories (profiles, intercept, and slopes) and participants' demographic characteristics (age, sex, and prior education level).

Table 1
Results from the growth mixture analyses.

Model	LL	#fp	Scaling	AIC	CAIC	BIC	ABIC	Entropy	aLMR	BLRT
<i>Profiles of psychological capital trajectories</i>										
1 Profile	-4389.224	11	3.116	8800.449	8867.440	8856.440	8821.500	Na	Na	Na
2 Profiles	-3332.735	20	1.853	6705.470	6827.272	6807.272	6743.744	0.884	<0.001	<0.001
3 Profiles	-2914.725	29	1.469	5887.451	6064.063	6035.063	5942.948	0.822	<0.001	<0.001
4 Profiles	-2754.580	38	1.162	5585.160	5816.583	5778.583	5657.880	0.846	<0.001	<0.001
5 Profiles	-2675.374	47	1.350	5444.747	5730.981	5683.981	5534.690	0.805	0.196	<0.001
6 Profiles	-2615.055	56	1.276	5342.110	5683.154	5627.154	5449.276	0.872	0.076	<0.001
7 Profiles	-2601.087	65	1.256	5332.173	5728.028	5663.028	5456.563	0.817	0.701	<0.001
8 Profiles	-2586.248	74	0.930	5320.497	5771.162	5697.162	5462.109	0.871	0.583	<0.001
9 Profiles	-2549.081	83	0.952	5264.162	5769.638	5686.638	5422.998	0.852	0.976	1.000
10 Profiles	-2518.206	92	1.020	5220.412	5780.699	5688.699	5396.471	0.871	0.593	<0.001
<i>Predictors (profiles and trajectories)</i>										
P0. Null	-2675.374	4	1.000	5358.747	5383.108	5379.108	5366.402	0.805	Na	Na
P1. Intercept predicting C	-2605.777	12	0.9722	5235.553	5308.634	5296.634	5258.518	0.816	Na	Na
P1a. Intercept predicting C (LMX only)	-2612.458	8	1.0014	5240.916	5289.636	5281.636	5256.225	0.814	Na	Na
P1b. Intercept predicting C (POS only)	-2650.444	8	0.9639	5316.888	5365.609	5357.609	5332.198	0.809	Na	Na
P2. P1a + Intercept predicting I (inv.)	-2601.710	13	0.9655	5229.419	5308.590	5295.590	5254.297	0.815	Na	Na
P3. P1a + Intercept predicting I (var.)	-2577.201	22	0.9297	5198.401	5332.383	5310.383	5240.502	0.807	Na	Na
P4. P1a + Intercept predicting S (inv.)	-2612.067	10	0.9826	5244.133	5305.034	5295.034	5263.270	0.813	Na	Na
P5. P1a + Intercept predicting S (var.)	-2605.920	18	0.9855	5247.840	5357.461	5339.461	5282.286	0.813	Na	Na
P6. P1a + Lin. slope predicting C	-2552.533	16	1.2044	5137.065	5234.506	5218.506	5167.684	0.820	Na	Na
P6a. P1a + Lin. slope predicting C (LMX)	-2587.512	12	1.2084	5199.025	5272.106	5260.106	5221.989	0.816	Na	Na
P6b. P1a + Lin. slope predicting C (POS)	-2596.137	12	1.0908	5216.273	5289.354	5277.354	5239.238	0.815	Na	Na
P7. P6 + Lin. slope predicting S (inv.)	-2548.586	18	1.3153	5133.173	5242.794	5224.794	5167.619	0.820	Na	Na
P8. P6 + Lin. slope predicting S (var.)	-2510.526	26	1.4611	5073.053	5231.395	5205.395	5122.809	0.821	Na	Na
P8a. P6 + Lin. slope predicting S (var. LMX)	-2515.455	21	1.5164	5072.910	5200.802	5179.802	5113.098	0.822	Na	Na
P8b. P6 + Lin. slope predicting S (var. POS)	-2543.007	21	1.2371	5128.014	5255.906	5234.906	5168.202	0.818	Na	Na
P9. P8a + Quad. slope predicting S (inv.)	-2486.023	23	1.5199	5018.047	5158.118	5135.118	5062.061	0.827	Na	Na
P10. P8a + Quad. slope predicting S (var.)	-2433.293	31	1.6425	4928.586	5117.378	5086.378	4987.910	0.823	Na	Na
P10a. P8a + Quad. slope predicting S (var. LMX)	-2468.715	26	1.6253	4989.430	5147.772	5121.772	5039.186	0.822	Na	Na
P10b. P8a + Quad. slope predicting S (var. POS)	-2512.914	26	1.5412	5077.827	5236.169	5210.169	5127.583	0.822	Na	Na
<i>Predictors (time-specific residuals-TSR)</i>										
TS1. P10 + Null	-2433.293	31	1.6425	4928.586	5117.378	5086.378	4987.910	0.823	Na	Na
TS2. P10 + Effects inv. time & inv. profiles	-2394.921	33	1.7758	4855.843	5056.815	5023.815	4918.994	0.823	Na	Na
TS3. P10 + Effects inv. time & var. profiles	-2341.370	41	1.7801	4764.740	5014.433	4973.433	4843.201	0.831	Na	Na
TS4. P10 + Effects var. time & inv. profiles	-2287.097	39	1.6309	4652.194	4889.707	4850.707	4726.828	0.828	Na	Na
TS4a. P10 + Effects var. time & inv. -profiles (LMX)	-2361.954	35	1.7053	4793.908	5007.060	4972.060	4860.887	0.825	Na	Na
TS4b. P10 + Effects var. time & inv. profiles (POS)	-2342.046	35	2.0312	4754.093	4967.245	4932.245	4821.072	0.826	Na	Na
TS5. P10 + Effects var. time & var. profiles	-2179.215	71	1.3698	4500.430	4932.826	4861.826	4636.302	0.836	Na	Na

Note. LL: Model loglikelihood; #fp: Number of free parameters; Scaling: Scaling factor; AIC: Akaike Information Criteria; CAIC: Constant AIC; BIC: Bayesian Information Criteria; ABIC: Sample-Size adjusted BIC; aLMR: Adjusted Lo-Mendell-Rubin likelihood ratio test; BLRT: Parametric Bootstrapped Likelihood Ratio Test; Na: Not applicable; C: Profile membership; I: Intercept factor; S: Slope factor; LMX: Leader-member exchange; POS: Perceived organizational support.

Hate scenario. Profile 2 characterized 32.02 % of trainees presenting initially high (i.e., 0.4 SD above the mean) levels of psychological capital and following relatively stable trajectories, although these trajectories still displayed a decrease, as did all other profiles. We hereafter refer to this profile as reflecting a *High Fit* scenario. Profile 3 characterized 19.64 % of the trainees presenting initially close to average levels of psychological capital and following relatively stable trajectories, albeit still presenting a slight decreasing tendency. We hereafter refer to this profile as reflecting a *Moderate Fit* scenario. Profile 4 characterized 22.91 % of the trainees presenting initially

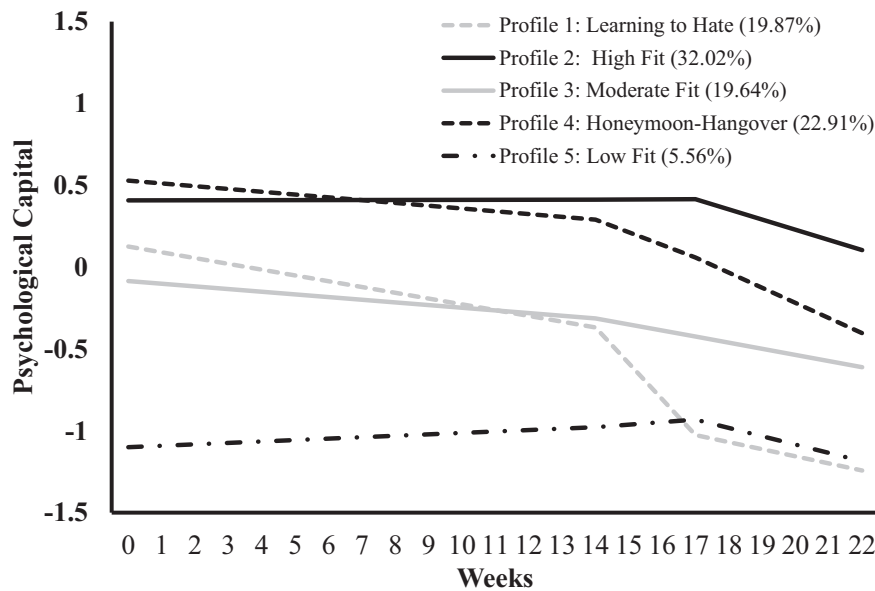


Fig. 1. Final five-profile solution: psychological capital trajectories. *Note.* Profile indicators are factor scores with a mean of 0 and a standard deviation of 1; Profile 1: Learning to Hate; Profile 2: High Fit; Profile 3: Moderate Fit; Profile 4: Honeymoon-Hangover; and Profile 5 Low Fit.

Table 2
Parameter estimates for the final unconditional growth mixture solution including five profiles.

