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Employee adaptive performance and job satisfaction during organizational crisis: the role of self-leadership

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ABSTRACT

This study tests the hypothesis that self-leadership is positively related with employee adaptive performance and job satisfaction in rapid change and unpredictable work environments. This assumption was tested through a quasi-experimental study regarding the implementation of a self-leadership training programme in the Private Banking department of an international bank. Change in private bankers' self-leadership, adaptive performance and job satisfaction was measured three times, over a period of 8 months. During the fourth month of the training programme implementation, the bank underwent an unexpected bailout. Fifty-two private bankers were randomly assigned to an experimental group ($n = 28$) and to a control group ($n = 24$). The results showed an increase in self-leadership, adaptive performance and job satisfaction for the experimental group, while job satisfaction decreased for participants in the control group. Our findings suggest that change in the level of self-leadership is positively related with change in the level of adaptive performance and job satisfaction over time. This study presents new evidence that individual adaptive performance and job satisfaction can be enhanced through self-leadership training. Self-leadership training can be used as a valuable tool to help organizations improve employees' adaptive performance and job satisfaction, especially during organizational crisis.

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KEYWORDS

Adaptive performance; job satisfaction; self-leadership; training

Introduction

The 2008–2013 Great Recession, which started with the housing bubble and spread to become a Eurozone crisis, was one of the most severe financial incidents of the last 100 years and its impact is still lasting (Jimeno, 2015). Following this event, the business environment of twenty-first century organizations became so volatile that professionals are now challenged to perform in a reality that is characterized by rapid change and unpredictable events (Baard, Rench, & Kozlowski, 2014).

Unpredictable events can be small changes happening in the workplace (e.g., a client cancelling a meeting; the introduction of a new procedure) or larger changes such as an organizational crisis, i.e., “a low-probability, high-impact event that threatens the viability of the organization and is characterized by ambiguity of cause, effect, and means of resolution, as well as by a belief that decisions must be made swiftly” (Pearson & Claire, 1998, p. 3). For professionals working under unpredictable conditions and especially for those being exposed to organizational crisis situations, there is a high probability that they will experience more negative emotions such as stress and anxiety (Neck & Manz, 1986; Pearson & Claire, 1998; Pulakos et al., 2002). Such emotional reactions are often caused by the perceived risk of losing one's job and by the urge to deliver immediate and effective responses (Leiter, 1992; Pearce & Clair, 1998; Staw, Sandelands, & Dutton, 1981). Following Pearce and Clair (1998), once an organizational crisis is triggered, successful performance can

be achieved if individuals engage in self-regulation (Bandura, 1991; Baumeister, Heatherton, & Tice, 1994; Bell & Kozlowski, 2002). As an example, research by Jimmieson, Nerina, Terry, and Callan (2004) suggests that individuals with high self-efficacy cope with stress better and feel more satisfied with their jobs than low self-efficacy individuals, after an organizational change process. If professionals do not have the capacity to self-regulate in unpredictable business environments, they will not only become less satisfied with their job, as they are less likely to perform adaptively when confronted with unexpected events (Baard et al., 2014; Grandey, 2000; Griffin, Neal, & Parker, 2007; Pulakos, Arad, Donovan, & Plamondon, 2000; Spector, 1986).

Thus, in order to thrive, professionals need to develop their self-regulatory capacity in a way that helps them maintaining or improving adaptive performance and job satisfaction in rapid change and unpredictable work environments (e.g., Avolio, Walumbwa, & Weber, 2009; Breevaart, Bakker, Demerouti, & Derks, 2015; Houghton & Yoho, 2005; Lee, Willis, & Tian, 2018; Manz, 1986, 2015; Pearson & Claire, 1998). Whereas adaptive performance regards individuals' responsive or anticipatory behaviours towards changes affecting job-related tasks (Jundt, Shoss, & Huang, 2015), job satisfaction regards individuals' job appraisals (Spector, 1986).

One psychological construct offering promising ground for the development of employees' self-regulatory strategies in the workplace is individual self-leadership, i.e., the process

through which individuals build intrinsic motivation to influence positive affect and performance during the pursuit of work-related goals (e.g., Breevaart et al., 2015; Manz, 1986; Stewart, Courtright, & Manz, 2011). Research on self-leadership suggests that it is positively related with performance (e.g., Curral & Marques-Quinteiro, 2009; Konradt, Andreßen, & Ellwart, 2009; Lucke & Furtner, 2015; Panagopoulos & Ogilvie, 2015; Prussia, Anderson, & Manz, 1998; Robert & Foti, 1998) and positive affect (e.g., Neck & Manz, 1996; Politis, 2006), and that it should also be related with how employees adapt to negative events in the workplace (e.g., Hauschildt & Konradt, 2012; Marques-Quinteiro & Curral, 2012).

Hence, the current research builds on self-leadership theory (Manz, 1986) to test the general assumption that self-leadership training and change in the level of individual self-leadership over time will help improving change in the level of employees' adaptive performance and job satisfaction over time; and that the level of change in adaptive performance and job satisfaction is positively related with the level of change in employees' self-leadership.

Participants in this study were 52 Private Bankers from an international bank. Hypotheses were tested by using a quasi-experimental research design where participants were randomly assigned to an experimental group receiving a self-leadership training intervention and a control group receiving no intervention. Self-leadership, adaptive performance and job satisfaction were measured three times over the course of 8 months. Between the second and third measurement, after the third module of the self-leadership training course (see Method section for further detail), the bank went through an unexpected bailout. Although none could have predicted this incident, it created an optimal setting for the study of self-leadership as an important predictor of employee adaptive performance and job satisfaction, before and during organizational crisis.

The contributions of this study to the organizational psychology and management literatures are threefold. First, through this research we are making a first empirical examination of how change in the level of individual self-leadership relates with change in the level of adaptive performance and job satisfaction over time. Second, this study expands self-leadership theory (Manz, 1986) by examining how individual self-leadership training can be used as one strategy that organizations can adopt to build their workforce self-regulatory capacity in face of uncertainty. Finally, through this study we are addressing previous calls regarding the urgency of conducting empirical studies on self-leadership in business-oriented organizations (e.g., Manz, 1986; Houghton & Neck, 2006) and within a longitudinal framework (Neck & Houghton, 2006; Stewart et al., 2011).

Theoretical background

Self-leadership

Self-leadership has been criticized for simply recasting classic psychological theories such as Bandura's (1991) social cognitive theory or Carver and Scheier's (2004) self-regulation theory. While these and other theories are descriptive and/or

deductive, which means that they are meant to describe psychological phenomena, self-leadership theory is normative in the sense that it *prescribes* how psychological phenomena are ought to happen. Self-leadership theory is a normative theory and it distinguishes itself from descriptive classic psychological theories such as Bandura's (1991) social cognitive theory or Carver and Scheier's (2004) self-regulation theory because it provides direction on how to improve individuals' self-regulatory capacity (Manz, 1986). As stressed by Neck and Houghton (2006), self-leadership regards the intentional implementation of psychological strategies (e.g., goal setting; performance expectancies) that are purpose driven and are designed to improve the self-regulation process by means of setting superordinate standards (i.e., reasons; motivations) that drive goals and behaviours (Neck & Manz, 2010). Whereas self-regulation regards the reduction in discrepancies that have can either have an internal (e.g., personal goals) or an external (e.g., organizational goals) source (Bandura, 1991), self-leadership regards the reduction, management and generation of discrepancies (Neck & Houghton, 2006).

Self-leadership is the process through which individuals influence and control personal behaviour, cognition and motivation in the workplace (Manz, 1986; Manz, 2015; Neck & Manz, 2010). This is achieved through the combined utilization of self-leadership's three components: behaviour-focused strategies, constructive thought pattern strategies and natural reward strategies (e.g., Manz, 1986; Neck & Houghton, 2006).

Behaviour-focused strategies

These include self-observation (i.e., individuals monitoring their own behaviour and deciding if their current actions are effective or need adaptation), self-goal setting (i.e., individuals adaptation of their professional and personal goals to fit changes in the work environment), self-reward (i.e., attributing rewards to oneself as a way to promote or discourage certain behaviours) and self-cueing (i.e., using memos, alarms or images to remember things that must be accomplished, and consequences of good or bad performance). Through self-observation, individuals consciously monitor their performance and whether performance is within standards. The use of self-observation and self-goal setting is enhanced by using self-reward and self-cueing. While self-reward is useful to promote self-motivation towards goal attainment, self-cueing helps individuals remembering the goals that need to be achieved and the rewards associated with them (e.g., Marques-Quinteiro & Curral, 2012; Politis, 2006).

