

Authentic military leadership and its effect on job satisfaction and performance – The mediating role of commitment to the leader and self-leadership

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ABSTRACT

Leading soldiers is a unique challenge, as the special military tasks are usually associated with high psychological and physical stress. A trusting relationship between the leader and their soldiers can make it easier to carry out military assignments and to deal with the pressures. Authentic leadership is relationship-oriented leadership behavior that is aimed at building such a relationship. In this study, authentic leadership in the Austrian Armed Forces at the company management level was examined. Using a two-level model, the effects of authentic leadership on job satisfaction and work performance as well as the role of commitment to the leader and self-leadership of soldiers were examined. For this purpose, 100 company leaders (team level) were rated by three directly commanded soldiers (Individual level, N = 300). The results show that authentic leadership has significantly positive effects on job satisfaction and work performance, which are mediated by the commitment to the leader. Commitment to the leader also has a significantly positive effect on soldiers' self-leadership, which has an indirect effect on work performance. The relationship-oriented, authentic leadership behavior has proven itself very successful in the military context.

Keywords

Authentic leadership – commitment to the leader – self-leadership – job satisfaction – work performance

1 Introduction

Military leadership is constantly confronted with new challenges, which arise on the one hand from the particular scope of work and the associated psychological and physical stress and on the other hand from the expectations and needs of the commanded soldiers (cf. Feller & Stadel, 2006). The leadership behavior of the commanding officer is therefore of particular importance, since it can positively support the coping abilities of soldiers. Also, the interpersonal relationship between the soldiers and their leader plays a particularly important role and can be described as a key factor (cf. Kernis & Goldman, 2006). In order to cope with military tasks in particular, which are associated with certain psychological and physical stressors and to meet the expectations and needs of the soldiers, the leader is required to establish such a relationship with

his soldiers through his leadership behavior. To do this, it is necessary for the leader to build credibility and gain the trust and respect of his soldiers. Avolio, Gardner, Walumbwa, Luthans and May (2004) attribute such positive effects to authentic leadership behavior, because the authentic leader acts in accordance with their personal values and beliefs and is always open and transparent in their interactions. Álvarez, Alonso, Mora and León (2019) were able to demonstrate in a military context that authentic leadership has a positive effect on personal identification with the leader and on social identification with the military unit. To further shed light on the impact of authentic leadership in the military field, this study examines whether authentic leadership has a positive effect on commitment to the leader and self-leadership of soldiers. Moreover, the question as to what role commitment to the leader and soldiers' self-leadership play in the context of

authentic leadership and job satisfaction as well as work performance was addressed.

2 Authenticity and authentic leadership

2.1 Authenticity

The concept of „Authenticity“ has a long history and can be traced back to ancient Greek philosophy. It is reflected in the saying „know yourself“, which according to tradition, was placed at the entrance to the temple of Delphi. This now much quoted saying points to the actual intention of the worshipped deity, which is to invite people to deal with their own inner personality in order to solve individual problems and questions (Parke & Wormell, 1956). The word authentic can in fact be derived from the Greek word *authentikós* which means something like „he who acts with authority“ and „does it with his own hand“. In other words, this means that an individual „has full power“ (Trilling, 1972) and is „master of their domain“. This expresses the idea of functioning of authenticity (authentic being) (Kernis & Goldman, 2006).

Harter (2002) describes authenticity as having personal experiences that include one's own thoughts, emotions, needs, desires and beliefs. Accordingly, for Luthans and Avolio (2005), a person is authentic when he/she is aware of him-/herself, acts in harmony with the true self and in doing so expresses what he/she thinks and believes. While achieving full authenticity is seen as an ideal, Erickson (1995) points out that authenticity should not be understood as an either / or condition, since a person is never completely authentic or inauthentic. A person should more realistically be described as more or less authentic.

2.2 Authentic leadership

The theory of authentic leadership has evolved over several years from the intersection of leadership, ethics, positive organizational behavior, and scientific literature (Avolio et al., 2004; Cooper, Scandura & Schriesheim, 2005; Luthans & Avolio, 2005). Initially, Luthans and Avolio (2005) defined authentic leadership as a process, that combines the positive qualities of the leader, such as confidence, hope, optimism, resilience, and morality, with a highly developed organizational context, as well as constructively influences self-confidence and self-regulated positive behavior of leaders and employees and promotes their personal growth and self-development. Ilies, Morgeson and Nahrgang (2005) propose a more concentrated four-component model of authentic leadership that includes self-awareness, impartial processing, behavior and relational orientation. Walumbwa, Avolio, Gardner,

Wernsing and Peterson (2008) modified the original definition of authentic leadership by Luthans and Avolio (2005) within the framework of their research program. This development resulted in a refined definition, which is based on the ones postulated by Ilies et al. (2005) and fully reflects the underlying dimensions of the construct.

Walumbwa et al. (2008) define authentic leadership as: „*A pattern of leader behavior (...), to foster greater self-awareness, an internalized moral perspective, balanced processing of information and relational transparency on the part of leaders working with followers*“ (p. 94).

Since the military leader is judged primarily by their leadership behavior and not whether they are behaving correctly in leadership theory, it makes clear how important it is to be authentic and predictable as a leader (cf. Kupper, 2006).

3 Commitment to the leader

With their leadership behavior, the executive creates the vital foundation for the development of commitment of subordinates (Felfe, 2008), which plays an important role particularly in the military sector. The term commitment or organizational commitment is used in the scientific literature to describe employee loyalty to the company or to the leader and stands for solidarity, obligation, identification and loyalty to the organization (Felfe, 2008). Mathieu and Zajac (1990) describe commitment as a psychological bond between employees and the organization. This bond indicates bond quality in terms of closeness-distance, values, appreciation, commitment, stability and temporal perspective and is described by Mowday, Porter and Steers (1982) as the relative strength of an individual identification with a certain organization. Meyer and Herscovitch (2001) see commitment as an action-controlling force that binds a person to an activity that is relevant to one or more goals. For O'Reilly and Chatman (1986), commitment represents a psychological bond between the employee and the organization, which is based on three independent strands (bases): (a) compliance or instrumental involvement based on special, extrinsic rewards, (b) identification or involvement based on the desire to belong and (c) internalization or involvement based on matching personal and organizational values. These three bases do not differ fundamentally in their psychological quality, as is the case in the definition of Meyer and Allen (1991), but in terms of their intensity (Felfe, 2008).