	Profile 1 (Learning to Hate)	Profile 2 (High Fit)	Profile 3 (Moderate Fit)	Profile 4 (Honeymoon- Hangover)	Profile 5 (Low Fit)
	Estimate (t)	Estimate (t)	Estimate (t)	Estimate (t)	Estimate (t)
Intercept mean	0.126 (2.300)*	0.409 (11.065)**	-0.084 (-0.689)	0.530 (5.107)**	-1.105 (-8.230)**
Slope mean	-1.370 (-14.332)**	-0.303 (-5.903)**	-0.526 (-6.354)**	-0.933 (-13.383)**	-0.049 (-1.188)
Intercept variability (SD = $\sqrt{\sigma}$)	0.447 (7.343)**	0.447 (7.343)**	0.447 (7.343)**	0.447 (7.343)**	0.447 (7.343)**
Slope variability (SD = $\sqrt{\sigma}$)	0.329 (9.474)**	0.329 (9.474)**	0.329 (9.474)**	0.329 (9.474)**	0.329 (9.474)**
Intercept-slope correlation	-0.993 (-148.972)**	-0.993 (-148.972)**	-0.993 (-148.972)**	-0.993 (-148.972)**	-0.993 (-148.972)**
SD(eyi)_T1	0.205 (1.559)	0.265 (6.218)**	0.202 (2.090)*	0.138 (5.532)**	1.437 (5.146)**
SD(eyi)_T2	0.614 (7.292)**	0.285 (4.917)**	0.148 (2.961)**	0.071 (2.636)**	1.302 (3.462)**
SD(eyi)_T3	0.597 (5.726)**	0.295 (5.930)**	0.100 (1.572)	0.045 (3.981)**	0.993 (0.782)
SD(eyi)_T4	0.442 (5.540)**	0.668 (7.867)**	0.114 (1.384)	0.045 (1.186)	1.489 (4.295)**

Note. * $p \leq .05$; ** $p \leq .01$; t = Estimate/standard error of the estimate (t values are computed from the original variance estimate and not from the square root); SD(eyi) = Standard deviation of the time-specific residual; the square root of the estimate of variability (trajectory factor and time-specific residual) is presented so that the results can be interpreted in the same unit as the construct used in the model (standardized factor score with M = 0 and SD = 1).

high (i.e., 0.5 SD above the mean) levels of psychological capital and following decreasing trajectories becoming particularly marked after week 14 (T2). We hereafter refer to this profile as reflecting a *Honeymoon-Hangover* scenario. Finally, Profile 5 characterized 5.56 % of the trainees presenting initially low (i.e., 1.1 SD under the mean) levels of psychological capital and following stable trajectories. We hereafter refer to this profile as reflecting a *Low Fit* scenario. These results partially support [Hypothesis 1](#).

7.2. Predictors of profile membership

7.2.1. Predictor trajectories

The model fit results from the first series of predictive models (seeking to assess the associations between the intercept, linear slope, and quadratic slope of the predictors trajectories and psychological capital profiles of trajectories) are reported in the middle section of [Table 1](#). These results first reveal that allowing the intercept of the predictor trajectories to be associated with participants' likelihood of profile membership (P1) resulted in an improvement in model fit (lower value on the CAIC, BIC, and ABIC) relative to the null model (P0). However, an examination of the parameter estimates from this model suggests that this association could be limited to LMX. To

ensure retaining the most parsimonious model, we thus contrasted this model (P1) with two alternatives in which associations were limited to either the intercept of the LMX trajectories (P1a) or to the intercept of the perceived organizational support trajectories (P1b). The lowest values on the BIC, CAIC, and ABIC were associated with model P1a, suggesting that these associations were limited to the intercept of the LMX trajectories. Starting from this model, the intercept of the predictor trajectories did not share any other association with the psychological capital trajectories (i.e., models P2 to P5 all resulted in higher values on the CAIC and BIC relative to model P1a). Further analyses supported associations between the linear slope of both predictor trajectories and profile membership (P6). They also supported associations between the linear slope of the predictor trajectories and within-profile variations in the slope of the psychological capital trajectories that varied across profiles (P8). This last set of associations was, however, limited to LMX (P8a). Finally, results also supported the presence of associations between the quadratic slope of both predictor trajectories and within-profile variations in the slope of the psychological capital trajectories that varied across profiles (P10). This model was thus retained for interpretation and further analyses.

The results from model P10 are reported in first three sections of Table 3. These results first showed that higher initial levels of LMX were associated with a higher likelihood of membership into Profiles 1–2–3–4 relative to Profile 5 (*Low Fit*), which was the one displaying the lowest initial levels of psychological capital. They also predicted a higher likelihood of membership into Profiles 2 (*High Fit*) and 4 (*Honeymoon-Hangover*), which displayed the highest initial levels of psychological capital, relative to Profiles 1 (*Learning to Hate*) and 3 (*Moderate Fit*), both of which displayed lower initial levels of psychological capital. Initial levels of LMX did not, however, differentiate between pairs of profiles initially displaying comparably high (Profiles 2 and 4) or moderate (Profiles 1 and 3) levels of psychological capital. Increases over time (i.e., linear slope) in both predictor trajectories were associated with a higher likelihood of membership into Profiles 2 (*High Fit*), 3 (*Moderate Fit*), and 4 (*Honeymoon-Hangover*) relative to Profile 5 (*Low Fit*), which displayed the lowest levels of psychological capital throughout the study. Interestingly, the linear slope of both predictors did not differentiate between Profiles 1 (*Learning to Hate*) and 5 (*Low Fit*), which displayed comparably low levels of psychological capital by the end of the study. Likewise, increases over time (i.e., linear slope) in both predictor trajectories were associated with a higher likelihood of membership into the profile displaying the highest psychological capital trajectory (Profile 2: *High Fit*) relative to Profiles 1 (*Learning to Hate*), 3 (*Moderate Fit*), and 4 (*Honeymoon-Hangover*), as well as into Profile 4 (*Honeymoon-Hangover*) relative to profiles with lower levels of psychological capital by the end of the study (Profiles 1 – *Learning to Hate* and 3 – *Moderate Fit*) (one of those comparisons, between Profiles 4 and 3, was only statistically significant for LMX). Finally, increases over time (i.e., linear slope) in both predictor trajectories were associated with a higher likelihood of membership into Profile 3 (*Moderate Fit*) relative to Profile 1 (*Learning to Hate*). It is important to note that these results demonstrate that increases over time in LMX and perceived organizational support may help differentiate between pairs of profiles displaying similar initial levels of psychological capital but differing from one another by the end of the study (Profiles 1 vs. 3 and Profiles 2 vs. 4).

Turning to within-profile variations in psychological capital trajectories, we first found that linear increases over time in LMX levels were associated with within-profile increases in psychological capital trajectories in Profiles 1 (*Learning to Hate*), 2 (*High Fit*), and 3 (*Moderate Fit*), an effect that was more pronounced (i.e., size of the standardized coefficients) in Profile 1 (*Learning to Hate*), followed by Profile 2 (*High Fit*), and the lowest in Profile 3 (*Moderate Fit*). It is more complex to interpret the role played by the quadratic slopes of the predictor trajectories, which is fortunately made easier by the fact that the current study period covers the whole length of a professional training program. To better understand those effects, we need to keep in mind that a negative quadratic slope represents a U-shaped trajectory, whereas a positive quadratic slope represents an inverted-U-shaped trajectory. Results first showed a positive association between the quadratic slopes of both predictors and the slope of the psychological capital trajectories in Profiles 2 (*High Fit*) and 3 (*Moderate Fit*). These positive effects suggest that it might be possible to maximize psychological capital in these two profiles by maximizing LMX and perceived organizational support at the start and end of the training period (inverted-U-shaped trajectory). In contrast, maximizing LMX in the middle of the training period (negative effect, thus consistent with a U-shaped trajectory) helps maximize psychological capital levels (or at least limit their decline) in Profile 4 (*Honeymoon-Hangover*). Together, these results partially support Hypotheses 2, 3, 5, and 6.

7.2.2. Time-specific residuals (fluctuations) in predictor levels

The model fit results from the second series of predictive models (seeking to assess the role of time-specific fluctuations in predictor levels occurring at the state level) are reported in the bottom section of Table 1. These results supported time-specific associations involving both predictors that differed over time but not across profiles (model TS4 resulted in the lowest values on the CAIC and BIC). The results from model TS4 are reported in the bottom of Table 3 and showed that initial boosts in levels of LMX and perceived organizational support were associated with initial (T1) boosts in psychological capital levels, although these effects (i.e., standardized coefficients) were stronger for LMX than perceived organizational support. Similar benefits of temporary boosts in LMX (but not in perceived organizational support) were also observed at T2 and T3, but not at T4. Temporary boosts in perceived organizational support (but not in LMX) at the end of the training (T4) were also associated with temporary increases in psychological capital levels. These results support Hypotheses 4 and 7.

7.2.3. Summary

In summary, initial levels of LMX, as well as increases over time in LMX and perceived organizational support, support profiles displaying higher initial levels of psychological capital (*High Fit*, *Honeymoon-Hangover*) and limit the occurrence of profiles displaying lowest initial levels of psychological capital (*Low Fit*), with the remaining profiles falling in between (*Learning to Hate*, *Moderate Fit*). Changes over time in levels of LMX and perceived organizational support were able to differentiate between profiles displaying similar initial levels of psychological capital (*Learning to Hate* versus *Moderate Fit*, *High Fit* versus *Honeymoon-Hangover*). Moreover, increases in

Table 3
Results from the predictive analyses.