Constructive thought pattern strategies

The performance-enhancing capabilities of behaviour-focused strategies are complemented by the cognitive-enhancing capabilities of constructive thought pattern strategies. These have the main function of helping individuals develop work-related functional thought patterns such as being optimistic or hopeful (e.g., Neck & Manz, 1996). Constructive thought pattern strategies regard questioning beliefs and assumptions (i.e., individuals assessing their own values and beliefs and determining if they should change them or not), self-dialogue (i.e., engaging in self-dialogue as a way to structure thoughts) and visualizing successful performance (i.e., building a positive

mindset towards the task, and mentally simulate the process of doing the task). Through constructive thought pattern strategies, individuals identify (and replace) dysfunctional beliefs by combining the assessment of values and beliefs with self-talk and mental imagery. Plus, self-talk builds structure into thinking patterns and through self-imagery individuals can prepare for different imagined scenarios (e.g., Marques-Quinteiro, Ramos-Villagrasa, Passos, & Curral, 2015; Manz & Neck, 1992).

Natural reward strategies

Finally, natural reward strategies concern the search and promotion of pleasant experiences during goal-striving activities. Natural reward strategies have been shown to improve employees' use of behaviour-focused strategies (Marques-Quinteiro & Curral, 2012) and to be necessary for innovation in healthcare (Gomes, Curral, Caetano, & Marques-Quinteiro, 2015). They aim at helping individuals develop pleasant and enjoyable feelings that build intrinsic motivation. Either by positive task modelling and/or suppressing task negative aspects, i.e., the exacerbation of positive issues and avoidance of those that are unpleasant through purposefully ignoring them; or by the proactive transformation of the environment and the nature of the task so that they become more satisfying to accomplish (Neck & Houghton, 2006).

Up to this point, we have made a brief summary of the state of the art regarding the operationalization of individual self-leadership and the relationship between individual self-leadership's constructs and work-related outcomes. In the next subsection, we will elaborate on the development of individual self-leadership as a three-dimensional construct.

Training self-leadership as a three-dimensional construct

Self-leadership literature proposes that individuals can learn how to use self-leadership to drive personal performance by receiving specific training (Manz, 1986; Neck & Houghton, 2006). Stewart, Carson, and Cardy (1996) found that self-leadership training promotes employees' self-direction, while Neck and Manz (1996) found self-leadership training led to higher mental performance and positive affect in the workplace. Self-leadership training can help individuals learn not only how to manage personal behaviour (Politis, 2006) but also how to manage the thoughts and emotions about other people and situations (Neck & Manz, 1996; Stewart et al., 1996). For instance, when individuals use behaviour-focused strategies (e.g., creating clearer goals and developing effective strategies to achieve goals), they become more capable of managing work flow and being proactive (e.g., Bailey, Barber, & Justice, 2018; Marques-Quinteiro & Curral, 2012). Striving to achieve goals, individuals meet obstacles along the way. The encountered obstacles can produce stress and create frustration (Bandura, 1991). The negativity of stress and frustration can be tackled if the individual learns how to use thought pattern and natural reward strategies that help them replace dysfunctional thoughts and affects for functional ones (e.g., Neck & Houghton, 2006; Neck & Manz, 1992; Unsworth & Mason, 2012).

Whereas previous self-leadership training initiatives have focused either on the development of behaviour-focused strategies or constructive thought pattern strategies (e.g., Neck & Manz, 1996; Politis, 2006; Roberts & Foti, 1998), in the current research we decided to regard all self-leadership dimensions. Developing self-leadership as a three-dimensional construct is fundamental to help individuals become the best autonomous work force they can be (Lucke & Furtner, 2015; Manz, 1986). This is particularly important for those organizational work environments that are dynamic, in the sense that change often happens in unpredictable ways and there are vast amounts of new information that need to be considered every day (Neck & Houghton, 2006; Stewart et al., 2011). Indeed, self-leadership as a three-dimensional construct cannot be fully understood if dismantled into its components, as has been reinforced by previous work from authors such as DiLiello and Houghton (2006), Houghton and Yoho (2005), or Gomes et al. (2015). Gomes et al., as an example, used cluster analysis to verify that there is a significant association between different self-leadership clusters and work role innovation in hospital nurses, and that nurses' work role innovation is more frequent in those clusters showing the combined utilization of more self-leadership strategies.

We anticipate that it is only through the development of behaviour-focused strategies, constructive thought pattern strategies and natural reward strategies that employees can become self-leaders and be in control of their own performance (e.g., Hauschildt & Konradt, 2012; Lucke & Furtner, 2015; Neck & Houghton, 2006; Neck & Manz, 2010). Following previous contributions on self-leadership training (e.g., Kör, 2016; Neck & Manz, 1996; Roberts & Foti, 1998; Stewart et al., 1996), we anticipate that the level of change in employees' self-leadership will improve over time as individuals receive training in each self-leadership sub-dimensions. Therefore, we hypothesize that:

Hypothesis 1: Self-leadership training has a positive relationship with the development of employees' self-leadership over time.

Up to this point, we have been theorizing about self-leadership training and the development of individual self-leadership over time. In the following section, we will elaborate on how self-leadership training can be utilized as an organizational tool to leverage adaptive performance and job satisfaction during organizational crisis.

Adaptive performance

Under conditions of high uncertainty and rapid changing conditions, adaptation is fundamental for professionals to thrive in twenty-first century organizations (Baard et al., 2014; Jundt et al., 2015; Pearson & Clair, 1998; Pulakos et al., 2002). In the organizational psychology and managerial literatures, two constructs that address employee adaptation in the workplace are adaptability and adaptive performance. While both constructs (a) encompass the general idea of *adaptation* in the workplace and (b) require self-regulatory capacity (Bell & Kozlowski, 2002; Pulakos et al., 2000, 2002), adaptability and

adaptive performance regard different forms of work-related adaptation. Whereas adaptability regards the degree to which individuals cope with, respond to and/or support changes that affect their roles as individuals, adaptive performance expands this view by incorporating both the behaviours and the potential to enact adaptive behaviours (Griffin et al., 2007; Hesketh & Neal, 1999).

We suggest that while adaptability can be regarded as the outcome of self-regulation *parisi*, it is a less proactive form of responding to change in the workplace (Hesketh & Neal, 1999; Pulakos, 2000). Differently, adaptive performance is a more proactive form of responding to change in the workplace because it involves anticipation (Hesketh & Neal, 1999). This suggests that in order to perform adaptively, individuals need not only to engage in the discrepancy-reduction process that is typical of self-regulation, as they also need to engage in the discrepancy-management and discrepancy-production that is typical of self-leadership (Manz, 1986; Neck & Houghton, 2006; Neck & Manz, 2010). Therefore, in the current study we have decided to focus on adaptive performance.

The research on employee adaptive performance offers a deeper understanding of the dynamic nature of individual performance under conditions of unpredictability (Pulakos et al., 2000). Because scholars and practitioners agree on the importance of adaptive performance in the workplace (e.g., Shoss, Witt, & Vera, 2012) and there are studies detailing the drivers of adaptive performance (e.g., Hans & Williams, 2008), very little is still known regarding the relationship between self-leadership and adaptive performance (Jundt et al., 2015). According to Pulakos et al. (2000), adaptive performance can be regarded as a multi-dimensional construct including behavioural dimensions such as creative problem-solving (i.e., the resolution of atypical, ill-defined and complex problems), dealing with uncertain or unpredictable work situations (i.e., the ability to adjust and solve unpredictable situations, shift focus and take reasonable action), learning new tasks, technologies and procedures (i.e., the ability to anticipate, prepare for, and learn skills needed for future job requirements), or handling work stress (i.e., the ability to remain calm under pressure, handle frustration, and act as a calming influence).

In organizational settings, as in other social systems, being able to perform adaptively is a requisite condition for sustainability. Adaptive performance comprises the collection of behavioural responses in which individuals engage when anticipating or experiencing uncertainty. Adaptive performance has been shown to be related with employee individual characteristics such as attitudes, personality, intelligence and self-efficacy (e.g., Pulakos et al., 2000, 2002). Research has also found a positive relationship between adaptive performance and learning, climate for innovation (Han & Williams, 2008) and transformational leadership (Charbonnier-Voirin, Akremi, & Vandenberghe, 2010). Additionally, research has found evidence suggesting that adaptive performance can be enhanced through training. Chen, Thomas, and Wallace (2005) suggested that receiving training in regulatory processes (i.e., action, transition and interpersonal processes) is positively related with adaptive performance. Building on these contributions, the current research tested the new

assumption that adaptive performance can be developed through self-leadership training.