The authentic leader is described by Avolio et al. (2004) as the ones who acts in accordance with their

own beliefs and thinking. In doing so, they treat their employees with respect, are positive and ready to allow openness and responsibility in their relationships (Gardner, Avolio & Walumbwa, 2005; Ilies et al., 2005; Luthans & Avolio, 2003). Authentic leadership continuously builds a transparent, trusting and sincere relationship with their employees (Luthans & Avolio, 2003). The development of commitment to a leader can be explained by means of relational identification and internalization, which focus on the interpersonal level. The identification describes the extent to which those being led define themselves with the conditions of the role relationship. The identification can therefore be described as that part of the identity of the individual that stems directly from the connection to the leader (Sluss & Ashforth, 2007). Internalization occurs, when the leader's influence is accepted, because the attitudes and behaviors induced conform with one's own values (O'Reilly & Chatman, 1986). Leroy, Palanski and Simons (2012) were able to show that authentic leadership and behavioral integrity have a positive influence on the affective commitment of those being led. Semedo, Coelho and Ribeiro (2016), Ribeiro, Gomes and Kurian (2018) and Gatling, Kang und Kim (2016) also report a positive connection between authentic leadership and commitment. The following hypothesis is formulated from the above-mentioned theoretical considerations and empirical findings:

Hypothesis 1: *Authentic leadership behavior shows a positive correlation with soldiers' commitment to the leader.*

4 Self-leadership

The self-leadership concept (Manz, 1986) describes a comprehensive instrument of self-influencing that enables people to give themselves a direction. It is a further development of the self-management approach (Manz, 1985), which is based on clinical self-control theory (e.g. Cautela, 1969) and makes use of operant conditioning (Manz, 1986; Manz & Sims, 1980; Neck & Manz, 2012). The self-leadership process includes the application of special behavioral and cognitive strategies that contain controlling, self-influencing and self-regulatory components in addition to intrinsic motivation (Furtner, 2018; Furtner & Baldegger, 2016). These involve behavior-focused, natural reward and constructive thought pattern strategies. Neck and Manz (2012) describe self-leadership as „*the process of influencing oneself*“ (p. 5).

A direct positive effect of authentic leadership on self-leadership of those being led can be explained by psychological empowerment, which is described as a mechanism (Houghton & Yoho, 2005) with which authentic leaders influence their subordinates (George,

2005; Ilies et al., 2005). Empowerment is conceptualized as a psychological state and encompasses the following four cognitions: (1) Competence – the belief in the ability to be effective. (2) Impact – the degree to which a person can influence strategic, administrative, and operational outcomes of work. (3) Importance – the value of a work goal or purpose as assessed in relation to personal ideals or standards. (4) Self-determination – the feeling of being able to make and regulate own decisions. Together, these four cognitions result in a proactive, self-confident work orientation (Spreitzer, 1995).

To date, no evidence has been found in the literature about a direct positive influence of the commitment to a leader on the self-leadership of employees. Theoretically, a direct positive effect of the commitment to the leader on the self-leadership of subordinates can be explained by relational identification and internalization (Sluss & Ashforth, 2007). If, for example, performance standards and norms from this relationship are internalized by the person being led, there is also a corresponding self-assessment of the employee. Sluss and Ashforth (2007) point out that relational identification is associated with a higher level of self-assessment and self-regulation. Since self-assessment and self-regulation are essential components of self-influencing and since self-leadership is a self-influencing process (Neck & Manz, 2012), it is assumed that relational identification and internalization result in cognitive and behavior-focused self-leadership strategies with their controlling and self-regulating components (Manz, 1986; Neck & Manz, 2012). Therefore, the following hypotheses on self-leadership are formulated:

Hypothesis 2a: *Authentic leadership behavior shows a positive correlation with the self-leadership of the soldiers.*

Hypothesis 2b: *Commitment to the leader shows a positive correlation with the self-leadership of the soldiers.*

5 Job satisfaction

One of the first conceptual description of job satisfaction was provided by Hoppock (1955), who describes it as „a combination of psychological, physiological and situational conditions that lead the person to the honest expression: I am satisfied with my work“ (p. 47). Another general definition originated from Smith, Kendall and Hucir (1969), who see job satisfaction as situational feelings or affective reactions. Weinert (1992), on the other hand, sees job satisfaction as a person's reactions and feelings towards their work. These contain affective and cognitive components and also show a behavioral disposition towards the job, the

work environment, colleagues and the supervisor. Jost (2000), in turn, sees in job satisfaction an „attitude of an employee towards his current work, which arises from the evaluation of the relationship between the satisfaction of needs achieved through work and the expectations formed towards it“ (p. 56).

Job satisfaction is described as an attitude that arises from the evaluation of the work situation by the employee. If the specific expectations and needs of employees regarding the work situation are satisfied, it is assessed positively (cf. Büssing, 1991; Bruggemann, 1974; Vroom, 1964). Authentic leadership behavior, which in ongoing processes builds a transparent, trusting and sincere relationship with personnel (Luthans & Avolio, 2003), can be seen as an essential part of the overall work situation and can thus have a significant influence on the job satisfaction. The studies by Giallonardo, Wong and Iwasiw (2010), Wong and Laschinger (2012) and Penger and Černe (2014) showed positive relationships between authentic leadership and job satisfaction.