Predictor	Profile 1 vs. Profile 5			Profile 2 vs. Profile 5			Profile 3 vs. Profile 5			Profile 4 vs. Profile 5			Profile 1 vs. Profile 4		
	Coef.	s.e.	OR	Coef.	s.e.	OR	Coef.	s.e.	OR	Coef.	s.e.	OR	Coef.	s.e.	OR
Intercept LMX	1.680	0.407**	5.363	3.845	0.600**	>10	1.964	0.445**	7.129	3.768	0.510**	>10	-2.089	0.271**	0.124
Lin. slope LMX	1.661	1.122	5.263	6.817	1.844**	>10	3.639	1.322**	>10	4.362	1.400**	>10	-2.701	0.636**	0.067
Lin. slope POS	1.393	1.560	4.028	6.409	1.620**	>10	3.403	1.374*	>10	3.829	1.397**	>10	-2.436	0.842**	0.087

Predictor	Profile 2 vs. Profile 4			Profile 3 vs. Profile 4			Profile 1 vs. Profile 3			Profile 2 vs. Profile 3			Profile 1 vs. Profile 2		
	Coef.	s.e.	OR	Coef.	s.e.	OR	Coef.	s.e.	OR	Coef.	s.e.	OR	Coef.	s.e.	OR
Intercept LMX	0.076	0.275	1.079	-1.804	0.265**	0.165	-0.285	0.217	0.152	1.880	0.304**	>10	-2.165	0.350**	0.228
Lin. slope LMX	2.455	0.631**	>10	-0.723	0.308*	0.485	-1.978	0.589**	0.439	3.178	0.737**	>10	-5.156	1.138**	0.054
Lin. slope POS	2.580	0.603**	>10	-0.427	0.435	0.653	-2.009	0.893*	0.772	3.007	0.736**	>10	-5.016	1.261**	0.078

Predictor	Slope in Profile 1			Slope in Profile 2			Slope in Profile 3			Slope in Profile 4			Slope in Profile 5		
	Coef.	s.e.	β	Coef.	s.e.	β	Coef.	s.e.	β	Coef.	s.e.	B	Coef.	s.e.	β
Lin. slope LMX	0.847	0.423*	0.677	1.234	0.269**	0.650	0.258	0.117*	0.138	-0.040	0.075	-0.016	0.052	0.229	0.076
Quad. slope LMX	0.546	0.581	0.587	4.756	6.051**	0.700	4.141	0.945**	0.417	-1.505	0.441**	-0.117	2.198	1.712	0.592
Quad. slope POS	0.113	0.955	0.576	6.276	1.228**	0.506	2.922	0.607**	0.253	-0.740	0.511	-0.038	0.832	1.187	0.129

Predictor	TSR at Time 1			TSR at Time 2			TSR at Time 3			TSR at Time 4		
	Coef.	s.e.	β	Coef.	s.e.	β	Coef.	s.e.	β	Coef.	s.e.	β
TSR LMX	5.549	0.424**	0.207	0.518	0.151**	0.211	0.351	0.080**	0.152	-0.091	0.104	-0.033
TSR POS	32.209	0.077**	0.487	-0.188	0.163	-0.065	0.155	0.083	0.055	2.645	0.164**	0.580

Note. ** $p < .01$; * $p < .05$. LMX: Leader-member exchange; POS: Perceived organizational support; TSR: Time-specific residual; Coef: Regression coefficient (multinomial logistic regression coefficients for the prediction of profile membership; unstandardized multiple regression coefficients for the prediction of slope factor and time-specific residuals); SE: Standard error of the coefficient; OR: Odds ratio; β : Standardized multiple regression coefficient; the multinomial logistic regression coefficients and OR reflect the predictor effects on the likelihood of membership in the bottom listed profile relative to the top listed profile; Profile 1: Learning to Hate; Profile 2: High Fit; Profile 3: Moderate Fit; Profile 4: Honeymoon-Hangover; and Profile 5: Low Fit.

LMX encouraged increases in psychological capital in the *Learning to Hate*, *High Fit*, and *Moderate Fit* profile, while maximizing LMX and perceived organizational support at the start and end of training supported psychological capital in the *High Fit* and *Moderate Fit* profile. In contrast, maximizing LMX in the middle of training supported psychological capital in the *Honeymoon-Hangover* profile. Finally, temporary boosts in perceived organizational support were associated with boosts in psychological capital levels at the start and end of the training, whereas temporary boosts in LMX were associated with temporary boosts in psychological capital levels at T1, T2, and T3.

7.3. Outcomes of profile membership

The outcome results are reported in Table 4 and illustrated in Fig. 2. These results revealed clear differences across profiles that differed across outcomes and matched the shape of the profiles.

Initial levels of *identification* were the highest in Profile 2 (*High Fit*), followed by Profile 4 (*Honeymoon-Hangover*), then by Profile 3 (*Moderate Fit*), followed by Profile 1 (*Learning to Hate*), and finally by Profile 5 (*Low Fit*). Decreases in identification levels were lower in Profile 2 (*High Fit*), followed by Profiles 3 (*Moderate Fit*) and 4 (*Honeymoon-Hangover*), then by Profile 5 (*Low Fit*), and finally by Profile

Table 4
Associations between profile membership and the outcome trajectories.

		Profile 1 (Learning to Hate) Mean [95 % CI]	Profile 2 (High Fit) Mean [95 % CI]	Profile 3 (Moderate Fit) Mean [95 % CI]	Profile 4 (Honeymoon- Hangover) Mean [95 % CI]	Profile 5 (Low Fit) Mean [95 % CI]	Summary
Identification (Factor Scores: Standardized)	Intercept	-0.195 [-0.254; -0.136]	0.304 [0.290; 0.318]	-0.107 [-0.158; -0.056]	0.081 [0.054; 0.108]	-0.684 [-0.845; -0.523]	2 > 4 > 3 > 1 > 5
	Latent Basis Slope	-2.884 [-2.986; -2.782]	-1.144 [-1.203; -1.085]	-1.927 [-2.000; -1.854]	-1.882 [-1.949; -1.815]	-2.565 [-2.728; -2.402]	2 > 3 = 4 > 5 > 1
Engagement (Factor Scores: Standardized)	Intercept	0.169 [0.124; 0.214]	0.629 [0.604; 0.654]	0.385 [0.363; 0.407]	0.419 [0.399; 0.439]	0.143 [0.051; 0.235]	2 > 4 > 3 > 1 = 5
	Linear Slope	0.007 [-0.034; 0.048]	0.015 [-0.016; 0.046]	-0.149 [-0.198; -0.100]	0.092 [0.053; 0.131]	-0.310 [-0.426; -0.194]	4 > 1 = 2 > 3 > 5
	Quadratic Slope	-0.055 [-0.065; -0.045]	-0.022 [-0.028; -0.016]	-0.011 [-0.109; 0.087]	-0.047 [-0.055; -0.039]	-0.003 [-0.021; 0.015]	2 = 3 = 5 > 1 = 4
Performance (0 to 10; M = 6.59; SD = 1.96)	Intercept	6.914 [6.804; 7.024]	7.286 [7.213; 7.359]	6.919 [6.807; 7.031]	7.297 [7.213; 7.381]	6.703 [6.480; 6.926]	2 = 4 > 1 = 3 = 5
	Linear Slope	-0.448 [-0.483; -0.413]	-0.299 [-0.323; -0.275]	-0.424 [-0.459; -0.389]	-0.326 [-0.353; -0.299]	-0.522 [-0.595; -0.449]	2 = 4 > 3 > 5; 2 = 4 > 1 = 3; 1 = 5
	Quadratic Slope	0.045 [0.041; 0.049]	0.033 [0.029; 0.037]	0.045 [0.041; 0.049]	0.030 [0.026; 0.034]	0.052 [0.042; 0.062]	1 = 3 = 5 > 2 = 4
Satisfaction (1 to 4; M = 2.85; SD = 0.68)	Intercept	2.988 [2.945; 3.031]	3.096 [3.063; 3.129]	2.988 [2.943; 3.033]	3.108 [3.071; 3.145]	2.932 [2.844; 3.020]	2 = 4 > 1 = 3 = 5
	Linear Slope	-0.171 [-0.187; -0.155]	-0.114 [-0.124; -0.104]	-0.144 [-0.158; -0.130]	-0.137 [-0.149; -0.125]	-0.182 [-0.211; -0.153]	2 > 3 = 4 > 1 = 5
	Quadratic Slope	0.018 [0.016; 0.020]	0.011 [0.009; 0.013]	0.015 [0.013; 0.017]	0.013 [0.011; 0.015]	0.022 [0.016; 0.028]	5 > 3 > 2; 1 = 5 > 2 = 4; 1 = 3; 3 = 4
Cynicism (Factor Scores: Standardized)	Intercept	0.106 [0.002; 0.210]	-0.084 [-0.166; -0.002]	0.171 [0.067; 0.275]	-0.100 [-0.198; -0.002]	-0.114 [-0.312; 0.084]	1 = 3 > 2 = 4; 3 > 2 = 5; 1 = 5; 4 = 5
	Linear Slope	0.188 [0.174; 0.202]	0.207 [0.197; 0.217]	0.201 [0.187; 0.215]	0.204 [0.192; 0.216]	0.171 [0.146; 0.196]	2 = 3 = 4 > 5; 2 > 1 = 5; 1 = 3 = 4
	Quadratic Slope	-0.034 [-0.036; -0.032]	-0.031 [-0.033; -0.029]	-0.035 [-0.037; -0.033]	-0.031 [-0.033; -0.029]	-0.028 [-0.032; -0.024]	2 = 4 = 5 > 1 = 3
Stress (Factor Scores: Standardized)	Intercept	0.189 [0.079; 0.299]	-0.305 [-0.372; -0.238]	0.445 [0.327; 0.563]	-0.325 [-0.401; -0.249]	0.638 [0.413; 0.863]	3 = 5 > 1 > 2 = 4
	Linear Slope	0.041 [0.006; 0.076]	-0.027 [-0.054; 0.000]	-0.054 [-0.089; -0.019]	0.051 [0.020; 0.082]	-0.029 [-0.094; 0.036]	1 = 4 > 2 = 3; 4 > 2 = 3 = 5; 1 = 5
	Quadratic Slope	0.041 [0.033; 0.049]	0.020 [0.014; 0.026]	0.027 [0.021; 0.033]	0.022 [0.016; 0.028]	0.011 [-0.003; 0.025]	1 > 2 = 3 = 4; 1 > 3 > 5; 2 = 4 = 5

Note. CI: 95 % confidence interval.