Self-leadership and adaptive performance

Accumulating theoretical and empirical contributions suggest that self-leadership may be positively related with employee's adaptation in the workplace (e.g., Barber, Bailey, & Justice, 2018; Hauschildt & Konradt, 2012; Manz, 1986; Marques-Quinteiro & Curral, 2012; Marques-Quinteiro et al., 2015; Neck & Houghton, 2006; Neck & Manz, 1996; Pina E Cunha, Pacheco, Castanheira, & Rego, 2015; Stewart et al., 2011).

Self-leadership improves individuals' awareness of the environment and the motivation to engage in situational assessment and decision-making, regardless of the conditions (Manz, 1986). Self-leadership also builds individual capacity to perform complex tasks requiring adaptation (Neck, Stewart, & Manz, 1995; Stewart et al., 2011). Preliminary work developed by Marques-Quinteiro et al. (2015) found that self-leadership's constructive thought pattern strategies alone are positively correlated with individual adaptive performance. This might be due to individuals' tendency of using self-motivating strategies when engaging in adaptive performance. The most frequently observed self-motivation strategy in these circumstances is the restructuring of cognitions in order to develop alternative mindsets that fit the new environment. Additionally, when exposed to an unpredicted event, individuals might also engage in mental imagery to visualize and mentally simulate alternative strategies to solve the problem. This should increase the likelihood of success (Neck & Manz, 1996). Over time, as individuals learn how to use each self-leadership strategy, they will become more and more competent in combining one set of strategies with another in order to perform adaptively when dealing with unexpected events. As an example, individuals might combine goal setting with mental imagery to estimate what should be a realistic goal to establish given the anticipated scenarios. Individuals would then adjust their values and beliefs towards what they think is achievable and will use natural reward strategies to build the motivation they need to complete their task. Therefore, we hypothesized that:

Hypothesis 2: Self-leadership training has a positive relationship with the development of employees' adaptive performance over time.

Self-leadership and job satisfaction

Besides contributing to enhance the individual capacity to deal with unexpected events in the workplace, in the current research we have also theorized that self-leadership training should contribute to higher job satisfaction. Job satisfaction prevents psychological problems such as depression and anxiety (Faragher, Cass, & Cooper, 2005) and promotes workplace productivity (Judge, Thoresen, Bono, & Patton, 2001). Job satisfaction is considered a fairly stable individual appraisal of one's job and is linked to several attribute-like features such as self-efficacy, locus of control and self-esteem (Judge et al., 2001).

How individuals become more or less satisfied with their job is mostly dependent on the extent to which they are capable of self-regulating their emotions and are given sufficient freedom to perform (Spector, 1986). In crisis situations, job satisfaction is likely to drop because of the combined influence of an increase in anxiety and a decrease in individuals' perception of control over the environment (Spector, 1986). However, whereas the freedom to perform that is given to an individual is often determined by the organization or the supervisor, the extent to which individuals are capable of performing autonomously and remain emotionally balanced depends on their personal capacity to self-regulate effectively (Judge et al., 2001; Keith & Frese, 2005). Indeed, employee job satisfaction has been linked to self-regulatory constructs such as resilience (Matos, Neushotz, Griffin, & Fitzpatrick, 2010) and self-leadership (Neck & Manz, 1996; Sesen, Tabak, & Arli, 2017). Self-leadership promotes the development of more positive evaluations of one's job, specifically of the tasks performed and of the conditions in which performance happens (Neck & Manz, 2010; Neck et al., 1995). Through behaviour-focused strategies, individuals can define and monitor progress towards goals, administer their own rewards, and organize their work schedule. Individuals can also capitalize on constructive thought pattern strategies to visualize a meeting with a client or look on the bright side of negative events. All of this should help individuals being capable of maintaining the degree of autonomy that is given to them and remain intrinsically motivated to do their work, hence being satisfied.

Job satisfaction can also grow with the clarification of personal tasks and organizational roles (Brown & Peterson, 1993). Through constructive thought pattern strategies and natural reward strategies, individuals might be capable of developing the meaningfulness of why they do certain tasks that are not appealing (e.g., an employee sweeping the floor and cleaning tables at NASA with the motivation to help sending astronauts to space). Hence, we anticipate that as the self-leadership training progresses, individuals will learn how to build and maintain more positive appraisals of their current job because they will learn how to manage personal behaviour, cognition and affect. Individuals will first apply behaviour-focused strategies to set personal goals and contingent rewards, and then will combine this with constructive thought pattern strategies and natural reward strategies to develop a positive attitude towards their job. We anticipate that, over time, individuals will develop a more positive appraisal of their current job and will feel more satisfied about it (Spector, 1986). We hypothesized that:

Hypothesis 3: Self-leadership training has a positive relationship with the development of employees' job satisfaction over time.

Change in self-leadership as a mediator

Finally, we hypothesize that self-leadership training positively predicts the level of change in employees' adaptive performance and job satisfaction over time by changing the level of employees' self-leadership over time. As individuals begin to

learn how to use self-leadership strategies, hence being better at self-regulation, their capacity for adaptive performance in the workplace will grow as the training progresses (e.g., Furtner, Rauthmann, & Sachse, 2015; Necl & Manz, 2010). While behaviour-focused strategies might help individuals adapting their goals or finding new external sources of task motivation, constructive thought pattern strategies might improve the individual's planning and anticipation or help them develop a more positive attitude towards their work environment (e.g., Stewart et al., 2011). Similarly, as individuals begin to master self-leadership, it will become easier for them to feel satisfied with their current job. This should be particularly true once individuals have learned how to use natural reward strategies to help them reframing how they feel about their current job. Therefore, we hypothesize that:

Hypothesis 4: Change in the level of employee self-leadership over time will positively mediate the relationship between self-leadership training and change in the level of employee adaptive performance over time.

Hypothesis 5: Change in the level of employee self-leadership over time will positively mediate the relationship between self-leadership training and change in the level of employee job satisfaction over time.

Figure 1 summarizes the research model.

Method

Research context

The research context was the private banking department of one privately owned bank in the country, employing over 6,000 people. The bank was leading the private banking market segment with a share of 38% at the onset of the study. During the data collection and the training implementation process, the bank went through an organizational crisis consisting of a series of unexpected events, affecting its financial health and culminating in a bailout. The bailout took place about 2 weeks after the ending of the third module (see Figure 2).

The financial bailout and its imposed management measures impacted the private banking department dynamics. Changes targeted sales goals and performance management indicators and job security got under risk. Private bankers were facing hostile behaviours of their clients who lost a big part of personal (and family) life savings. During the training, participants reported hostile behaviours ranging from emotionally upset individual complaints (e.g., having clients crying, asking for their money, or screaming at the private bankers), through daily public demonstrations of groups of clients in front of their workplace, to life threats. For instance, one private banker reported a situation of having a hand gun flashed at him and another relocated his family out of town during the peak of the crisis, due to death threats.

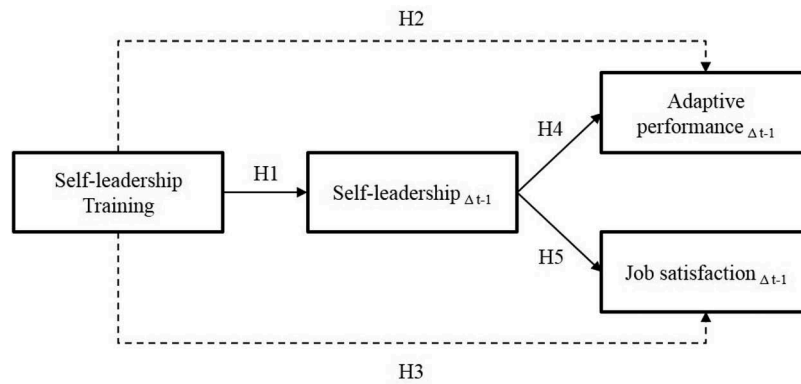


Figure 1. The research model with causal paths and hypotheses. $\Delta t-1$ represents the level of change in self-leadership, adaptive performance and job satisfaction.