The commitment to the leader is described by Moser (1996) as a relationship or as a psychological bond (Mathieu & Zajac, 1990) between the person being led and the leader and includes feelings of solidarity, identification with the leader and obligation towards the leader (Felfe, 2008; Mowday, Porter & Steers, 1982). Job satisfaction is defined as an attitude that results from the process of evaluating the work environment in which employees perform their tasks (Mowday et al., 1982; Saha & Kumar, 2015). The commitment to the leader develops more slowly than job satisfaction and forms a long-term emotional bond, which is stable over time compared to job satisfaction (Mowday, Steers & Porter, 1979). The influence of the commitment to the supervisor on job satisfaction can be explained by the fact that a high commitment to the leader contributes to a positive assessment of the entire work situation and thus to higher job satisfaction (cf. Felfe & Six, 2005). High correlations between job satisfaction and commitment could be demonstrated in a wide variety of meta-analyzes (cf. Mathieu & Zajac, 1990; Meyer, Herscovitch, Stanley & Topolyntsky, 2002; Tett & Meyer, 1995). In addition, Farkas and Tetrick (1989) point out that the relationship between job satisfaction and commitment increases over time.

Self-leadership (Manz, 1986) with its three strategies of behavior-focused, natural reward and constructive thought pattern strategies (Manz & Sims, 2001; Neck & Manz, 2012) can improve the work situation and thus have a positive influence on its assessment which is also reflected in job satisfaction. The behavior-focused strategies are used to increase personal progress by reducing performance deviations from the existing standard and increasing self-directed efforts. With natural reward strategies, the focus is

placed on the more pleasant and enjoyable attributes of goal attainment behavior and work respectively, which are perceived as naturally rewarding (Manz & Sims, 2001; Neck & Manz, 2012). The studies by Fuller and Marler (2009) and Neck and Manz (2012) show that those people who have learned to structure their work and focus their attention on more enjoyable aspects of work are more motivated and feel more satisfied with their work. Constructive thought pattern strategies focus on the formation of constructive thought patterns that can positively influence performance (Neck & Manz, 2012). These strategies involve evaluating one's own thoughts and beliefs using mental imagination and positive self-talk. The evaluation of one's own thoughts and assumptions aims to replace dysfunctional thinking and destructive thoughts with more constructive ones. Neck and Manz (1996) as well as Houghton and Jinkerson (2007) point out, that the use of constructive thought pattern strategies eliminates dysfunctional, negative thoughts and leads to more job satisfaction (see also Judge & Locke, 1993; Neck & Manz, 1996). The following hypotheses are formulated from the above-mentioned theoretical considerations and empirical findings:

Hypothesis 3a: *Authentic leadership behavior shows a positive correlation with job satisfaction of soldiers.*

Hypothesis 3b: *Commitment to the leader shows a positive correlation with job satisfaction of soldiers.*

Hypothesis 3c: *Soldiers' self-leadership shows a positive correlation with their job satisfaction.*

Hypothesis 3d: *The positive correlation between authentic leadership behavior and job satisfaction of soldiers is serially mediated through commitment to the leader and self-leadership of soldiers.*

The hypothetical relationships are summarized in Figure 1.

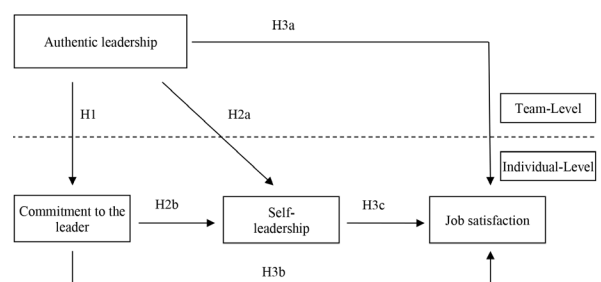


Figure 1: Summary of hypothetical relationships 1-3.

6 Work performance

Campbell, McHenry and Wise (1990) developed with one of the most extensive psychological studies on personnel which was carried out in the 1980s by the

U.S. Armed Forces, a general model of professional performance (cf. Marcus & Schuler, 2006). They define work performance as „*observable things people do (i. e. behavior) that are relevant for the goals of the organization*“ (p. 314). The authors make it clear, however, that this behavior must not only be directly observable behavior, but can also consist of mental productions, such as answers or decisions. The quintessential point is, that the performance is under the control of the individual, regardless of whether it is mental or behavioral.

Motowidlo, Borman and Schmit (1997) with their theory try to combine the dimensional structure and the connection between cause of professional performance and dimensional components. They describe professional performance as behavioral, episodic, evaluative, and multidimensional. For Motowidlo et al. (1997) performance represents a behavioral construct where behavior, performance, and outcomes are not the same things. For them, behavior is what a person does while at work. The performance is described as behavior with an evaluative component, which can be assessed positively or negatively in relation to the effectiveness of the person or the organization.

Authentic leadership behavior, which in ongoing processes builds a transparent, trusting and sincere relationship with those who are being led (Luthans & Avolio, 2005), has a positive influence on their commitment and, subsequently, on their work performance (Gardner et al., 2005). Harter, Schmidt, and Hayes, (2002) suggest that leadership behavior is one of the largest contributors to work engagement. The engagement is the extent to which employees are cognitively, emotionally, psychologically and physically connected during the execution of their work tasks or with their work role (Harter & Schmidt, 2008; Harter et al., 2002; Schaufeli & Bakker, 2004). Avolio et al. (2004) point out that higher relationship quality leads to active involvement in work activities of employees and increases work performance. Leroy et al. (2012), Mehmood, Nawab and Hamstra (2016) as well as Wang, Sui, Luthans, Wang and Wu (2014) indicate a positive correlation between work engagement and professional performance. In addition, Ribeiro et al. (2018) as well as Wong and Laschinger (2012) also found a positive connection between authentic leadership and the work performance of personnel.