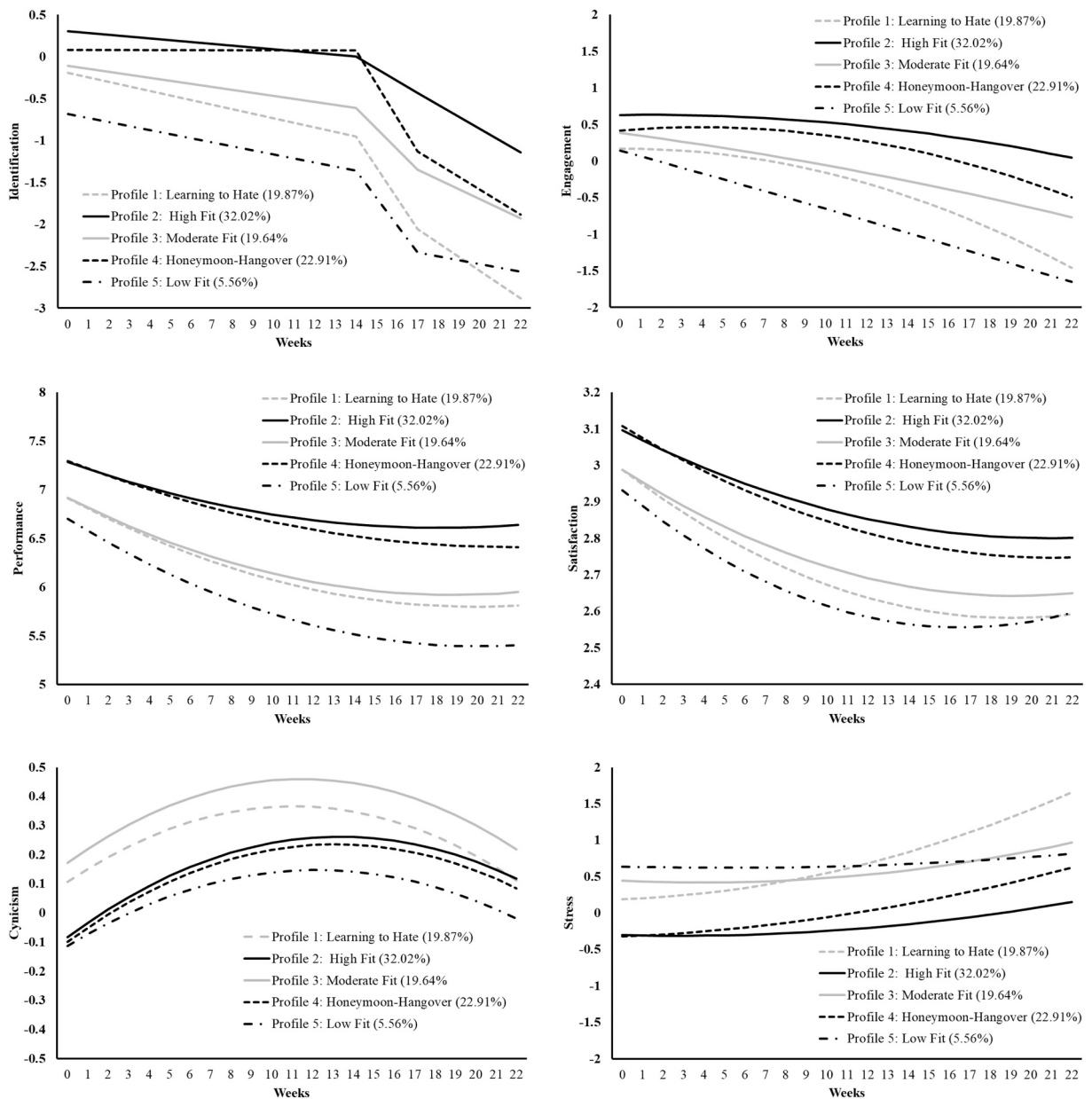


Fig. 2. Profile-specific outcome trajectories.

Note. Profile 1: Learning to Hate; Profile 2: High Fit; Profile 3: Moderate Fit; Profile 4: Honeymoon-Hangover; and Profile 5 Low Fit.

1 (*Learning to Hate*). The identification trajectories depicted in Fig. 2 revealed a decrease in all profiles starting in week 14. Identification levels remained highest in the *High Fit* and *Honeymoon-Hangover* profiles, where they were relatively stable until week 14, after which they started to decrease more importantly in the *Honeymoon-Hangover* profile to reach those observed in the *Moderate Fit* profile by the end of the study. Identification levels observed in both moderate profiles (*Moderate Fit* and *Learning to Hate*) were similarly average at the start of the study, and progressively decreased until week 14, after which they started to decrease more importantly in the *Learning to Hate* profile, which displayed the lowest levels of identification at the end of the study. Identification levels were initially low, and remained low, in the *Low Fit* profile, in which they underwent a temporarily more pronounced decrease between weeks 14 and 17. These results partially support Hypothesis 8a.

Initial levels of *engagement* were the highest in Profile 2 (*High Fit*), followed by Profile 4 (*Honeymoon-Hangover*), then by Profile 3 (*Moderate Fit*), and finally by Profiles 1 (*Learning to Hate*) and 5 (*Low Fit*). Decreases in engagement levels were lower in Profile 4 (*Honeymoon-Hangover*), followed by Profiles 1 (*Learning to Hate*) and 2 (*High Fit*), then by Profile 3 (*Moderate Fit*), and finally by Profile 5 (*Low Fit*). Engagement trajectories were also characterized by a slight curvilinear inverted-U-shaped trend, which was more

pronounced in Profiles 1 (*Learning to Hate*) and 4 (*Honeymoon-Hangover*) than in Profiles 2 (*High Fit*), 3 (*Moderate Fit*), and 5 (*Low Fit*). The engagement trajectories depicted in Fig. 2 revealed surprisingly similar initial levels of engagement across all profiles (despite the small aforementioned differences) that became increasingly differentiated over time. Thus, whereas initial levels of engagement remained fairly stable in the *High Fit* profile, they decreased linearly in the *Moderate Fit* and *Low Fit* profiles over the course of the study, a decrease that was particularly marked in the *Low Fit* profile. Moreover, although initially stable, the levels of engagement observed in the *Honeymoon-Hangover* and *Learning to Hate* profiles started to decrease increasingly rapidly after weeks 10–11, leading the *Learning to Hate* profile to reach levels as low as those of the *Low Fit* profile by the end of the study. These results partially support Hypothesis 8b.

Initial levels of performance were higher in Profiles 2 (*High Fit*) and 4 (*Honeymoon-Hangover*) relative to Profiles 1 (*Learning to Hate*), 3 (*Moderate Fit*), and 5 (*Low Fit*). Decreases in performance levels were lower in Profiles 2 (*High Fit*) and 4 (*Honeymoon-Hangover*) relative to Profiles 1 (*Learning to Hate*) and 3 (*Moderate Fit*), as well as in Profiles 2 (*High Fit*), 3 (*Moderate Fit*), and 4 (*Honeymoon-Hangover*) relative to Profile 5 (*Low Fit*). Performance trajectories were also characterized by a slight curvilinear inverted-U-shaped trend (similar to that of stress) which was more pronounced in Profiles 2 (*High Fit*) and 4 (*Honeymoon-Hangover*) than in Profiles 1 (*Learning to Hate*), 3 (*Moderate Fit*), and 5 (*Low Fit*). Performance trajectories depicted in Fig. 2 showed that the highest levels of performance were associated with the *High Fit* and *Honeymoon-Hangover* profiles over the course of the study (although performance levels were slightly lower in the latter profile by the end of the study). Performance levels were closer to average and similar over time in the *Moderate Fit* and *Learning to Hate* profiles, and persistently lowest in the *Low Fit* profile. These results support Hypothesis 8c.

Initial levels of satisfaction were higher in Profiles 2 (*High Fit*) and 4 (*Honeymoon-Hangover*) relative to Profiles 1 (*Learning to Hate*), 3 (*Moderate Fit*), and 5 (*Low Fit*). Decreases in satisfaction were lower in Profile 2 (*High Fit*), followed equally by Profiles 3 (*Moderate Fit*) and 4 (*Honeymoon-Hangover*), and finally by Profiles 1 (*Learning to Hate*) and 5 (*Low Fit*) which did not differ from one another. Satisfaction trajectories also displayed a curvilinear inverted-U-shaped trend (more pronounced than that of stress and performance) which was more pronounced in Profiles 1 (*Learning to Hate*) and 5 (*Low Fit*) than in Profiles 2 (*High Fit*) and 4 (*Honeymoon-Hangover*), as well as in Profile 5 (*Low Fit*) than in Profile 3 (*Moderate Fit*), and finally in Profile 3 (*Moderate Fit*) than in Profile 2 (*High Fit*). Satisfaction trajectories depicted in Fig. 2 revealed similar initial levels of satisfaction in the two high (*High Fit* and *Honeymoon-Hangover*) and in the two moderate (*Moderate Fit* and *Learning to Hate*) profiles, although these levels became increasingly different over time, being higher in the *High Fit* than in the *Honeymoon-Hangover* profile by the end of the study, as well as in the *Moderate Fit* profile than in the *Learning to Hate* profile by the end of the study. By the end of the study, satisfaction levels were similar in the *Learning to Hate* and *Low Fit* profiles. These results support Hypothesis 8d.