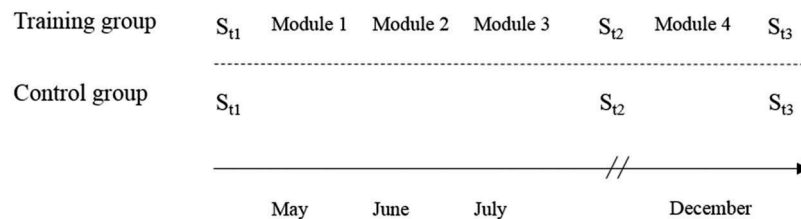


Figure 2. Training and data collection chronogram; “S” stands for survey; “t” stands for time.

Procedure

Research in organizational science has empirically demonstrated the importance of leadership training (e.g., Nadim & Singh, 2008) and training in general (Salas & Cannon-Bowers, 2001; Salas, Tannenbaum, Kraiger, & Smith-Jentsch, 2012), as an effective tool for behavioural change and performance enhancement. Whereas various forms of training exist (e.g., in-room; on-job; online), in the current study we adopted a blended training approach because it combines in-room (or face-to-face) training with online training and amplifies the benefits of in-room and online training when implemented alone. Participants undergoing a blended training programme often feel more engaged while learning and achieve better learning outcomes when compared with participants exposed to other training designs (Garrison & Kanuka, 2004). Blended training seems particularly appropriate for the development of employee self-leadership, as has been demonstrated in research by Furtner, Sachse, and Exenberger (2012) establishing the impact of a self-leadership-blended training programme in the development of self-leadership competence of university students, and research by Lucke and Furtner (2015) with Austrian soldiers.

Participants were informed that a consulting company designed a self-leadership development programme for the private banking department and were invited to collaborate in an academic study connected to the programme. Before being distributed across an experimental group vs. control group, all participants were informed that participation in the study was voluntary and that receiving the training intervention was independent from their decision to participate in this study. Furthermore, participants were also informed about the goals of the study and agreed that the resulting data would be used to develop a research paper.

Participants were randomly assigned to two groups. The experimental group was assigned to a blended training condition in which participants would engage in a self-leadership development programme. The control group did not receive any specific training on self-leadership. Further, both groups were equally aware of the study and received the same amount of emails inviting and encouraging participation. The control group was also informed that they would receive the training only when the experimental group had completed the self-leadership development programme.

The self-leadership development programme was organized in four modules. Modules 1–3 were given with a 2-week gap between them, and each module was dedicated to one self-leadership sub-dimension (Module 1 was about behaviour-focused strategies; Module 2 was about thought pattern strategies; and Module 3 was about natural reward strategies). Module 4 was implemented 6 months after Module 3 and consisted of a follow-up session. Its purpose was to evaluate to what extent participants had been successful in the implementation of self-leadership in their professional and private life; to clarify any remaining questions; to reinforce implementation; and to introduce the combined use of self-leadership strategies, in order to reinforce impact. Modules 1–4 were composed by two 4.5-h sessions each: one in-room session, and one online training session. Between each module, participants were encouraged to implement the self-leadership strategies in their daily work and private life, according to the goals they established. They also received feedback on their documentation of the implemented action plan and could communicate electronically with e-learning tutors during the course.

Participation in the class-room sessions as well as in the online modules was obligatory and reinforced by a point collecting system, i.e., each participant had to obtain a certain number of points in order to receive their course certificate. The attribution of points depended on their participation and the quality of their homework. All participants obtained at least the minimum number of points for their certificate.

Although no required sample size was calculated beforehand, our goal was to collect roughly 20 observations per research group on each data collection occasion (Simmons, Nelson, & Simonsohn, 2011). Online surveys were sent to participants by email. Data collection took place on three occasions: 1 week before Module 1 (time 1), 1 week after Module 3 (time 2) and 1 week after Module 4 (time 3). Data analysis was only performed once data collection was resumed. In the week after the second time of data collection (see Figure 1), the aforementioned organizational crisis and bailout occurred.

Participants

Participants in the study were 52 private banking employees from the bank's private banking department. Private bankers are often exposed to high levels of work-related stress and are expected to display extra role behaviours such as the ability to adapt to unexpected situations, act proactively and solve problems efficiently, on both technical and relational dimensions. On average, participants were 44.54 years old ($SD = 7.23$), 42% were female and had an average tenure of 11.71 years ($SD = 9.50$). Participants' average working time per week was 45.37 h ($SD = 11.19$), and 67.3% had at least completed high school or concluded a university degree.

Measures

Self-leadership

Self-leadership was measured using 21 items from the Revised Self-leadership Questionnaire (Houghton & Neck, 2002), adapted and validated by Marques-Quinteiro et al. (2012). Individuals responded using a 5-point Likert scale ranging between 1 (*never*) and 5 (*always*). One example item would be "I purposefully visualize myself performing well on important tasks" ($\alpha_{\text{time1}} = .83$; $\alpha_{\text{time2}} = .88$; $\alpha_{\text{time3}} = .91$).

Adaptive performance

Adaptive performance was assessed using 10 items developed by Marques-Quinteiro et al. (2015). Individuals responded using a 5-point Likert scale ranging between 1 (*totally ineffective*) and 5 (*totally effective*). One example item would be "Adjusting and dealing with unpredictable situations, shifting focus, and taking reasonable action" ($\alpha_{\text{time1}} = .80$; $\alpha_{\text{time2}} = .82$; $\alpha_{\text{time3}} = .91$).

Job satisfaction

Job satisfaction was assessed using four items from the Job Satisfaction Scale (Spector, 1997). Individuals responded using a Likert-type scale ranging between 1 (*totally unsatisfied*) and 5 (*totally satisfied*). One example item would be "How satisfied

are you with your current function?" ($\alpha_{\text{time1}} = .84$; $\alpha_{\text{time2}} = .81$; $\alpha_{\text{time3}} = .72$).

Missing data

Research with longitudinal data is challenged with missing data (Graham, 2009).

Sixty private bankers were initially enrolled in the study. Throughout the training and data collection process, some participants either abandoned the bank ($n = 5$) or moved to other roles ($n = 3$), hence dropping the training programme and participation in the study. For this reason, their responses were excluded from the analysis from the beginning. Throughout the data collection process, no participant returned incomplete questionnaires, although several individuals failed to enrol in at least one data collection episode. This caused missing data patterns due to attrition. Attrition varied between 4.65% (survey 1) and 45.9% (survey 3). The overall number of incomplete cases was 18.3%, and the overall number of incomplete values was 25.14%.

Regarding the pattern of missing data, Graham (2009) identifies three possible patterns: Missing completely at random (MCAR; no patterns in missing data, and the missing values are not related to any variables under study), missing at random (MAR; no patterns in missing data, and probability of having a missing datapoint is related to another variable in the data set but is not related to the variable of interest), and not missing at random (NMAR; pattern of missing data where the likelihood of missingness is related to the score on that same variable had the participant responded).

To determine the pattern of missing data in our study, we performed Little's (1988) MCAR test using the Missing Values Analysis command option in SPSS 22. The variables included to perform the test were all the measures of self-leadership, adaptive performance and job satisfaction over time. The analysis of the MCAR test returned a non-significant chi-square value ($\chi^2 = 111.53$, $d.f = 113$, $p = .57$). This result indicates that the pattern of missing data is MCAR (Little, 1988). MCAR is easily managed by using sophisticated stochastic imputation methods such as multiple imputations (MI; Schlomer, Bauman, & Card, 2010). Multiple imputation outperforms simpler (e.g., listwise deletion; mean substitution), and more complex (e.g., stochastic regressions; expectation maximization) procedures to handle missing data (Schlomer et al., 2010), and is less computationally demanding than full information maximum likelihood. Multiple imputation performs well with small samples ($N < 100$). It takes the degree of similarity or difference between inputted data as auxiliary information to estimate standard errors, hence producing less biased solutions than stochastic regression or expectation maximization (Schlomer et al., 2010). In this study, MI was performed in SPSS 22 using the Default 5 imputation option for missing data estimation.

Results

Table 1 shows the mean values and standard deviations for the variables examined, for the training and control groups. An independent samples *t* test was performed to determine the homogeneity between groups before the start of the

Table 1. Mean and standard deviations.