The influence of the commitment to the leader on work performance can be explained by the perceived obligation of employees to the leader, which leads to a willingness to push oneself more, which has a positive effect on the performance. In their meta-analysis, Mathieu and Zajac (1990) were able to show positive relationships between commitment and performance, the perceived competence of employees and general motivation. Vandenberghe, Bentein and Stinglhamber

(2004) point to a direct effect of commitment to a leader on work performance. Jaramillo, Mulki and Marshall (2005) as well as Luchak and Gellatly (2007) also report a positive influence of affective commitment on work performance. Another aspect is the willingness of personnel to identify with the goals of the leader and to internalize them respectively, which motivates employees to show additional behaviors that benefit the leader. Chughtai (2015) was able to demonstrate that organizational identification has a direct effect on job role performance. Those employees, who have a high quality relationship with their supervisor and are committed to their work, will put more effort into their work, ultimately leading to better work performance (Liden & Maslyn, 1998; Coglisier, Schriesheim, Scandura & Gardner, 2009). Vandenberghe et al. (2004) show a direct effect of commitment to a leader on work performance. Jaramillo et al. (2005) and Luchak and Gellatly (2007) also report a positive influence of affective commitment on work performance.

The self-leadership concept is aimed at increasing personal effectiveness, intrinsic motivation and self-efficacy (Manz & Sims, 2001; Neck & Manz, 2012). The effect of self-leadership on employees' work performance can be explained with the application of self-leadership strategies, which have a direct influence on performance behavior and mental productions. Park, Song and Lim (2016) were able to demonstrate a positive connection between self-leadership and work commitment, which includes affective (energy and commitment) and cognitive (receptivity) dimensions of the psychological self-realization experience (Schaufeli & Bakker, 2010; Schaufeli, Salanova, González -Romá & Bakker, 2002). Prussia, Anderson and Manz (1998) report a positive influence of self-efficacy on the work performance of those being led (cf. also Sing, Kumar & Puri, 2017). Self-efficacy as a result of self-leadership was already reported multiple times. Neck and Manz (1996) found a positive connection between constructive thought pattern strategies and mental performance. An increase in academic performance through higher self-leadership was also shown in the study by Sampl, Maran and Furtner (2017). Furthermore, an increase in cognitive and physical performance of soldiers, who completed self-leadership training during their training, was demonstrated by Lucke and Furtner (2015). In addition, Ho and Nesbit (2014) as well as Singh, Kumar and Puri (2017) were able to find a positive connection between self-leadership and work performance. Based on the presented theoretical and empirical considerations, the following hypotheses are formulated:

Hypothesis 4a: *Authentic leadership behavior shows a positive correlation with work performance of soldiers.*

Hypothesis 4b: Commitment to the leader shows a positive correlation with work performance of soldiers.

Hypothesis 4c: Soldiers' self-leadership shows a positive correlation with their work performance.

Hypothesis 4d: The positive relation between authentic leadership behavior and work performance of soldiers is serially mediated through commitment to the leader and self-leadership of the soldiers.

The hypothetical relationships are summarized in Figure 2.

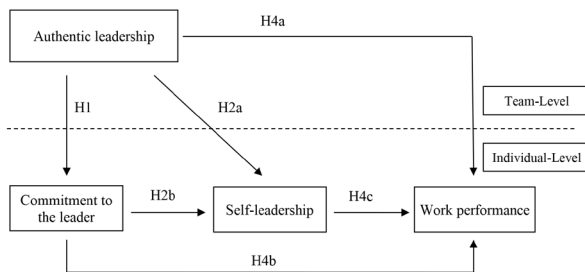


Figure 2: Summary of hypothetical Relationships 1-4.

7 Methods

7.1 Study design

The present study is a cross-sectional study using a two level model, which was carried out in the Austrian Armed Forces at the management level of unit (company) throughout the Austrian federal territory. The data were collected using online questionnaires, which were answered by soldiers who participated voluntarily. The survey consisted of two parts and included, the evaluation of leadership behavior of their directly superior company leaders with regard to authentic leadership (outside evaluation) and, a self-evaluation of their commitment to the leader, self-leadership as well as job satisfaction and work performance.

7.2 Participants in the study

The sample at the individual level consisted of a total of $N = 300$ professional soldiers (298 men: 99.5 % and 2 women: 0.7 %), who are directly commanded by the participating company leaders (team level). The participants belong to different branches of military service and are deployed in all nine Austrian federal states. A special feature of this sample is, that the 300 professional soldiers themselves also have leadership responsibilities. At the time of the study, the participating soldiers had an average age of 49 years ($SD = 8.20$; range: 24 to 65 years) and served on

average 29.58 years ($SD = 8.51$; range: 5 to 44 years) in the military service.

The sample at the team level consisted of $N = 100$ company leaders (98 men: 98 % and 2 women: 2 %). This group of people consists also of professional soldiers with officer's rank, who also belong to different branches of military service and are deployed in all nine Austrian federal states. At the time of the investigation, the company leaders were on average 34 years old ($SD = 6.54$; range: 25 to 57 years) and served on average 14.60 years ($SD = 6.45$; range: 5 to 37 years) in the military service.

7.3 Scales

To assess the leadership behavior of the company leaders by others, the *Authentic Leadership Inventory* by Neider and Schriesheim (2011), which comprises 14 items, was used. An example item is: My company leader acts according to his convictions (answer format: from 1 – strong rejection to 5 – strong approval). For the self-assessment of led soldiers, the *Supervisor-related Commitment* questionnaire by Becker et al. (1996) with nine items was used, an example item is: If someone criticizes my commanding officer, I feel personally insulted (answer format: from 1 – strong rejection to 7 – strong agreement). Self-leadership was assessed using the *Revised Self-Leadership Questionnaire* by Andreßen and Konradt (2007) with 27 items, an example item is: If I can, I try to enjoy my work instead of just getting it done, (answer format: from 1 – not at all accurate to 5 – completely accurate). To assess job satisfaction, the short version of the *Scale for Measuring Job Satisfaction* by Fischer and Lück (1972, 2014) was used, which comprises seven items, an example item is: My work is always in the same rut: there is nothing you can do about it (answer format: from 1 – correct to 5 – incorrect). To survey work performance, one item was derived from the *Individual Work Performance Questionnaire* by Koopmans, Bernaards, Hildebrandt, de Vet and van der Beek (2014), three items were based on the questionnaire by Groen, Wilderom and Wouters (2017) and one item was constructed by the authors. An, example item is: I get involved in the company's duties even without being asked (answer format: from 1 – does not apply at all to 5 – always applies).