Initial levels of cynicism were higher in Profiles 1 (*Learning to Hate*) and 3 (*Moderate Fit*) relative to Profiles 2 (*High Fit*) and 4 (*Honeymoon-Hangover*), as well as in Profile 3 (*Moderate Fit*) relative to Profile 5 (*Low Fit*). Increases in cynicism levels were higher in Profiles 2 (*High Fit*), 3 (*Moderate Fit*), and 4 (*Honeymoon-Hangover*) relative to Profile 5 (*Low Fit*), as well as in Profile 2 (*High Fit*) relative to Profile 1 (*Learning to Hate*). Cynicism trajectories were also characterized by an inverted-U-shaped curvilinear trend (initial increase followed by a decrease), which was more pronounced in Profiles 1 (*Learning to Hate*) and 3 (*Moderate Fit*) than in Profiles 2 (*High Fit*), 4 (*Honeymoon-Hangover*), and 5 (*Low Fit*). Beyond these detailed results, the cynicism trajectories depicted in Fig. 2 essentially revealed higher levels of cynicism in the moderate (*Learning to Hate* and *Moderate Fit*) relative to high (*High Fit* and *Honeymoon-Hangover*) profiles, with the lowest levels observed in the *Low Fit* profile. In all profiles, these trajectories were curvilinear, displaying an initial increase until weeks 11–12 (*Learning to Hate*, *Moderate Fit*, and *Low Fit*) to 14–15 (*High Fit* and *Honeymoon-Hangover*), followed by a decreasing tendency. These results fail to support Hypothesis 8e.

Initial levels of stress were the highest in Profiles 3 (*Moderate Fit*) and 5 (*Low Fit*), followed by Profile 1 (*Learning to Hate*), and finally by Profiles 2 (*High Fit*) and 4 (*Honeymoon-Hangover*). Increases in stress levels were higher in Profiles 1 (*Learning to Hate*) and 4 (*Honeymoon-Hangover*) relative to Profiles 2 (*High Fit*) and 3 (*Moderate Fit*), as well as in Profile 4 (*Honeymoon-Hangover*) relative to Profile 5 (*Low Fit*). Stress trajectories also displayed a slight U-shaped curvilinear trend reflecting a progressive acceleration in the rate of change, which was more pronounced in Profile 1 (*Learning to Hate*) than in Profiles 2 (*High Fit*), 3 (*Moderate Fit*), and 4 (*Honeymoon-Hangover*), as well as in Profiles 1 (*Learning to Hate*) and 3 (*Moderate Fit*) relative to Profile 5 (*Low Fit*). The cynicism trajectories depicted in Fig. 2 revealed initially lower (and comparable) levels of stress in the high profiles (*High Fit* and *Honeymoon-Hangover*) which progressively increased in the *Honeymoon-Hangover* profile relative to the *High Fit* profile. Initial levels of stress were roughly comparable (despite the small aforementioned differences) in the remaining three profiles but remained mainly stable in the *Low Fit* and *Moderate Fit* profiles, whereas they increased substantially in the *Learning to Hate* profile, which displayed the highest levels of stress by the end of the study. These results partially support Hypothesis 8f.

In summary, outcome levels were more desirable in the two initially high profiles (*High Fit* and *Honeymoon-Hangover*) than in the two moderate profiles (*Moderate Fit* and *Learning to Hate*). In both cases, profiles with decreasing psychological capital trajectories (*Honeymoon-Hangover* and *Learning to Hate*) experienced a more pronounced decrease in outcome desirability over time relative to the more stable profiles (*High Fit* and *Moderate Fit*). By the end of the study, the outcome levels observed in the *Learning to Hate* profile were as problematic (i.e., engagement and satisfaction) or worse (i.e., stress and identification) as those associated with the *Low Fit* profile for most outcomes. Among the few exceptions, levels of performance and cynicism levels remained at their lowest in the *Low Fit* profile throughout the study period. A summary of all results as they pertain to each of our hypotheses is provided in Table 5.

8. Discussion

Despite the documented benefits of psychological capital (Avey et al., 2011; Luthans & Youssef-Morgan, 2017), with only a few exceptions (McAuley et al., 2011; Shan et al., 2023), most prior studies have ignored the dynamic nature of this construct (Choisy et al., 2021; Peng & Chen, 2023). The current study sought to address this limitation by focusing on the diverse psychological capital

Table 5
Summary of hypotheses and results.

Hypotheses	Results	Support
<i>Hypothesis about the shape of psychological capital trajectories</i>		
H1 Individual trajectories of psychological capital should match one of the following six profiles: Learning to Love, Learning to Hate, Honeymoon-Hangover, Low Fit, Moderate Fit, and High Fit	Five psychological capital profiles were found: 1- Learning to Hate, 2- Honeymoon-Hangover, 3- Low Fit, 4- Moderate Fit, and 5- High Fit trajectories	Partial support
<i>Hypotheses about predictors effects on psychological capital trajectories</i>		
H2a Higher initial levels of <i>perceived organizational support</i> will be associated with membership into profiles with initially higher levels of psychological capital	No statistically significant effect was found	Not supported
H2b Higher initial levels of <i>perceived organizational support</i> will be associated with initially higher within-profile trajectories of psychological capital	No statistically significant effect was found	Not supported
H2c Higher initial levels of <i>perceived organizational support</i> will be associated with increasing within-profile trajectories of psychological capital	No statistically significant effect was found	Not supported
H3a Increases in levels of <i>perceived organizational support</i> will be associated with membership into profiles with increasing levels of psychological capital	Increases in perceived organizational support were associated with a higher likelihood of membership into Profiles 2, 3, and 4 relative to Profile 5, into Profile 2 relative to Profiles 1, 3, and 4, and into Profile 3 relative to Profile 1	Full support
H3b Increases in levels of <i>perceived organizational support</i> will be associated with increasing within-profile trajectories of psychological capital	Increases in perceived organizational support at the start and end of the training was associated with increasing within-profile trajectories of psychological capital in Profiles 2 and 3	Partial support
H4 Increases in levels of <i>perceived organizational support</i> will be associated with more positive time-specific (state-like) increases in psychological capital levels	Short-term boosts in perceived organizational support at the start and end of the study were associated with short term boosts in psychological capital levels at matching time points.	Full support
H5a Higher initial levels of <i>LMX</i> will be associated with membership into profiles with initially higher levels of psychological capital	Higher initial levels of LMX were associated with a higher likelihood of membership into Profiles 1-2-3-4 relative to Profile 5, and into Profiles 2 and 4 relative to Profiles 1 and 3	Full support
H5b Higher initial levels of <i>LMX</i> will be associated with initially higher within-profile trajectories of psychological capital	No statistically significant effect was found	Not supported
H5c Higher initial levels of <i>LMX</i> will be associated with increasing within-profile trajectories of psychological capital	No statistically significant effect was found	Not supported
H6a Increases in levels of <i>LMX</i> will be associated with membership into profiles with increasing levels of psychological capital	Increases in LMX were associated with a higher likelihood of membership into Profiles 2, 3, and 4 relative to Profile 5, into Profile 2 relative to Profiles 1, 3, and 4, and into Profile 3 relative to Profile 1	Full support
H6b Increases in levels of <i>LMX</i> will be associated with increasing within-profile trajectories of psychological capital	Increases in LMX were associated with within-profile increases in psychological capital trajectories in Profiles 1, 2, and 3. Increases in LMX at the start and end of the training was associated with increasing within-profile trajectories in Profiles 2 and 3. Increases in LMX in the middle of the training was associated with increasing within-profile trajectories of psychological capital in Profile 4.	Partial support
H7 Increases in levels of <i>LMX</i> will be associated with more positive time-specific (state-like) increases in psychological capital levels	Short-term boosts in LMX were associated with short-term boosts in psychological capital levels at Times 1–2-3.	Full support
<i>Hypotheses about outcomes of psychological capital trajectories</i>		
8a Profiles with higher psychological capital will be associated with higher levels of identification with the organization at matching time points.	Initial levels of identification were the highest in Profile 2, followed by Profiles 4, 3, 1, and 5. Decreases in identification levels were lower in Profile 2, followed by Profiles 3 and 4, 5, and 1.	Partial support
8b Profiles with higher psychological capital will be associated with higher levels of engagement in the training program at matching time points.	Initial levels of engagement were the highest in Profile 2, followed by Profiles 4, 3, and 1 and 5. Decreases in engagement levels were lower in Profile 4, followed by Profiles 1 and 2, 3, and 5.	Partial support
8c Profiles with higher psychological capital will be associated with higher levels of performance in the training program at matching time points.	Initial levels of performance were higher in Profiles 2 and 4 relative to Profiles 1, 3, and 5. Decreases in performance levels were lower in Profiles 2 and 4 relative to Profiles 1 and 3, as well as in Profiles 2, 3, and 4 relative to Profile 5.	Full support
8d Profiles with higher psychological capital will be associated with higher levels of satisfaction toward the training program at matching time points.	Initial levels of satisfaction were higher in Profiles 2 and 4 relative to Profiles 1, 3, and 5. Decreases in satisfaction were lower in Profile 2, followed by Profiles 3 and 4, and 1 and 5.	Full support
8e Profiles with higher psychological capital will be associated with lower levels of organizational cynicism at matching time points.	Initial levels of cynicism were higher in Profiles 1 and 3 relative to Profiles 2 and 4, as well as in Profile 3 relative to Profile 5.	Partial support

(continued on next page)

Table 5 (continued)

Hypotheses	Results	Support	
8f	Profiles with higher psychological capital will be associated with lower levels of perceived stress at matching time points.	Increases in cynicism levels were higher in Profiles 2, 3, and 4 relative to Profile 5, as well as in Profile 2 relative to Profile 1. Initial levels of stress were the highest in Profiles 3 and 5, followed by Profiles 1, and 2 and 4. Increases in stress levels were higher in Profiles 1 and 4 relative to Profiles 2 and 3, as well as in Profile 4 relative to Profile 5.	Partial support

Note. LMX: Leader-member exchange. Profile 1: Learning to Hate; Profile 2: High Fit; Profile 3: Moderate Fit; Profile 4: Honeymoon-Hangover; and Profile 5: Low Fit.

trajectories observed among a sample of upcoming police officers followed over time during their vocational training program. To better understand what drives their emerging psychological capital trajectories, we also considered the role of trainees' perceptions of organizational support and LMX as dynamic predictors of these trajectories. Finally, to obtain a comprehensive perspective of the implications of these trajectories, we examined their associations with trainees' levels of organizational cynicism, identification with the organization, engagement in the training program, satisfaction toward the training program, perceived stress, and performance in the training program.