	Experimental group						Control group					
	Time 1		Time 2		Time 3		Time 1		Time 2		Time 3	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Self-leadership.	3.62	0.07	3.96	0.07	4.06	0.08	3.75	0.07	3.82	0.08	3.87	0.08
Adaptive performance.	3.84	0.07	4.11	0.07	4.13	0.08	4.02	0.07	4.06	0.08	4.08	0.09
Job satisfaction.	3.82	0.67	4.11	0.53	4.00	0.44	4.15	0.42	4.22	0.45	4.00	0.45

$n_{\text{experimental group}} = 28$. $n_{\text{control group}} = 24$

training programme. The results suggest that there are no significant differences between groups regarding self-leadership, $t(50) = -1.35$, $SD = 0.10$, $p = .18$, 95% CI [-0.334; 0.066], and adaptive performance, $t(50) = -1.84$, $SD = 0.10$, $p = .07$, 95% CI [-0.388; 0.017]; and that participants in the control group were significantly more satisfied with their job than participants in the experimental group, $t(50) = -2.11$, $SD = 0.16$, $p = .04$, 95% CI [0.158; 0.651].

Testing of repeated measured ANOVA preliminary assumptions

Before the testing of Hypotheses 1 through 3, which should be performed using a mixed repeated measures ANOVA with group (training vs. control) as a between-subjects variable and time (1, 2 and 3) as a within-subjects variable, there were three conditions that had to be met beforehand: (a) the variables under study must have normal distribution, (b) variances must be homogenous and (c) the measurement correlations over time have to be equal (Arminger, Clogg, & Sobel, 2013).

To test if the variables under study had normal distribution, the Shapiro–Wilk test was performed (Razali & Wah, 2011). The results suggest that job satisfaction was normally distributed for every measure collected in the experimental group, Shapiro–Wilk_{time 1}(28) = .75, $p < .001$, Shapiro–Wilk_{time 2}(28) = .93, $p = .05$, and Shapiro–Wilk_{time 3}(28) = .82, $p < .001$; and in the control group, Shapiro–Wilk_{time 1}(24) = .86, $p = .003$, Shapiro–Wilk_{time 2}(24) = .90, $p = .025$, and Shapiro–Wilk_{time 3}(24) = .86, $p = .003$.

Regarding the measures of self-leadership and adaptive performance from the experimental group, only the first measurement of self-leadership, Shapiro–Wilk_{time 1}(28) = .92, $p = .028$, and the third measurement of adaptive performance, Shapiro–Wilk_{time 3}(28) = .77, $p < .001$, showed evidence of being normally distributed. The outcome of the Shapiro–Wilk test for the remaining measures from the experimental group, Shapiro–Wilk(28) $\leq .97$, $p \geq .101$, and the control group, Shapiro–Wilk(23) $\leq .96$, $p \geq .142$, suggested that these were not normally distributed. Hence, only 8 out of 18 measurements showed normal distribution. However, research by Schmider, Ziegler, Danay, Beyer, and Bühner (2010) suggests that in the ANOVA, the empirical type I error α and the empirical type II error β remain constant under violation of the normality assumption. Hence, the ANOVA test is robust to violations of normality and any violation should not be regarded as problematic (Arminger et al., 2013; Schmider et al., 2010).

To test for the homogeneity of variances, the Levene test was performed. The Levene test is an inferential statistical test that allows the estimation of the equality of variances for a

variable that is estimated for two or more groups (e.g., control group and intervention group). Since the Levene test tests the null hypothesis that the population variances are homogeneous, when the resulting p -value is $< .05$ the null hypothesis of equal variances is rejected and it is concluded that there is a difference between the variances in the population (Arminger et al., 2013). The results of the Levene test suggest that the assumption of the homogeneity of variances for self-leadership, $F_{\text{time 1}}(1, 50) = 1.22$, $p = .275$, $F_{\text{time 2}}(1, 50) = 0.68$, $p = .413$, $F_{\text{time 3}}(1, 50) = 0.58$, $p = .451$, adaptive performance, $F_{\text{time 1}}(1, 50) = 0.01$, $p = .970$, $F_{\text{time 2}}(1, 50) = 0.11$, $p = .738$, $F_{\text{time 3}}(1, 50) = 0.72$, $p = .401$ and job satisfaction, $F_{\text{time 1}}(1, 50) = 0.68$, $p = .413$, $F_{\text{time 2}}(1, 50) = 0.00$, $p = .998$, $F_{\text{time 3}}(1, 50) = 0.05$, $p = .831$, was supported.

Finally, to test if the measurement correlations over time were equal, the Mauchly's Test of Sphericity was performed. The F values of repeated measures ANOVA with at least three datapoints can be inflated because of autocorrelation between the participants' responses over time. This is problematic since it can lead to Type I errors (O'Brien & Kaiser, 1985). Performing the Mauchly's Test of Sphericity, we found that the sphericity principle was not violated for job satisfaction over time, $\chi^2(2) = 0.94$, $p = .23$; but that it was violated for participants ratings of self-leadership, $\chi^2(2) = 0.81$, $p = .006$, and adaptive performance, $\chi^2(2) = 0.77$, $p = .001$. In order to deal with autocorrelation, the Greenhouse-Geisser correction for repeated measures ANOVA was used (O'Brien & Kaiser, 1985). Table 4 reports the within-subject correlations for self-leadership, adaptive performance and job satisfaction.

Since the ANOVA test is robust to violations of the normality assumption (Schmider et al., 2010), our data had homogenous variance and sphericity can be managed by means of Greenhouse-Geisser correction (O'Brien & Kaiser, 1985), we continued with the testing of Hypotheses 1 through 3 using a mixed repeated measures ANOVA with group (training vs. control) as a between-subjects variable and time (1, 2 and 3) as a within-subjects variable.

Hypotheses testing

Figures 3–5 display the trajectories for self-leadership, adaptive performance and job satisfaction (respectively), for the experimental group and the control group. The results yielded a main effect of time on self-leadership, $F(1.68, 84.19) = 16.27$, $p < .001$, $\eta^2_p = .25$, $\pi = 0.99$, qualified by an interaction between time and group, $F(1.68, 84.19) = 5.89$, $p = .004$, $\eta^2_p = .11$, $\pi = 0.82$. Pairwise comparison analyses revealed that groups significantly differed in terms of self-leadership gains over time. The results in Table 2 further show that while

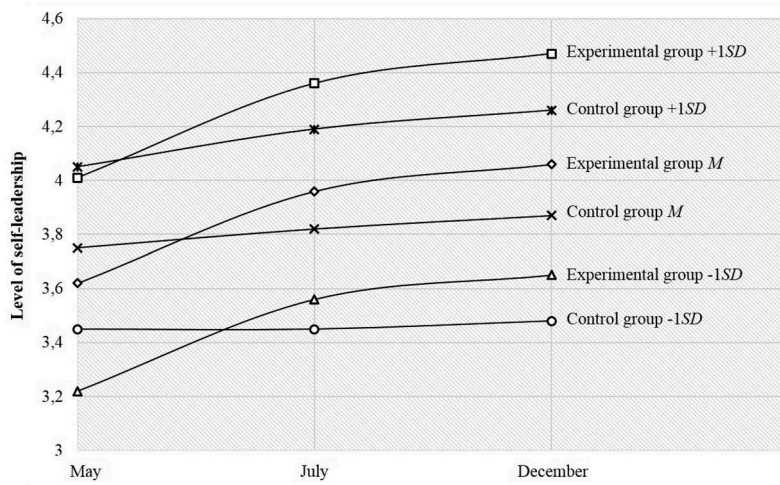


Figure 3. Graph lines for the mean plus minus 1 standard deviation for self-leadership, for the control and the experimental groups.

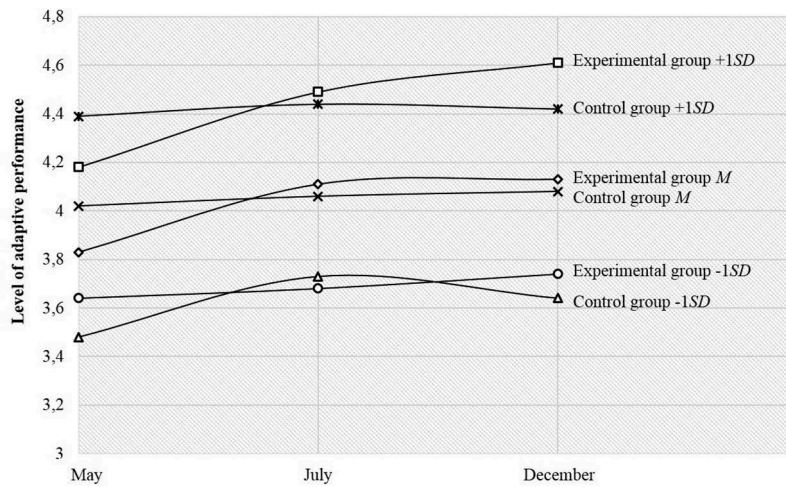


Figure 4. Graph lines for the mean plus minus 1 standard deviation for adaptive performance, for the control and the experimental groups.