8 Results

Statistical data analyses were carried out with the IBM software program SPSS version 21 and with the statistics program Mplus version 8.1 by Muthén and Muthén (2017).

8.1 Descriptive statistics and reliability analysis

First, descriptive statistics and the correlations of all variables of the team and Individual levels were calculated (see Table 1). Significant correlations can be detected throughout the data set. Reliability analyses of authentic leadership, commitment to the leader and self-leadership yielded Cronbach alpha values between $\alpha = .91$ to $\alpha = .95$. For the performance scale, two items had to be removed in order to increase reliability, which still remained low with an $\alpha = .67$, but it can be rated as acceptable according to Bagozzi and Yi (1988). The short version of the scale for measuring job satisfaction has a value of $\alpha = .81$, which can be assessed as sufficient (cf. Bortz & Döring, 2006).

8.2 Confirmatory factor analyses

Confirmatory factor analyses (CFA) were carried out to assess the factorial structure of the used measurements

(see Table 2). For this purpose, a chi-square test, the *Root-Mean-Square-Error of Approximation* (RMSEA), the *Comparative Fit Index* (CFI) and the *Tucker-Lewis Index* (TLI) were analyzed. The results of authentic leadership [χ^2 (71, N = 300) = 182.55, $p < .001$; RMSEA = 0.072; CFI = 0.935; TLI = 0.917], commitment to the leader [χ^2 (8, N = 300) = 17.25, $p = .027$; RMSEA = 0.062; CFI = 0.983; TLI = 0.969], self-leadership of soldiers [χ^2 (285, N = 300) = 621.57, $p < .001$; RMSEA = 0.063; CFI = 0.906; TLI = 0.884], and job satisfaction [χ^2 (15, N = 300) = 35.93, $p < .001$; RMSEA = 0.077; CFI = 0.950; TLI = 0.919] achieved satisfying fit indices that correspond to the current cut-off criteria (RMSEA < 0.08; CFI > 0.9 and TLI > 0.9). An exception is the TLI of self-leadership of soldiers (0.884), which is just below the cut-off of 0.9. Since the RMSEA and the CFI of self-leadership are in the appropriate range, the TLI is judged to be sufficient. Tests of model fit were not calculated for work performance, because the model is exactly identified with three items.

Table 1: Mean values, standard deviation and correlations at team and individual levels.

Scales	M	SD	1	2	3	4	5
1. Authentic leadership	3.78	.67					
2. Commitment to the leader	4.37	1.18	.47**				
3. Self-leadership	3.29	.60	.12*	.25**			
4. Job satisfaction	4.05	.54	.15**	.26**	.14*		
5. Work performance	4.25	.67	.14*	.22**	.29**	.48**	

Notes: ** $p < .01$, * $p < .05$; team level 1, N = 100 were rated by commanded soldiers; Individual level 2-5, N = 300, self-evaluation of commanded soldiers.

Table 2: Results of confirmatory factor analysis of scales and model-fit indices.

Scales	χ^2	df	p	RMSEA	CFI	TLI
1. Authentic leadership	182.55	71	< .001	0.072	0.935	0.917
2. Commitment to the leader	17.25	8	.027	0.062	0.983	0.969
3. Self-leadership	621.57	285	< .001	0.063	0.906	0.884
4. Job satisfaction	35.93	15	< .001	0.077	0.950	0.919
5. Work performance	–	–	–	–	–	–

Notes: N = 300; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = root mean square error of approximation; team level 1 (outside evaluation by commanded soldiers), Individual level 2-5 (self-evaluation by commanded soldiers).

8.3 Interrater agreement and interrater reliability

To assess the aggregation ability of the Individual-level data at the team level, the first step was to check the independent variable for interrater agreement (Within Group Agreement). The authentic leadership shows a very strong agreement with a median $r_{wg(j)} = .93$ (cf. LeBreton & Senter, 2008).

The calculation of the interrater reliability (ICC 1 and ICC 2) of authentic leadership is based on a significant F-value and resulted in an ICC 1 of .25, $p < .001$. This can be rated as acceptable, because it is above the criterion of .12 (James, Demaree and Wolf, 1984). The ICC 2 of authentic leadership is .50, $p < .001$ and must be rated as weak (cf. Klein et al., 2000). However, it must be considered that each group consisted of only three soldiers (raters), which does not permit higher ICC 2 values (cf. LeBreton & Senter, 2008). Despite the weak ICC 2 value, the strong interrater agreement ($r_{wg(j)}$), the significant F value and the acceptable ICC 1 value support the aggregation of the Individual level data to the team level.

8.4 Hypothesis testing

Table 3 shows the standardized estimation of all path coefficients and the 95 % bias (error) corrected bootstrapped confidence interval (95 % CI) of the developed mediation model with the outcome variable „job satisfaction“. Hypothesis 1 (H1), which assumed a positive relation between authentic leadership and commitment to the leader (path a_1), can be confirmed ($\beta = .47$, $p < .001$). H2a, which assumed that authentic leadership and self-leadership (path a_2) are positively correlated, cannot be confirmed ($\beta = .01$, $p = .897$). In line with our expectations, commitment to the leader was positively and significantly related to self-leadership (path d , $\beta = .24$, $p = .005$), which supported H2b. A further significant correlation between authentic leadership and job satisfaction (path c) could be demonstrated, supporting H3a ($\beta = .15$, $p = .002$). H3b, which assumed a positive relationship between commitment to the leader and job satisfaction, can also be confirmed (path b_1) ($\beta = .23$, $p = .001$). The assumed positive relationship between self-leadership and job satisfaction (H3c path b_2) was not supported

Table 3: Paths and indirect effects of the mediation analysis for hypothesis 1-3.