Distinct Profiles of Psychological Capital Trajectories.

Previous longitudinal studies of psychological capital have yielded inconsistent results, revealing stable (Jia et al., 2021; Yue et al., 2023), increasing (Aryani et al., 2021; Xie et al., 2021), or decreasing (Meyers et al., 2015; Peterson et al., 2011) average trajectories across the whole sample, while providing evidence of inter-individual variability in the shape of these trajectories. Although this variation in the average shape of the trajectories identified across studies suggests possible differences linked to the specific nature of the participants included in these studies, it also suggests the presence of subpopulations following distinctly-shaped trajectories. Of direct relevance to the current study, theoretical proposals from the socialization literature, specifically designed to explain the process whereby newcomers are progressively integrated to their new occupation, suggest the existence of a set of five types of trajectories based on the extent to which individual characteristics and expectations match their new occupational reality (e.g., Boswell et al., 2005; Solinger et al., 2013; Wong et al., 2023): (1) initially low-to-moderate trajectories that increase over time, reflecting a *Learning to Love* scenario; (2) moderate-to-high trajectories that initially increase or remain stable before starting to decrease over time, reflecting a *Honeymoon-Hangover* scenario; (3) low and stable trajectories, reflecting a *Low Fit* scenario; (4) high and stable trajectories, reflecting a *High Fit* scenario; and (5) moderate and stable trajectories, reflecting a *Moderate Fit* scenario.

In the present study, we specifically focused on the nature of the psychological capital trajectories present in a sample of participants undergoing a vocational training program to become police officers. Results revealed that these trajectories were best represented by five main profiles, with four of them matching one of the aforementioned theoretical scenarios: (2) *Honeymoon-Hangover*; (3) *Low Fit*; (4) *High Fit*; and (5) *Moderate Fit*. In fact, the only scenario that was not validated in this study was the (1) *Learning to Love* scenario, which could possibly be explained by our focus on the vocational training period. In other words, psychological capital trajectories can be expected to keep evolving after this vocational training period, and to keep on changing following entry into the workforce. Despite the value of a strong vocational training, a complete in-depth discovery of the real nature of their chosen profession will only occur once trainees truly enter their profession (e.g., Boswell et al., 2005; Solinger et al., 2013). Indeed, as long as they remain enrolled in a vocational training program, trainees are likely to remain cautious in terms of their identification, or lack thereof, with the police occupation, and those with initially low or moderate levels are unlikely to change their mind after a few weeks of training (e.g., Wanberg, 2012). Interestingly, Cheyroux et al. (2023) also failed to identify a profile consistent with a *Learning to Love* scenario while focusing on the engagement trajectories of nursing students followed over the course of their professional training program. It would thus be interesting for future research to investigate whether and how the profiles identified in this study keep on evolving once trainees truly enter the police occupation.

Moreover, our results also allowed us to uncover one additional profile, corresponding to a new *Learning to Hate* scenario. Although this scenario was not proposed by Solinger et al. (2013), these results suggest that some trainees may face a reality shock when entering their training program (Van Maanen & Schein, 1979) and thus come to experience a decrease in their levels of psychological capital right from the start (Boswell et al., 2005). Indeed, as they gather additional information about their role as police officers and the functioning of police organizations, these trainees may come to realize some unexpected negative attributes and boring aspects of their chosen occupation, leading them to question their initial decision to enroll in this training program (McCarty & Lawrence, 2016).

Considering the results in more details, three profiles displayed stable psychological capital trajectories over the course of the study (*Low Fit*, *Moderate Fit*, and *High Fit*). This observation is consistent with the results from previous studies highlighting that psychological capital tends to remain moderately to highly stable over time (Alessandri et al., 2018; Mei et al., 2022). However, the generic stability identified in these three profiles suggests that these trainees might be waiting to learn more about their occupation before changing their mind about how well it matches their initially high, moderate, or low expectations (Boswell et al., 2005; Solinger et al., 2013). In the meantime, those with high levels of psychological capital should be able to capitalize on this resource to obtain the energy and motivation needed to cope with training-related difficulties and challenges (Luthans & Youssef-Morgan, 2017). For them, the gain spiral highlighted in the conservation of resources theory (Hobfoll, 2002) suggests that maintaining these high levels of psychological capital are likely to facilitate access to other resources related to the achievement of training goals and well-being (Luthans et al., 2015). In contrast, for trainees with initially low levels of psychological capital, the opposite is likely to occur as their lack of energy

and motivation for their training program is likely to allow them to progressively fall more and more behind their colleagues over time (Wong et al., 2023). Once again, these hypotheses need to be more thoroughly investigated in longer term investigations.

In contrast, the remaining two profiles displayed a marked decrease in their psychological capital trajectories, reinforcing the idea that psychological capital displays reactivity to the training context (Demerouti et al., 2011) and suggesting increasing levels of dissatisfaction toward that training program or disappointment with the newly discovered nature of their chosen occupation. However, these two trajectories did not reflect the same training experiences. Indeed, trainees displaying a *Learning to Hate* trajectory experienced a decline in psychological capital throughout the training program, especially between T2 and T3. This period was devoted to a professional internship, suggesting that trainees did not appreciate their direct confrontation with their upcoming occupation. During the first few weeks of training, these trainees already had doubts about their ability to succeed and thrive in this future professional life as police officers, and that their experience in police stations during this internship only reinforced their view that this career was not the right one for them.

Conversely, trainees displaying a *Honeymoon-Hangover* trajectory initially maintained relatively high levels of psychological capital, suggesting that they may, at least initially, have found a good match between their expectations and actual experiences. Unfortunately, exposure to their upcoming occupational reality as part of their professional internship was not a success. Indeed, just like their peers following a *Learning to Hate* trajectory, trainees following a *Honeymoon-Hangover* trajectory experienced their sharpest decrease at the start of their professional internship. This decline continued to the end of the training program, suggesting that their internship made them doubt their future professional careers, and leading them to progressively disengage from their training. It was particularly concerning to note that 42.78 % of participants displayed one of those decreasing psychological capital trajectories (*Learning to Hate* and *Honeymoon-Hangover*). This result suggests that the frequent and numerous difficulties encountered by police officers in the performance of their duties contribute to thwart the aspirations of at least a subset of future professionals during the course of their internship, thus jeopardizing the future of an entire profession (Wong et al., 2023).

More generally, although the five profiles identified in this study reflect different training experiences, all of them displayed a decrease in psychological capital during the training period, which is consistent with the results from previous studies also reporting decreases in psychological capital trajectories (Meyers et al., 2015; Peterson et al., 2011). This decrease suggests that the training context may not be stimulating enough for trainees to change any bad impressions they may have (Gillet, Morin, et al., 2018), leading some trainees to display an increasingly passive role, thereby increasing their risk of experiencing failures or setbacks (Gillet et al., 2015). For instance, these trainees may develop negative relationships with trainers or colleagues, fail to understand the purpose of their training, or be unable to set realistic personal goals for themselves (Cheyroux et al., 2023). They may also be exposed to trainers who fail to provide them with purposeful, transparent, engaging, and challenging learning opportunities (Sandrin et al., 2022) connected to the true nature of the police occupation (Wong et al., 2023). Alternatively, discovering what the occupation truly entails might also be the reason for this increasing disappointment (e.g., Boswell et al., 2005; Solinger et al., 2013).

This decrease was particularly marked after week 14 in the *Honeymoon-Hangover*, *Moderate Fit*, and *Learning to Hate* profiles, while it was most visible after week 17 in the two other profiles (*Low Fit* and *High Fit*). These moments coincide with the internship period, which thus appears to play a major role in weakening trainees' psychological resources. Many reasons can be given for these detrimental effects, such as a reality check about police officers' professional activities, which are strewn with major challenges (e.g., incivility, violence, aggression), but also frustration among trainees who feel that their vocational training program is not in fully meeting their needs (e.g., insufficient training in human relations, discrepancies between the theoretical content taught and the actual functioning of the service). A recent study of first-year nursing students showed that longitudinal trajectories (covering multiple variables; e.g., program satisfaction) changed markedly during internship (Cheyroux et al., 2023). The present study supports this previous conclusion, confirming that the internship marks a decisive turning point for trainees across different types of public service occupations (nurses and police officers). To explain this result, Cheyroux et al. (2023) suggested that after a period of several weeks of training, the students' initial enthusiasm, associated with discovering a new environment, might have started to degrade, and that the internship represented a turning point in the evolutions of their views of their upcoming profession. It would thus appear important to consider capitalizing on this critical internship period to intervene in order to maintain or reinforce trainees' psychological resources (Sandrin et al., 2022).