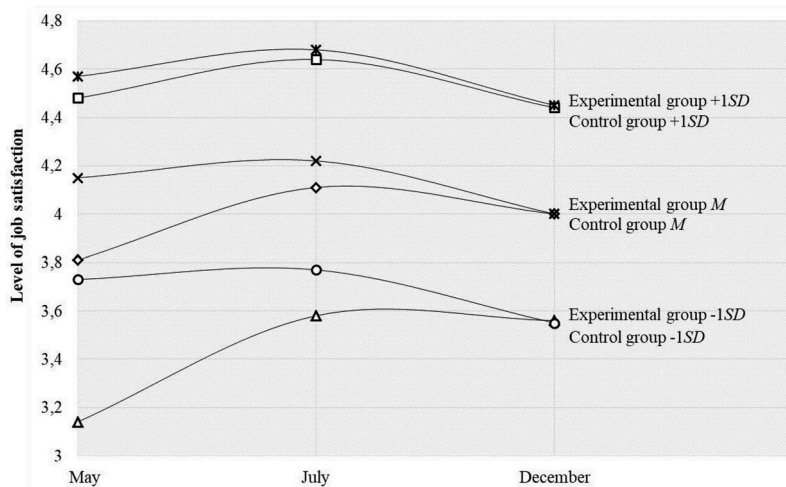


Figure 5. Graph lines for the mean plus minus 1 standard deviation for job satisfaction, for the control and the experimental groups.

self-leadership significantly improved for participants in the experimental group from Time 1 to Time 2, $M = -0.34$, $SE = 0.08$, $p < .001$, 95% CI $[-0.49, -0.18]$, and from time 1 to

time 3, $M = -0.44$, $SE = 0.08$, $p < .001$, 95% CI $[-0.59, -0.29]$; no significant change was observed for participants in the experi-

Table 2. Pairwise comparisons.

		(i) time	(j) time	Mean difference (i-j)	SE	$p < .05$	95% CI	
							Lower limit	Upper limit
Self-leadership	Experimental group	1	2	-.34**	.08	.00	-.49	-.18
		1	3	-.44**	.08	.00	-.59	-.29
		2	3	-.10	.05	.05	-.21	.00
	Control group	1	2	-.07	.08	.44	-.231	.10
		1	3	-.12	.08	.15	-.28	.04
		2	3	-.05	.06	.34	-.17	.06
Adaptive performance	Experimental group	1	2	-.28**	.06	.00	-.40	-.16
		1	3	-.29**	.10	.00	-.48	-.10
		2	3	-.02	.09	.85	-.19	.16
	Control group	1	2	-.04	.06	.58	-.17	.09
		1	3	-.06	.10	.55	-.267	.14
		2	3	-.03	.09	.79	-.21	.16
Job satisfaction	Experimental group	1	2	-.30**	.08	.00	-.47	-.13
		1	3	-.19*	.08	.02	-.35	-.04
		2	3	.11	.07	.12	-.03	.25
	Control group	1	2	-.08	.09	.40	-.26	.11
		1	3	.15	.08	.09	-.02	.31
		2	3	.22**	.07	.00	.07	.37

Two-tailed. ** $p < .001$, * $p \leq .05$. CI is confidence interval.

$p = .05$, 95% CI [-0.20, 0.00]. No significant change was observed in self-leadership, for the control group. Hypothesis 1 was supported.

The research findings also revealed that there was a main effect of time on adaptive performance, $F(1.62, 81.05) = 5.21$, $p = .007$, $\eta^2_p = .09$, $\pi = 0.76$, qualified by a marginally significant interaction between time and group, $F(1.62, 81.05) = 2.60$, $p = .09$, $\eta^2_p = .05$, $\pi = 0.45$. The results of the pairwise comparisons in Table 2 further suggest that while adaptive performance significantly improved for participants in the experimental group from Time 1 to Time 2, $M = -0.28$, $SE = 0.06$, $p < .001$, 95% CI [-0.40, -0.16], and from Time 1 to Time 3, $M = -0.29$, $SE = 0.10$, $p = .003$, 95% CI [-0.48, -0.10]; no significant change was observed for participants in the experimental group from Time 2 to Time 3, $M = -0.02$, $SE = 0.09$, $p = .85$, 95% CI [-0.19, 0.16]. No significant change was observed in adaptive performance, for the control group. Hypothesis 2 was supported.

Regarding the testing of Hypothesis 3, there was a main effect of time on job satisfaction, $F(2, 100) = 6.60$, $p = .002$, $\eta^2_p = .12$, $\pi = 0.89$, qualified by an interaction between time and group, $F(2, 100) = 4.58$, $p = .01$, $\eta^2_p = .08$, $\pi = 0.75$. The results of pairwise comparisons reported in Table 2 show that while job satisfaction significantly improved from Time 1 to Time 2, $M = -0.30$, $SE = 0.08$, $p = .001$, 95% CI [-0.47, -0.13], and from Time 1 to Time 3, $M = -0.19$, $SE = 0.08$, $p = .02$, 95%

CI [-0.35, -0.04] for participants in the experimental group; no change in job satisfaction was observed from Time 2 to Time 3, $M = 0.11$, $SE = 0.07$, $p = .12$, 95% CI [-0.30, 0.25]. Regarding the participants in the control group, a significant decrease in the level of job satisfaction was found between Time 2 and Time 3, $M = 0.22$, $SE = 0.07$, $p = .004$, 95% CI [0.74, 0.37]. Hypothesis 3 was supported.

Table 3 displays the between-subjects correlation values for employees' self-leadership, adaptive performance and job satisfaction. Seventeen out of 36 correlations were positive and significant, $r \geq .30$, $p \leq .31$, hence suggesting that not all variables correlated between subjects over time. Additionally, Table 4 displays the within-subjects correlation for employees' self-leadership, adaptive performance and job satisfaction. All variables displayed statistically significant within-subject correlation, $r \geq .22$, $p \leq .001$, 95% CI [≥ 0.028 , ≤ 0.661].

Hypotheses 4 and 5 were tested with the aim of gaining additional insight on the mechanism underneath the between-group differences in participants' self-reports of adaptive performance and job satisfaction. Although the research design could have allowed the utilization of more sophisticated longitudinal data analytical techniques such as parallel latent growth modelling and latent mediation growth curve modelling (e.g., Pitariu & Ployhart, 2010), the small sample size of the current study made it inadequate for the adoption of such computationally demanding analytical techniques (Muthén & Muthén, 2012). Therefore, a

Table 3. Correlation between measurement occasions.

	1	2	3	4	5	6	7	8
Self-leadership t_1	1	-	-	-	-	-	-	-
Self-leadership t_2	.36**	1	-	-	-	-	-	-
Self-leadership t_3	.40**	.77**	1	-	-	-	-	-
Adaptive performance t_1	.33**	.08	-.07	1	-	-	-	-
Adaptive performance t_2	.36**	.57**	.38**	.60**	1	-	-	-
Adaptive performance t_3	-.05	.32*	.37**	.18	.37**	1	-	-
Job satisfaction t_1	.003	.11	.07	.07	-.05	.07	1	-
Job satisfaction t_2	-.06	.40**	.30*	-.13	.09	.37**	.66**	1
Job satisfaction t_3	.06	.19	.27	-.01	-.03	.24	.68**	.70**

Two-tailed. ** $p < .01$, * $p < .05$. T1 is Time 1, T2 is Time 2, T3 is Time 3.

Table 4. Correlation within measurement occasions.