Step	Variables	Path	β	SE	p	95% CI
1 ($X \rightarrow Y$)	Authentic leadership \rightarrow Job satisfaction	c	.15	.05	.002	[.054, .248]
2 ($X \rightarrow M_1$)	Authentic leadership \rightarrow Commitment to the leader	a_1	.47	.05	< .000	[.376, .572]
3 ($X \rightarrow M_2$)	Authentic leadership \rightarrow Self-leadership	a_2	.01	.06	.897	[-.116, .132]
4 ($M_1 \rightarrow M_2$)	Commitment to the leader \rightarrow Self-leadership	d	.24	.08	.005	[.082, .406]
5 ($M_1 \rightarrow Y$)	Commitment to the leader \rightarrow Job satisfaction	b_1	.23	.07	.001	[.098, .370]
6 ($M_1 \rightarrow Y$)	Self-leadership \rightarrow Job satisfaction	b_2	.08	.06	.154	[-.026, .195]
	Authentic leadership \rightarrow Job satisfaction	c'	.03	.06	.602	[-.081, .141]
Indirect effect 1 ($X \rightarrow M_1 \rightarrow Y$)	Authentic leadership \rightarrow Commitment to the leader \rightarrow Job satisfaction	$a_1 * b_1$	.11	.04	.005	[.038, .184]
Indirect effect 2 ($X \rightarrow M_2 \rightarrow Y$)	Authentic leadership \rightarrow Self-leadership \rightarrow Job satisfaction	$a_2 * b_2$	.00	.00	.896	[-.010, .011]
Indirect effect 3 ($X \rightarrow M_1 \rightarrow M_2 \rightarrow Y$)	Authentic leadership \rightarrow Commitment to the leader \rightarrow Self-leadership \rightarrow Job satisfaction	$a_1 * d * b_2$	.01	.10	.204	[-.005, .025]

Notes: $N = 300$; c = total effect; c' = direct effect.

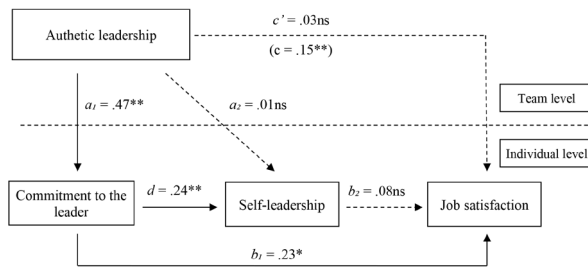


Figure 3: Mediation analysis hypothesis 3d, shown coefficients are standardized.

($\beta = .08$, $p = .154$). Accordingly, H3d, which assumed a serial mediation between authentic leadership and job satisfaction via commitment to the leader and self-leadership (indirect effect 3, path $a_1 * d * b_2$), must be rejected ($\beta = .01$, $p = .204$). This is also true for the indirect effect 2 (path $a_2 * b_2$: authentic leadership via self-leadership to job satisfaction), which is not significant ($\beta = .00$, $p = .896$). However, the indirect effect 1 (path $a_1 * b_1$: authentic leadership via commitment to the leader and job satisfaction) is significant ($\beta = .11$,

$p = .003$). In summary, these results show that the relation between authentic leadership and job satisfaction is mediated by commitment to the leader. In addition, a significant positive effect on self-leadership could be demonstrated. Self-leadership does not play a mediating role in the context of authentic leadership and job satisfaction.

Table 4 shows the standardized estimation of all path coefficients and the 95 % bias (error) corrected bootstrapped confidence interval (95 % CI) of the developed mediation model with the outcome variable „work performance“. H4a, which assumed a positive relationship between authentic leadership and work performance (path c), can be confirmed ($\beta = .14$, $p = .008$). The results also support H4b which stated a positive relation between commitment to the leader and work performance (path b_1) ($\beta = .14$, $p = .050$). Furthermore, the relationship between self-leadership and work performance (path b_2) was significant and thus H4c can be confirmed ($\beta = .25$, $p < .001$). H4d, which assumed a serial mediation between authentic leadership and work performance via commitment to the leader and self-leadership (indirect effect

Table 4: Path and indirect effects of mediation analysis for hypothesis 4.

Step	Variables	Path	β	SE	p	95% CI
1 (X→Y)	Authentic leadership → Work performance	c	.14	.05	.008	[.038, .247]
2 (X→M ₁)	Authentic leadership → Commitment to the leader	a ₁	.47	.05	< .000	[.376, .572]
3 (X→M ₂)	Authentic leadership → Self-leadership	a ₂	.01	.06	.897	[-.116, .132]
4 (M ₁ →M ₂)	Commitment to the leader → Self-leadership	d	.24	.08	.005	[.082, .406]
5 (M ₁ →Y)	Commitment to the leader → Work performance	b ₁	.14	.06	.050	[.014, .270]
6 (M ₂ →Y)	Self-leadership → Work performance	b ₂	.25	.06	< .001	[.137, .369]
	Authentic leadership → Work performance	c'	.04	.06	.494	[-.081, .168]
Indirect effect 1 (X→M ₁ →Y)	Authentic leadership → Commitment to the leader → Work performance	a ₁ *b ₁	.07	.05	.039	[.003, .151]
Indirect effect 2 (X→M ₂ →Y)	Authentic leadership → Self-leadership → Work performance	a ₂ *b ₂	.00	.02	.897	[-.029, .033]
Indirect effect 3 (X→M ₁ →M ₂ →Y)	Authentic leadership → Commitment to the leader → Self-leadership → Work performance	a ₁ *d*b ₂	.03	.01	.021	[.004, .054]

Notes: N = 300; c = total effect; c' = direct effect.