Lastly, none of the profiles demonstrated a rebound effect after the internship period, suggesting that field experiences gained during internship may cast doubts in the minds of trainees, which can lead to disengagement among profiles unable to limit this decreasing tendency (i.e., *Learning to Hate* and *Honeymoon-Hangover*). The fact that some profiles seemed able to limit this downward trajectory (i.e., *High Fit* and *Moderate Fit*), suggest that quick actions can be taken by trainers to help break down this downward tendency (e.g., Ebner et al., 2021). It should be noted, however, that the change in trajectory that occurred at the beginning of the internship period (i.e., week 14) in the *Moderate Fit* profile was less pronounced than in other profiles. Detrimental effects of the internship may thus be less visible among trainees with moderate initial levels of psychological capital that decline slightly throughout training. Such trainees may not be priority targets for intervention, which would be more useful for trainees experiencing a significant decline in psychological capital during the internship (e.g., *Learning to Hate* profile). Following previous explanations, trainees with a *Moderate Fit* profile may arrive at the internship with different, and lower, expectations than others (e.g., *High Fit*). The gap between the professional training context and the reality of police work could be less important for them, resulting in more stable levels of psychological capital during internship. Beyond these hypothetical considerations, studies are needed to examine the reasons underlying this high prevalence of decreasing psychological capital trajectories among upcoming police officers.

8.1. Predictors of psychological capital trajectories

From a theoretical perspective, organizational support is seen as positively contributing to employees' perceptions of, and adaptation to, their work or training environment (Eisenberger & Stinglhamber, 2011; Kurtessis et al., 2017) via the development of psychological resources. As a result, institutional support is often positioned as a theoretically plausible driver of psychological capital (e.g., Bhatnagar & Aggarwal, 2020; Chan et al., 2022). Similarly, LMX provides employees with the psychological resources they need to cope with job demands and prior variable-centered research has demonstrated the positive effects of LMX on a variety of outcomes, including psychological capital (He et al., 2021; Johnson et al., 2023).

Supporting these observations, results revealed that higher initial levels of LMX were associated with a lower probability of membership into the *Low Fit* profile relative to all other profiles, as well as with a higher likelihood of membership into the *High Fit* and *Honeymoon-Hangover* profiles (characterized by the highest initial levels of psychological capital) relative to the *Learning to Hate* and *Moderate Fit* profiles. Similarly, linear increases over time in LMX and perceived organizational support had widespread benefits. Indeed, they were associated with a lower likelihood of membership into the *Low Fit* profile relative to the *High Fit*, *Moderate Fit*, and *Honeymoon-Hangover* profiles, with a higher likelihood of membership into the *High Fit* profile relative to the *Learning to Hate*, *Moderate Fit*, and *Honeymoon-Hangover* profiles, with a higher likelihood of membership into the *Honeymoon-Hangover* profile relative to the *Learning to Hate* and *Moderate Fit* profiles, and with a lower likelihood of membership into the *Learning to Hate* profile relative to the *Moderate Fit* profile. These observations are consistent with our expectations and previous reports of positive associations between employees' perceptions of LMX and organizational support and their levels of psychological capital (Bhatnagar & Aggarwal, 2020; He et al., 2021).

Although initial levels of LMX did not differentiate between pairs of profiles initially displaying comparably high (*High Fit* and *Honeymoon-Hangover* profiles) or moderate (*Moderate Fit* and *Learning to Hate* profiles) levels of psychological capital, changes over time in LMX and perceived organizational support seemed to help support membership into the profiles displaying the highest levels of psychological capital at the end of the study within each of these two pairs of profiles. In other words, increases in LMX and perceived organizational support over the course of the training program seemed to help to limit decreases in psychological capital trajectories, in addition to supporting membership in profiles displaying more desirable psychological capital trajectories. In contrast, changes over time in these predictor levels seemed unable to differentiate among profiles displaying similarly low levels of psychological capital by the end of the study (i.e., *Learning to Hate* and *Low Fit* profiles), suggesting that the benefits of these predictors remain limited, so that alternative intervention strategies should also be considered. In addition, although we did not formally test such hypotheses in this study, the positive effects of perceived organizational support and LMX on psychological capital could be explained, or even buffered, by individual and contextual characteristics (e.g., conscientiousness, emotional stability, equity sensitivity, trainer-trainee relationship tenure; Han et al., 2018; Jawahar et al., 2018; Sears & Han, 2021).

Beyond these effects on profile membership, it was also interesting to note that both predictors also shared multiple associations with within-profile inter-individual differences in the shape of the psychological capital trajectories and with time-specific fluctuations in psychological capital levels over time. For instance, linear increases over time in LMX levels had a more pronounced effect on within-profile increases in psychological capital trajectories in the *Learning to Hate* profile, followed by the *High Fit* profile, and finally by the *Moderate Fit* profile. Moreover, the results suggest that the levels of psychological capital in the *High Fit* and *Moderate Fit* profiles could be maximised by reinforcing trainees' perceptions of LMX and organizational support at the start and end of the training program. In contrast, results suggest that it may be possible to limit the drop in psychological capital trajectories observed in the *Honeymoon-Hangover* profile by increasing LMX in the middle of the training period. Moreover, short term boosts in LMX levels seem able to support similar short-term boosts in psychological capital levels early in the program (this effect becoming smaller over time), whereas short-term boosts in perceptions of organizational supports seem able to exert a similar effect at the start and end of the training program. Taken together, these results highlight the need to consider how the implementation of interventions strategies focused on these specific predictors might be structured over the course of the training program. In other words, specific boosts in LMX and perceived organizational support should be planned at the beginning and end of the program, while it might be wise to specifically provide higher levels of LMX in the middle of the program to trainees experiencing a sudden drop from initially high levels of psychological capital.

It would be interesting for future research to examine whether and how these effects generalize to other valuable sources of social support, such as peers or family members, or to other leadership behaviors (e.g., transformational and authentic leadership). More studies are also needed to examine whether and how the effects of LMX and perceived organizational support observed in this study generalize to other positive and detrimental outcomes (e.g., motivation, engagement, boredom).

8.2. Outcomes of psychological capital trajectories

Our results clearly demonstrated the importance of trainees' psychological capital trajectories for a variety of outcomes related to their attitudes (i.e., organizational cynicism, identification with the organization, engagement in the training program, and satisfaction toward the training program), psychological health (i.e., perceived stress), and behaviors (i.e., performance in the training program). More precisely, although they did not always differ significantly from all other profiles on all of these outcomes, the *Low Fit* profile displayed the highest initial levels of perceived stress, and the lowest initial levels of satisfaction toward the training program, performance and engagement in the training program, and identification with the organization. This profile also displayed the highest linear decreases over time in engagement in the training program and satisfaction toward the training program. Similarly, low initial levels of engagement, performance, and satisfaction were also found in the *Learning to Hate* profile, in which linear decreases in

satisfaction levels matched those observed in the *Low Fit* profile. The *Learning to Hate* profile also displayed the highest linear decrease over time in identification with the organization immediately followed by the *Low Fit* profile. Moreover, in terms of curvilinear trajectories, the *Learning to Hate* profile displayed the greatest accelerated rate of increase in perceived stress and accelerated rate of decrease in engagement, along with the *Honeymoon-Hangover* profile. In fact, it was interesting to note how similar were the outcome levels observed among these two profiles at the beginning and the end of the study, despite some variations in the shape taken by their trajectories over time. In fact, if we ignore cynicism (an outcome to which we will come back later), by the end of the study, the only differences between these profiles were limited to levels of performance and perceived stress which were slightly higher in the *Learning to Hate* profile (in which they matched those observed in the *Moderate Fit* profile).

In contrast, the *High Fit* and *Honeymoon-Hangover* profiles displayed the lowest initial levels of perceived stress, and the highest initial levels of satisfaction toward the training program, performance in the training program, engagement in the training program, and identification with the organization, although the *Honeymoon-Hangover* profile displayed slightly lower initial levels on these last two outcomes than the *High Fit* profile. Similarly, these two profiles displayed the lowest linear decreases over time in performance and satisfaction toward the training program, while the *High Fit* profile displayed the lowest linear decreases over time in identification with the organization. In terms of curvilinear trajectories, these two profiles also displayed the highest reduction in their decreasing performance and satisfaction trajectories over time, although levels observed on these two outcomes in the *High Fit* profile appeared slightly higher than those observed in the *Honeymoon-Hangover* profile by the end of the study. In fact, with the sole exception of cynicism, an outcome to which we will come back shortly, outcome levels appeared to be fairly similar, and highly desirable, in these two profiles at the start of the study, but became increasingly differentiated over time, showcasing the benefits of the *High Fit* profile (relative to the *Honeymoon-Hangover* one) by the end of the training period in terms of stress, engagement, performance, satisfaction and identification. Differences were particularly pronounced on this last outcome, due to the marked decrease in identification levels observed in the *Honeymoon-Hangover* after the start of the professional internship.

Taken together, and beyond supporting the differential implications of the profiles identified in this study, these results are entirely consistent with accumulating research evidence highlighting the multiple benefits of psychological capital (e.g., Avey et al., 2011; Luthans et al., 2007), as well as the idea that these benefits are still likely to differ as a function of the outcomes considered (e.g., Avey et al., 2011; Wu & Nguyen, 2019). This last observation reinforces the need to expand upon the present results to consider a wider range of outcome variables, a need which will become even more obvious when we consider cynicism. Moreover, these results also indicate that decreases over time in psychological capital seem to be particularly detrimental, regardless of trainees' initial level of psychological capital, thus replicating previous evidence to this effect (Johnson et al., 2023; Sen et al., 2023). From a practical standpoint, this suggests that it might be important to limit decreases in trainees' psychological capital in order to maintain adequate levels of functioning.