	<i>r</i>	<i>df</i>	<i>p</i>	95% CI
Self-leadership – Adaptive performance.	.54	103	< .001	0.382, 0.661
Self-leadership – Job satisfaction.	.27	103	.006	0.079, 0.439
Adaptive performance – Job satisfaction.	.22	103	.024	0.028, 0.399

Within-subjects correlations were estimated using the R software package "rmcorr" (Bakdash & Marusich, 2017); it estimates the repeated measures correlation by determining the common within-individual association for paired measures assessed on two or more occasions for multiple individuals (for further detail, see Bakdash & Marusich, 2017).

mediation test was performed following Montoya and Hayes (2017) path-analytic approach to two-condition within-participant statistical mediation analysis. This method estimates the indirect effect of a within-participant manipulation on some outcome through a mediator as the product of paths of influence, using percentile-based bootstrap estimation. Percentile-based bootstrap estimation offers an alternative to bias-corrected bootstrap estimation, which is more sensitive to inflated Type 1 errors. In Montoya and Hayes, while the X variable in the mediation model regards the between-subjects condition to which participants were assigned (i.e., experimental group vs. control group), the M and Y variables are the difference between two measurement occasions for each variable.

Data analysis was performed using 5,000 bootstrap resamples and percentile-based bootstrap estimation. The results suggest that self-leadership training was positively related with the overall level of change in employees' self-leadership, $B_{t3-t1} = .29$, $SE = .06$, $t(51) = 4.95$, $p < .001$, 95% CI [0.174; 0.411], and the level of change in employees' self-leadership before, $B_{t2-t1} = .22$, $SE = .08$, $t(51) = 3.59$, $p < .001$, 95% CI [0.093; 0.329], and after, $B_{t3-t2} = .08$, $SE = .03$, $t(51) = 2.14$, $p = .037$, 95% CI [0.005; 0.157], the bailout.

Regarding the testing of Hypothesis 4, the results suggest that self-leadership training was positively related with the overall level of change in employees' adaptive performance, $B_{t3-t1} = .19$, $SE = .07$, $t(51) = 2.63$, $p = .011$, 95% CI [0.044; 0.328], and the level of change in employees' adaptive performance before, $B_{t2-t1} = .17$, $SE = .08$, $t(51) = 3.56$, $p < .001$, 95% CI [0.072; 0.259], the bailout. Although there was no direct relationship between self-leadership training and the level of change in employees' adaptive performance after the bailout, $B_{t3-t2} = .02$, $SE = .06$, $t(51) = 0.32$, $p = .747$, 95% CI [-0.105; 0.146], the level of change in employees' self-leadership fully mediated the relationship between self-leadership training and change in the level of employees' adaptive performance overall, $B_{t3-t1} = .20$, $Boot SE = .06$, 95% Boot CI [0.107; 0.336], before, $B_{t2-t1} = .08$, $Boot SE = .03$, 95% Boot CI [0.027; 0.143], and after, $B_{t2-t1} = .04$, $Boot SE = .02$, 95% Boot CI [0.002; 0.085], the bailout. These results support Hypothesis 4.

Finally, the testing of Hypothesis 5 suggests that self-leadership training was not related with the overall level of change in employees' job satisfaction, $B_{t3-t1} = .04$, $SE = .06$, $t(51) = 0.60$, $p = .579$, 95% CI [-0.085; 0.158]. The results further suggest that self-leadership training was positively related with the level of change in job satisfaction before the bailout, $B_{t2-t1} = .20$, $SE = .06$, $t(51) = 3.11$, $p = .003$, 95% CI [0.070; 0.324], and that self-leadership training was negatively related with the level of change in job satisfaction after the bailout,

$B_{t3-t2} = -.16$, $SE = .05$, $t(51) = -3.185$, $p = .003$, 95% CI [-0.262; -0.060]. The level of change in employees' self-leadership did not mediate the relationship between self-leadership training and change in the level of employees' job satisfaction overall, $B_{t3-t1} = .03$, $Boot SE = .05$, 95% Boot CI [-0.060; 0.139], and before, $B_{t2-t1} = .07$, $Boot SE = .05$, 95% Boot CI [-0.003; 0.181], the bailout. Nevertheless, the level of change in employees' self-leadership positively mediated the relationship between self-leadership training and change in the level of employees' job satisfaction after the bailout, $B_{t3-t2} = .04$, $Boot SE = .02$, 95% Boot CI [0.014; 0.087], the bailout. These results partially support Hypotheses 5.

Discussion

This study aimed to test the general assumption that self-leadership training is positively related with employees' adaptive performance and job satisfaction over time. The research findings suggest that self-leadership training is positively and significantly related with the development of adaptive performance and job satisfaction in the workplace. This study goes beyond previous contributions because (a) the self-leadership development programme was focused on the development of self-leadership as a three-dimensional construct and (b) adopted a temporal framework to explore how self-leadership training relates with the level of change in employees' self-leadership, adaptive performance and job satisfaction in rapid change and unpredictable work environments. Although the bailout was unexpected, through this incident we had the opportunity to observe a unique situation in the life of an organization and studied how self-leadership training can foster to employees' adaptive performance and job satisfaction during periods of change and uncertainty.

As expected, the self-leadership training programme was positively related with the level of change in employees' self-leadership over 8 months. The results showed that while the level of individual self-leadership remained stable over time for the control group, it significantly increased in the experimental group. The results also added further evidence that self-leadership can be learned and practised by individuals in the workplace and can change over time (Furtner et al., 2012; Lucke & Furtner, 2015; Neck, 1996; Neck & Manz, 1996; Unsworth & Mason, 2012). Interestingly, the level of self-leadership for employees in the training and control groups did not significantly change after the occurrence of the bank's bailout, between Times 2 and 3. In the experimental group, one explanation could be that individuals had received most of the self-leadership training before the bailout incident. By receiving training in self-leadership behavioural, constructive thought and natural reward strategies, individuals developed cognitive, behavioural and affective strategies that helped navigating through the bank's bailout turmoil (Lucke & Furtner, 2015; Neck & Manz, 1996; Unsworth & Mason, 2012). Regarding the control group, the average level of individual self-leadership was already relatively higher than in the experimental group (although no statistically significant differences were found between groups before the start of the intervention, as reported in the results section). This could help explain why there were no changes in the level of self-leadership

reported by participants in the control group. Additionally, it can be theorized that regardless of the adversity through which individuals might be going, self-leadership is still available as an internal resource on which they can rely to navigate through adversity (e.g., Manz, 1986; Marques-Quinteiro et al., 2015; Neck & Houghton, 2006; Stewart et al., 2011).

The outcomes of this research also suggest that self-leadership training contributes to the development of employees' adaptive performance over time, and that this development was in part due to the development of self-leadership over time. Still, the growth in employees' adaptive performance over time was lower than the growth that we obtained for self-leadership and job satisfaction. One possible explanation for this finding might be derived from a recent study by Müller and Niessen (2018). Müller and Niessen found that high workload (defined as too many tasks for the time available) reduces the capacity for adaptive performance. Based on participants' comments about the need of being available for meetings and phone call with all their clients on a daily basis, we conclude that they perceived a high workload which might have reduced the potential development of adaptive performance. Building on previous work suggesting that self-leadership should be encouraged in tasks having little time urgency (time urgency generates a sensation of high work load; Houghton & Yoho, 2005), it may have also happened that the characteristics of the private banking activity and the bank bailout have created a high work load environment that prevented employees' adaptive performance to be fully developed. Additionally, the bailout alone might have decreased private bankers' self-perception of being performing adaptively.

Still, our study regards one of the few examinations of how to improve employees' adaptive performance in the workplace. In complex work environments such as banking, individuals are likely to face daily challenges that require adaptive performance. Some challenges might be simpler, such as having a client that calls the private banker asking for an urgent meeting, other more challenging, such as a client who wants to move all the savings to another bank. Private bankers might also have to find ways to deal with the anger of clients that lost hundreds of thousands of euros after a bad investment, or may have to shift the kind of investment they are selling to clients based on a last-minute directive from the bank's administration. Our findings suggest that by receiving training in self-leadership, private bankers became better at using self-leadership strategies that contributed to their adaptive performance, during the bailout.

The research findings also suggest that self-leadership training is related with the level of change in employees' job satisfaction over time, and that the use of self-leadership strategies was particularly important to help individuals manage their job satisfaction after the bailout. The bank's bailout leading to decrease in the individual's achievements, compensation and job security, and the fact that participants in the control group did not receive the self-leadership training, might help explaining the decrease in job satisfaction for the control group. As described in the Method section, the bank's organizational crisis made the work environment more stressful and demanding which

might explain why participants in the control group suffered a stronger decrease in job satisfaction. Self-leadership has been found to play a more important role in job satisfaction when the work environment is unstructured (e.g., Roberts & Foti, 1998). Although participants in the experimental group also reported a decrease in job satisfaction, receiving self-leadership training might have helped participants regulating their affective appraisal of the situation. Being capable of controlling one's behaviours, thoughts and motivations is key to help individuals not only performing better but to feel more satisfied with their jobs as well (Houghton & Jinkerson, 2007; Roberts & Foti, 1998; Sesen et al., 2017; Spector, 1986).