3, path a_1*d*b_2), is supported ($\beta = .03$, $p = .021$). The indirect effect 1 (path a_1*b_1 : authentic leadership via commitment to the leader to work performance) is also shown to be significant ($\beta = .07$, $p = .039$). Only the indirect effect 2 (path a_2*b_2 : authentic leadership via self-leadership to work performance) is not significant ($\beta = .00$, $p = .897$), since authentic leadership is not significantly related to self-leadership (path a_2 ; $\beta = .01$, $p = .897$). Taken together, the relation between authentic leadership and work performance is mediated solely by commitment to the leader as well as serially by commitment to the leader and self-leadership.

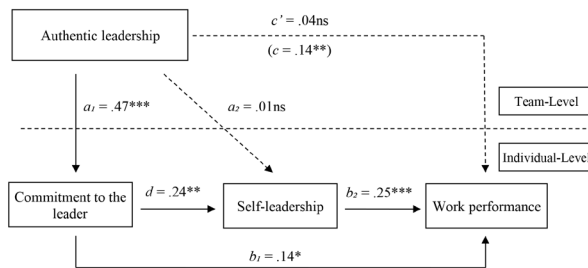


Figure 4: Mediation analysis hypothesis 4d, shown coefficients are standardized.

9 Discussion

In this study, the effects of relationship-oriented authentic leadership on the commitment to the leader, self-leadership, job satisfaction and work performance of soldiers in the Austrian military at company level were examined using a two-level-model. As expected, significant positive effects of authentic leadership on job satisfaction, work performance and commitment to the leader were supported. The anticipated positive relationship between authentic leadership and soldiers' self-leadership could not be confirmed. The mediating effect of the commitment to the leader was demonstrated for both, the relation between authentic leadership and job satisfaction and for the association between authentic leadership and work performance. Self-leadership alone could not be confirmed as a mediator. The commitment to the leader and self-leadership together mediate serially the connection between authentic leadership and work performance.

As expected, authentic leadership, with its relationship-promoting and trust-building aspects, has a significantly positive influence on the soldiers' commitment to their leader. This result also confirms the positive influence of authentic leadership on personal identification with the leader demonstrated by Álvarez et al. (2019) also in the military context. Similar results are reported from other work environments such as the care sector (see Gatling et al., 2016; Leroy et al., 2012; Ribeiro et al., 2018; Semedo

et al., 2016). This finding is of enormous importance for the military sector. Since the military tasks are usually associated with great psychological and physical stress and also have to be mastered over a longer period of time (cf. Feller & Stade, 2006), relational identification and trust in the actions of the leader provides security and confidence, which is of great importance for the psychological stability of the soldiers and the fulfillment of the mission.

In the case of soldiers' self-leadership, there was no direct, significant positive correlation with authentic leadership. Possible reasons for this can be seen in the average age and seniority of the soldiers. The 300 soldiers (Individual level) had an average age of 49 years at the time of the investigation and had been in service for an average of 29.58 years. Opposite of these were the company leaders (team level), who at the time of the investigation had an average age of 34 years and an average tenure of 14.60 years in the Austrian Armed Forces. This means that the much younger leaders, despite a high degree of authentic leadership, were unable to influence the soldiers' self-leadership. In a different context (empowering leadership), Ahearne et al. (2005) could show that inexperienced employees benefit most from leadership behavior, while highly qualified and experienced employees do not derive any clear benefit from it.

In line with our assumption, the commitment to the leader is significantly and positively related to the soldiers' self-leadership, which can be explained by relational identification (Ashforth & Mael, 1989; Sluss & Ashfort, 2007). Considering the military leadership principle of mission tactics, which is pursued as the highest principle and is based on mutual trust, the willingness to work together and to act independently and creatively in accordance with the leader's intention, it becomes clear, how important this connection is for the military sector (cf. Prader, 2008). In addition, self-leadership can also increase soldiers' self-efficacy (see Lucke & Furtner, 2015), which is of particular importance for the military sector. On the one hand self-efficacy increases personal performance (see Lucke & Furtner, 2015) and on the other a self-effective leader serves as a positive role model for their soldiers (Bandura, 1986).

The soldiers' job satisfaction also shows a significantly positive correlation with authentic leadership. With this result, studies carried out earlier mainly in the care sector can be validated (cf. Giallonardo et al., 2010; Penger & Černe, 2014; Wong & Laschinger, 2012). The transparent, trusting and sincere relationship established by authentic leadership (see Luthans & Avolio, 2005) is associated with a higher quality of relationship, which has a positive effect on the satisfaction of social and psychological needs, such as the feeling of belonging

and appreciation (cf. Alderfer, 1972). This in turn has a positive influence on the target / actual comparison of the work situation (cf. Bruggemann, 1974) and leads to higher job satisfaction. The essential point is, that relationship-oriented, authentic leadership has a positive effect on soldiers' job satisfaction even in a hierarchical military system.

Work performance of soldiers also correlates significantly positively with authentic leadership. This result also confirms previous studies (see Leroy et al., 2012; Mehmood et al., 2016; Ribeiro et al., 2018; Wang et al., 2014). The higher quality of relationships built up on a continuing basis by authentic leadership (cf. Luthans & Avolio, 2005) is associated with active work engagement (cf. Álvarez et al., 2019). This means that the soldiers are willing to achieve more (cf. Liden & Maslyn, 1998), which subsequently has a positive effect on work performance (cf. Avolio et al., 2004). What is crucial about the result is that the surveyed soldiers are themselves leaders and lead soldiers. Since performance in military units is mostly a result of cooperation, the leaders work commitment could be transferred to their soldiers and indirectly have a positive effect on their performance (cf. Álvarez et al., 2019; Bakker, 2011).