The pattern of results observed in relation to participants' levels of organizational cynicism was somewhat different from those presented above for the other outcomes. Indeed, whereas initial levels of cynicism were lower in the two profiles with the highest initial levels of psychological capital (*High Fit* and *Honeymoon-Hangover*) relative to the *Learning to Hate* and *Moderate Fit* profiles, these levels were higher in the *Moderate Fit* profile relative to the *Low Fit* profile (which displayed levels of cynicism similar to those observed in *High Fit* and *Honeymoon-Hangover* profiles). The latter results could be explained by the fact that trainees with a *Low Fit* profile might be convinced from the outset that this training program is not for them. They thus have low levels of cynicism, as they are resigned to struggle from the start of training. On the other hand, trainees with a *Moderate Fit* profile, who displayed the highest levels of cynicism throughout the study, might find themselves in a more ambiguous situation, with a desire to succeed that is accompanied by fears and uncertainties, particularly with regard to the functioning of the national police and the expectations that might be placed on them, leading to higher levels of organizational cynicism (Pfrombeck et al., 2020). More generally, trainees from the *Moderate Fit* profile may try to protect themselves by disconnecting from a training context they consider necessary but not necessarily stimulating (Cheyroux et al., 2023). These explanations are also aligned with the results showing that increases in cynicism were lower in the *Low Fit* profile relative to the *High Fit*, *Moderate Fit*, and *Honeymoon-Hangover* profiles.

Interestingly, increases in cynicism were also higher in the *High Fit* profile relative to the *Learning to Hate* profile. Trainees with a *High Fit* profile might exhibit higher levels of organizational cynicism, as they have a strong desire to succeed, but are also confronted with numerous difficulties inherent to the fulfillment of their professional mission (e.g., lack of preparation to face the new problems posed by a changing society, and in particular to cope with the increasing aggressiveness shown toward them by the population; Wong et al., 2023). In contrast, the lower increase in organizational cynicism observed in the *Learning to Hate* profile might come from the gradual realization of being in difficulty in this training program that they increasingly dislike, forcing them to increasingly distance themselves from their work. These trainees would find themselves in a situation comparable to that of trainees with a *Low Fit* profile, characterized by a low involvement in this training program and limited expectations from the national police, thus leading them to experience lower levels of organizational cynicism (Pfrombeck et al., 2020).

Lastly, it is noteworthy that trajectories of perceived stress, engagement in the training program, performance in the training program, and satisfaction toward the training program were characterized by a curvilinear trend mainly reflecting a reduction (cynicism, performance, and satisfaction) or an acceleration (stress and engagement) in the rate of change after T2. Similarly, the linear trajectories of identification with the organization were marked by a significant decline after T2. These results suggest that three months, and more generally the beginning of training, marks a critical period in the ongoing vocational training of upcoming police officers. As mentioned above, the excessive discrepancy between the vocational training program and the reality of everyday police work may create confusion and frustration for some trainees (Cheyroux et al., 2023). This may lead them to experience doubts and to question their relationship with the police organization. In such situations, they may feel that a gap is opening between them and the national police, which translates into a particularly marked drop in identification for all trainees enrolled in this vocational training

program. They identify less with their organization simply because they do not feel they share enough common values with it and their initial expectations are not met (Ellemers et al., 1999; Solinger et al., 2013).

8.3. Limitations and future directions

The current study offers the first examination of the nature, predictors, and outcomes of psychological capital trajectories over a period of five months and a half among a sample of participants undergoing a vocational training program to become police officers. Despite these strengths, this study also has limitations. First, we solely relied on self-report measures, which come with an increased risk of social desirability and self-report biases. Moreover, we had no information allowing us to differentiate attrition from the study and dropping out from the training itself. Future investigations should include more objective indicators of trainees' behaviors (e.g., absenteeism), retention (e.g., dropout), as well as multiple informants' ratings (e.g., peers, teachers). Second, this study involved a sample of French trainees followed over a period of five months and a half at the start of their police education. Other investigations will be needed to confirm the generalizability of findings across different cultures and countries, as well as the extent to which conclusions generalize to other predictors and outcomes. Although we considered predictors (i.e., perceived organizational support and LMX) of trainees' psychological capital trajectories, it would be interesting for upcoming investigations to incorporate other individual (e.g., motivation, passion) or organizational (e.g., perceived peer support, perceived justice) predictors of these trajectories, as well as a more diverse set of outcomes (e.g., objective performance, physical health, actual dropout). Lastly, longer-term studies would be important to monitor how unfolding psychological capital trajectories persist, change, or are completely reset across the transition from the training context into the professional workforce.

8.4. Practical implications

Our results highlight the importance for organizations and trainers to focus on trainees displaying persistently low or decreasing trajectories of psychological capital in their program. Indeed, these trainees seem to be exposed to higher risks of impaired functioning (e.g., high perceived stress, and low engagement in the training program and identification with the organization). In particular, we observed that trainees who start training with low initial levels of psychological capital remain at low levels throughout the span of their vocational training and do not have the chance to see their level of psychological capital increase as in a *Learning to Love* profile. Unfortunately, this *Low Fit* trajectory is associated with disastrous outcomes for these trainees (e.g., the lowest levels of engagement and performance in the program at the beginning and end of training). Such findings suggest that organizations need to be vigilant about how they recruit trainees and should, as much as possible, try to select individuals who already have a minimum of psychological capital before entering training. More importantly, organizations should try to put in place actions that allow trainees to increase their psychological resources from the start of training in order to develop a *Learning to Love* trajectory, corresponding to an increase in their psychological capital levels. For instance, emotional programs to help recruits manage their personal time, make proactive decisions, and create habits that allow them to distance themselves from the difficulties encountered in carrying out their professional duties could be proposed (McCarty & Lawrence, 2016). Training academies can also suggest that newcomers be accompanied by a mentor who can be an important source of information and who can be present to answer questions that arise during this initial adjustment phase (Wong et al., 2023). Importantly, such actions could allow some trainees to increase their psychological capital, but at the same time, they could also allow trainees with a *High Fit* profile to maintain high levels of psychological capital.

Furthermore, the three-month mark seems to represent a critical period at which trainees, after an initial familiarization with their new training context, may embark on more stable longitudinal trajectories. Likewise, the professional internship period, that forms a core component of this training, seems to represent a high risk period at which trainees are likely to experience a sense of disappointment with their upcoming occupational role. Focusing intervention efforts on these two critical periods thus seem to be a potentially fruitful approach to help trainees maintaining their levels of psychological capital. In what follows, we focus on organizational support and LMX, building on the findings highlighted in this research. However, this does not mean that these are the only possible levers of action (Luthans & Youssef-Morgan, 2017).

Our findings suggest that interventions seeking to improve organizational support may be useful to increase psychological capital among trainees displaying low levels of psychological capital. To nurture such perceptions of organizational support, it may be helpful to promote a supportive culture to help trainers break down the walls between themselves and trainees. In such environments, trainers and trainees come to share power and to be more attuned to one another identity and culture, resulting in higher opportunities for the co-creation of learning experiences and knowledge (e.g., participatory action research, project-based learning). Promoting procedural justice is also a meaningful way to increase organizational support (Eisenberger & Stinglhamber, 2011).

Moreover, LMX could also be promoted by implementing practices that promote justice and recognition (Gillet, Fouquereau, et al., 2018). In addition, human resources (HR) departments could offer training programs to help trainers realize how important LMX is to support trainees' learning and functioning, and to pass on tools needed to support LMX development. At the same time, if we consider that each trainer has limited time and resources to share with each trainee, HR departments could also transmit learning opportunities and socio-emotional support directly to trainers (Xu et al., 2019). Such training would help trainers understand that they can use social exchange to meet their organization's performance demands while taking into account trainees' needs in terms of work-life balance (Morganson et al., 2017).

9. Conclusion

The importance of facilitating the transition from vocational training into the workforce has led many calls for increased scientific attention seeking to achieve a better understanding of the mechanisms likely to support the success of this transition, for instance via a development of stronger psychological capital trajectories (Luthans et al., 2015; Peterson et al., 2011). In the current research, findings supported the idea that psychological capital plays an important role in the ongoing process of trainees' adaptation to their vocational training program over a total period of five months and a half (Avey et al., 2011; Luthans & Youssef, 2004). Furthermore, we found that the emergence of psychological capital was linked to exposure to training environments likely to nurture trainees' perceptions of organizational support and LMX, highlighting the benefits of investing in these two relational resources in the vocational training context. Finally, we also highlighted the importance of considering psychological capital trajectories among trainees by demonstrating the effects of these trajectories on their attitudes, psychological health, and behaviors. We hope that these findings will help generate future studies on the dynamic psychological capital trajectories of trainees, organizational newcomers, and more established employees, in order to achieve a more complete understanding of career-wide psychological capital trajectories. Moreover, we also hope that the insights generated in this study will help motivate the development and implementation of intervention procedures to help facilitate onboarding among police officers, as well as among many other types of employees.

CRedit authorship contribution statement

Nicolas Gillet: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Alexandre J.S. Morin:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Methodology, Formal analysis, Data curation. **Isabelle Huart:** Writing – review & editing, Validation, Supervision, Resources, Project administration, Investigation, Funding acquisition, Conceptualization. **Hélène Coillot:** Writing – review & editing, Software, Formal analysis, Data curation. **Mathieu Fiolet:** Validation, Supervision, Resources, Project administration, Investigation, Funding acquisition. **Evelyne Fouquereau:** Writing – review & editing, Validation, Supervision, Resources, Project administration, Methodology, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jvb.2024.104058>.

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