Theoretical and practical implications

The outcomes of this study have important implications for both scholars and practitioners. One first contribution to the theory and practice of self-leadership in organizations is that the current research replicates and extends previous work on the relationship between self-leadership training and self-leadership development (e.g., Lucke & Furtner, 2015), as well as on the relationship between self-leadership, job satisfaction (e.g., Neck et al., 1995) and adaptive performance (e.g., Marques-Quinteiro et al., 2015). The publication of research findings that replicate and extend previous work is fundamental to build scientific knowledge that is reliable and can be used to solve real-world problems (e.g., Maxwell, Lau, & Howard, 2015).

A second contribution of this study is that the number of field studies that were performed in real organizational settings and business-oriented companies is scarce (Neck & Houghton, 2006; Stewart et al., 2011). Although others before us had reported the benefits of providing training on specific self-leadership dimensions (e.g., Neck & Manz, 1996), or on the full range of self-leadership strategies (e.g., Furtner et al., 2012; Lucke & Furtner, 2015; Unsworth & Mason, 2012), this research merits the fact that none had implemented it in the for-profit business world and under an organizational crisis situation. Therefore, our findings help supporting Manz's (1986) argument that developing employees' self-leadership is the key to achieving optimal performance in twenty-first century organizations.

Since context is a boundary condition for the emergence of self-leadership (e.g., Houghton & Christian, 2005; Stewart et al., 2011), a third contribution of our research to theory and practice alike is that our findings suggest that the private banking industry is one professional context where self-leadership emerges, is trainable and has a positive relationship with the development of employees' adaptive performance and job satisfaction.

A fourth contribution of this study would be the adoption of a quasi-experimental longitudinal design, which helped us clarifying the developmental dynamics of self-leadership, adaptive performance and job satisfaction. Indeed, Houghton and Yoho (2005) suggest a contingency model of leadership and psychological empowerment where the authors define the conditions under which employee self-leadership should be encouraged and what outcomes are to be expected. Houghton and Yoho suggest that employee self-leadership should be encouraged when employees are performing

under high-developmental working conditions with little time urgency and unstructured tasks. The quasi-experimental longitudinal design adopted in our study suggests that self-leadership training can help improve employees' adaptive performance and job satisfaction during periods of organizational stability, and it also shows that self-leadership training can serve as an HR management strategy that can be used during periods of organizational instability since it attenuates employees' perceptions of reduced job satisfaction and adaptive performance. Our findings not only support Houghton and Yoho (2005) contingency model, as they extend it by showing that engaging in self-leadership may also be important when there are little developmental opportunities and temporal urgency is high.

The theoretical contributions of our research that were outlined in the paragraphs above have important implications for the management of people in twenty-first century organizations as well. Training wise, our research findings generally suggest that by developing the level of employees' self-leadership, it is possible to help them performing more adaptively and developing more positive attitudes towards their current job situation. Our findings also suggest that self-leadership training can become a valuable HR Management tool to empower employees with the job resources they need to thrive during organizational crisis (Bakker & Demerouti, 2007; Breevaart, Bakker, & Demerouti, 2015).

Employees with a relatively high level of self-leadership (Gomes et al., 2015; Manz, 1986) might focus on one or few self-leadership strategies to be developed further, engaging in a more specific self-leadership training (or coaching) intervention that guides the optimization of the overall level of self-leadership. Additionally, the outcomes of our research suggest that managers looking to hire individuals that are competent at dealing with unexpected events (regardless of their magnitude) could regard employee self-leadership as an individual attribute to be included on assessment programmes or recruitment and selection processes.

Finally, because private banking is a complex and challenging occupation, we challenge HR Managers, Company Directors and other professionals to reflect on ways how to transfer the findings of this study to other professional occupations such as banking, sales, IT, or consultancy in order to foster employee self-leadership, adaptive performance and job satisfaction in these environments.

Limitations and future directions

Being a quasi-experimental study, the current research is not without limitations.

Research studies built on training interventions in real-world organizations often face multiple challenges to the generalizability of the findings that result from them. While features of our study such as participants' random allocation to the experimental and control groups, the existence of a control group and the performance of a mid-term follow-up enhance confidence in our findings, two limitations that cannot go unnoticed are the small sample size and the risk of self-selection bias (e.g., Watson, Tregaskis, Gedikli, Vaughn, &

Semkina, 2018). We will now address each of these on separate paragraphs.

The small sample size brings the risk of inflated Type 1 errors that may have resulted from it. Nevertheless, Simmons et al. (2011) suggest that 20 observations per cell should be enough to significantly reduce the risk of falsely reject the null hypothesis. Plus, the observed sample power alongside the confidence interval values suggest that the sample size provided enough power to the statistical analysis and that such effect is very unlikely to exist in our data. Regarding Hypotheses 4 and 5, there is an ongoing debate about the biasing risk of using bootstrap estimation to perform mediation analysis in samples smaller than 80 individuals (Koopman, Howe, Hollenbeck, & Sin, 2015). However, there is no consensus in this discussion since others like Chernick (2008) have argued that using bootstrap is only problematic for sample sizes smaller than 50 individuals. Additionally, MEMORE (Montoya & Hayes, 2017) uses a percentile-based bootstrap estimation as a default, which is less prone to inflation effects when compared to bias-corrected bootstrap estimations.

Regarding the risk of self-selection bias, it is hardly separable from psychological research where most studies use convenience samples, informed consents are mandatory and participation is voluntary (Steiner, Cook, Shadish, & Clark, 2010). Building on Steiner et al. and Braver and Bay (1992), whereas it is very difficult to find ways to control for self-selection bias, it can be attenuated when: (a) participants in different groups have a minimum degree of homogeneity regarding characteristics such as age and gender; (b) the sample is representative of the population (in our study, some private bankers abandoned the bank to move to the same role in other banks, others came from other banks where they already performed as private bankers, and nearly 87% of the banks' private bankers enrolled in this study); (c) participants are all given the same information about the study from the start; and (d) a within-subjects design with a control and an experimental group is used. Since these have all been covered in our study, we might expect that the risk of self-selection bias has been attenuated.

Another limitation of the current study is the inexistence of objective performance indicators (i.e., task performance indicators) that could be linked with self-leadership development, hence reinforcing the importance of self-leadership training for performance development. Although task performance indicators were initially included in the design of the current study (e.g., individual productivity and sales indicators), the data collection situational constraints, detailed in the method section, altered the set of performance indicators used to manage the private bankers, thus precluding our intended analysis.

Finally, another limitation in this study could be the bank bailout, which caused an unexpected impact on the stability of the experiment. Still, we acknowledge that we cannot conclude from our research that crisis (as the bailout) will interact with self-leadership training nor did we research a non-crisis situation. In this study, we have simply examined a context within which the effects of self-leadership training could be offset by factors related to the crisis.

Future extensions of this study or other research endeavours exploring the benefits of self-leadership training should try to obtain a sample and a number of data collection occasions (e.g., five or more) that allow the analysis of more complex patterns of change over time (e.g., curvilinear, cubic). For the future, the connection between self-leadership and objective performance criteria of sales representatives, such as private bankers, is not established to date and should be addressed. Vandewalle's et al. (1999) research showed that self-regulation techniques, specifically the level of self-goal setting, intended effort and intended planning were correlated to the sales volume of sales agents in the medical devices industry. Frayne and Geringer (2000) performed a field experiment with control group, showing that self-management training has a positive impact on job performance, measured by objective and subjective criteria. Still, and to the best of our knowledge, there is no equivalent research on the impact of self-leadership development on individual sales performance, notwithstanding the origin association of both constructs. Future research endeavours could aim to replicate our findings and extend them by examining the relationship between self-leadership training and objective performance criteria.

Conclusion

To work in twenty-first century organizations is to perform in a business environment where rhythm of transformation is often overwhelming. Through the findings of our study, we might tentatively say that under such circumstances, what professionals need to not only survive but also thrive is self-leadership.

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In accordance with Taylor & Francis policy and our ethical obligation as researchers, we are reporting that the second and the third authors are consultants with a company that may be affected by the research reported in the enclosed paper. We have disclosed those interests fully to Taylor & Francis, and we have in place an approved plan for managing any potential conflicts arising from that involvement.

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