In short, the mediation analysis with the variables authentic leadership, commitment to the leader, self-leadership and job satisfaction showed that the connection between authentic leadership and job satisfaction is mediated by the commitment to the leader but not by self-leadership. Commitment to the leader fully mediates the relation between authentic leadership and job satisfaction (see Figure 5) since the direct effect of authentic leadership on job satisfaction was not significant. Hence, the relation between authentic leadership and job satisfaction is only mediated by commitment to the commanding officer and no serial mediation with self-leadership could be shown. Furthermore, the indirect effect of authentic leadership on job satisfaction via self-leadership as a single mediator was not significant. The reasons for the missing mediation are, on the one hand, the insufficient relation between authentic leadership and self-leadership and, on the other hand, the insufficient association between self-leadership and job satisfaction. The significant positive indirect effect of commitment to the leader can be explained by relational identification (Sluss & Ashfort, 2007), through which the social and psychological needs of the commanded soldiers are sufficiently satisfied, which is associated with a positive assessment of the work situation and an increase in job satisfaction (see Alderfer, 1972; Bruggemann, 1974). Commitment to the leader also shows a significant positive correlation with self-leadership, which favors of a positive assessment of the leader's personal identity (cf. Ashforth & Mael,

1989; Sluss & Ashfort, 2007). For the military sector, the result is of great importance because identification and job satisfaction strengthen the solidarity within the company, which is absolutely necessary in order to cope with the psychological and physical stresses of military tasks.

The mediation analysis with the variables authentic leadership, commitment to the leader, self-leadership and work performance shows that the direct effect between authentic leadership and work performance is no longer significant, which supports a full mediation model (see Figure 4). The relation between authentic leadership and work performance is serially mediated through commitment to the leader and self-leadership. This means that authentic leadership has a positive effect on commitment to the leader, which in turn has a positive effect on self-leadership, and which finally increases work performance. Self-leadership is thereby only influenced by commitment to the leader and not by authentic leadership.

In addition, it can be seen that commitment to the leader without self-leadership also has an indirect, significantly positive effect on work performance. The reason for this can be seen in the special bond with the commanding officer, which is associated with a sense of obligation (cf. Felfe, 2008), which has a positive effect on the willingness to exert more effort at work (cf. Liden & Maslyn, 1998). The positive relation between self-leadership and work performance can be explained by the self-leadership strategies that aim to increase intrinsic motivation, personal effectiveness (cf. Manz & Sims, 2001; Neck & Manz, 2012) and self-efficacy (see Lucke & Furtner, 2015; Prussia et al., 1998; Sampl et al., 2017), which together have a positive effect on work performance. This result is important for the military sector because the soldiers surveyed are also leaders themselves and their behavior and work performance are observed and assessed by their soldiers. The importance of the leader's behavior (positive role model; Bandura, 1986) becomes visible, when considering the collective military performance. The performance behavior of the leader can thus influence the soldiers' motivation.

9.1 Limitations and Implications

The presented study has yielded interesting results on the positive effects of authentic leadership in the military field. The cross-sectional design, however, only allows a theoretical explanation of causality, which is a clear limitation.

A further limitation is found in the sample, which shows an imbalance between the sexes. This imbalance between male and female soldiers can be seen both among the company leaders (98 men,

2 women) and among the commanded soldiers (298 men, 2 women). This means, that the results only allow one-sided, gender-specific statements. Therefore, a gender balance should be sought in further studies.

The performance scale is another weakness, which achieved a low internal consistency of $\alpha = .67$ in the reliability analysis despite the removal of two items. Due to the small number of items (3), this was nonetheless rated as acceptable (cf. Bagozzi & Yi, 1988). For further studies it would be advantageous to use an approach with higher internal consistency.

The aggregation ability assessment of Individual-level data on the team-level revealed a further limitation. When calculating the interrater reliability of the data to be aggregated for authentic leadership, a lower ICC 2 value resulted, which does not reach the minimum value of .70 demanded by the literature (cf. LeBreton & Senter, 2008). Therefore, the ICC 2 value for authentic leadership had to be rated as weak at .50 (cf. Klein et al., 2000). However, it must be taken into account that each group consisted of only three soldiers (raters) and therefore does not allow any higher ICC 2 values (cf. LeBreton & Senter, 2008).

Practical consequences for the entire personnel management of the armed forces can be deduced from the results. This includes the selection of personnel as well as the training, further education and training of leaders at all levels. When selecting personnel, greater attention should be paid to the authenticity and ethical values of prospective leaders. Basic and advanced training as well as continuing education of leaders at all levels should contain ongoing elements for personality development which focus on developing and allowing authenticity and also convey ethical leadership values. To achieve a more authentic leadership style, both, the army and each leader himself are required. The army as an organization, has to create appropriate conditions that enable and promote authentic leadership, and each leader, has to actively challenge their authenticity, their ethical values and convey these to their soldiers.

10 Conclusion

The positive effects of authentic leadership on commitment to the leader, job satisfaction and work performance has shown that this leadership style cannot be ignored in a modern army. In particular, it is the positive effect on the commitment to the leader, which can be described as a key variable, because it mediates both job satisfaction and work performance, and has a significantly positive influence on the soldiers' self-leadership. In addition, it also promotes solidarity in military units, which is absolutely necessary in order to be able to fulfill military orders and to enhance coping abilities during challenging missions.

The value of the presented study is particularly evident when considering the military leadership principle, which pursues mission tactics as the supreme principle. Leadership by order is based on mutual trust, the willingness to cooperate and to act independently in accordance with the intention of the leader. This clearly shows, how essential a high degree of agreement in thinking and acting is (cf. Prader, 2008).

Relationship-oriented authentic leadership has absolutely proven its worth in the military leadership structure, which is why every effort should be made to train relationship-oriented authentic military leaders.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author (GL). The data are not publicly available due to internal policy.

Impact statement

What is the meaning of this article for the military: The study impressively shows that the authentic leadership also has a positive effect on job satisfaction, work performance and commitment to the leader. The commitment to the leader plays a key role in the relationship between authentic leadership and job satisfaction as well as work performance. In addition, it has a positive effect on the self-leadership of the soldiers. The authentic leadership should be particularly promoted in the military sector.

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