

Mechanisms linking authentic leadership to emotional exhaustion: The role of procedural justice and emotional demands in a moderated mediation approach

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Abstract: In order to gain more knowledge on how the positive leadership concept of authentic leadership impacts follower strain, this study tries to uncover procedural justice as an underlying mechanism. In contrast to previous work, we exclusively base our theoretical model on justice theories. Specifically, we hypothesize that authentic leadership negatively predicts emotional exhaustion through perceptions of procedural justice. We assume that this indirect effect is conditional on followers' amount of emotional demands, and that the procedural justice-emotional exhaustion relationship is stronger when emotional demands are high. This finally results in a stronger exhaustion-reducing effect of authentic leadership. The proposed moderated mediation model was tested in a sample of $N=628$ employees nested in 168 teams using lagged data from three waves. Results provide support for all hypotheses. Authentic leadership is critical to employees' well-being as it contributes to an elevated perception of positive work conditions (procedural justice), especially in contexts with high emotional demands. Limitations and practical implications on leadership development are discussed.

Key words: Authentic leadership, Procedural justice, Emotional exhaustion, Emotional demands, Follower strain

Introduction

Imagine having a leader who behaves in accordance with his or her own convictions, who engages in transparent relationships and whom you could trust his/her word counts. In other words your leader could be described as an authentic person. Would this lower your risk of getting burned out because it makes you feel certain and justly treated at work? And moreover, what would happen, for

example, if you are confronted with tasks that are emotionally demanding, and therefore, bear an extremely high risk to take away all your energy? Could your leader's authenticity prevent you from being strained? In the current work, we try to provide some answers to those critical questions looking at the role of authentic leadership for emotional exhaustion in employees.

Studies investigating the impact of authentic leadership on employees' strain are scarce, and have been restricted to specific occupational groups (e.g., nurses)^{1,2}. This is quite astonishing as authentic leadership has been promised to be the essence of any positive form of leadership^{3,4}. Gaining insights into how authentic leadership unfolds its posi-

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tive energy in the workplace means to gain new insights into other leadership styles as well. We therefore want to study how authentic leadership can contribute to a health-promoting work environment. Specifically, we suggest authentic leaders³⁾ to heighten the perception of procedural justice, and thereby, to prevent employees from becoming emotionally exhausted.

When it comes to explaining the relationship of leadership and health, stress theories are predominately considered⁵⁾. We think, however, that justice theories explain the health impact of leadership more comprehensively as they refer to the underlying social exchange process between a leader and his/her followers. Procedural justice theories, in particular the *group value model*⁶⁾, the *fairness heuristic theory*^{7, 8)} and the *uncertainty management theory*^{9, 10)}, offer great potential to explain such intra-organizational processes. In fact, there are explicit calls for an integration of procedural justice into the field of leadership¹¹⁾. Nevertheless, studies investigating these theories in an applied context are scarce. We now make an attempt to explain the complex relationship of leadership and employee strain by referring to procedural justice theories as our conceptual framework.

Along with the tertiarization of the occupational world, emotional demands, which refer to the requirement to handle one's own or customers' emotions during daily work^{12–14)}, are getting more and more important. Especially because they are at a high risk to be emotionally exhausted by their work¹³⁾, it is essential to identify beneficial work settings for such employees. Therefore, we additionally want to research if and how such demands (organizational setting) further impact the proposed strain reducing effect of authentic leadership.

To sum up, with the current study, we contribute to leadership and strain research in several ways: (a) We *provide support* to those very few studies that have already addressed the authentic leadership-employee strain relationship, (b) building on procedural justice theories, we further *extend* this knowledge by offering a *new explanation* as to how, and under which conditions, authentic leadership behavior relates to employees' strain, (c) we ensure a high generalizability of the results by testing our hypotheses in a large multinational sample, including different branches and occupations, and, finally (d), we employ an appropriate methodological approach by using a lagged *design with three measurement* points reducing common

method bias, while additionally controlling for team structure.

In the following, we first introduce the construct of authentic leadership, and give a short empirical review of its relationship with employee strain and other work outcomes before developing our research model based on procedural justice theories.

Authentic leadership

In the last few years, authentic leadership has gained more and more attention in leadership research^{15–17)} and practice¹⁸⁾. As it has been mainly derived from the historical definition of authenticity (for an historical review see:¹⁹⁾, it could be seen as a description of how a leader's "thoughts, feelings, and behaviors reflect one's [his/her] true- or core-self"^{19, p. 294)} implying the need for a multidimensional conceptualization of the construct. Accordingly, different researchers agree in defining authentic leadership as four dimensional^{3, 17, 20–22; see also: 23, 24)}. Walumbwa *et al.*^{3, a)} and others²⁴⁾ termed those components (a) self-awareness, (b) balanced processing, (c) relational transparency, and (d) internal moral perspective. Accordingly, a leaders' behavior becomes authentic when they are aware of their own qualities and weaknesses and they do not mind showing them to others, when they have moral standards that guide their actions, when they process information about themselves and about others objectively, and when they openly share their knowledge with their followers.

There is large consensus, that authentic leadership is an essence of positive leadership aspects which is beneficial in several ways²⁵⁾. According to Walumbwa *et al.*³⁾ the four dimensions form a higher order construct⁸⁾ which might be seen as "the root concept and a theoretical foundation for any positive form of leadership"^{24, p. 3)}. In line with this thinking, the concept of authentic leadership does not challenge other leadership concepts²⁶⁾; it rather supplements them instead.

Nevertheless, in the conceptualization of the construct, slight differences exist. While some authors primarily refer to the leader level³⁾, others emphasize the multi-level character of authentic leadership as well, as they include the organizational¹⁷⁾ or the employee level in their considerations (e.g., in terms of authentic followership^{19, 20)}). In the current research, we chose to use the definition from Walumbwa and colleagues³⁾ which is widely common.

a) During the last few years a couple of papers from Walumbwa and colleagues have been retracted. To the very best of our knowledge none of such articles is cited in the work at hand (02/2016).

Authentic leadership and emotional exhaustion

In the literature, there are several studies focusing on positive follower outcomes of authentic leadership. Most consistently, relationships with followers' trust, engagement and satisfaction measures were found^{3, 4, 27–30}. Research focusing on negative follower outcomes is still in its infancy. To the best of our knowledge, there are very few studies that test the relationship between authentic leadership and strain indicators. Laschinger *et al.*^{1, 2} and Laschinger and Fida³¹ succeeded in connecting authentic leadership negatively to emotional exhaustion in structural equation models. In those cross-sectional studies from Laschinger *et al.*^{1, 2}, the effect was mediated by structural empowerment, i.e. workplace bullying, while Laschinger and Fida³¹ revealed a direct effect with a time lag of one year in their sample of nurses.

In the current study, we use emotional exhaustion as an indicator for work-related strain, which is the core dimension of job burnout³². It is assumed to occur first in the burnout process³³, and “refers to feelings of being over-extended and depleted of one’s emotional and physical resources”³⁴.

The relationship of authentic leadership to followers' strain still needs further investigation. In the following sections, we show that procedural justice might be one additional link explaining the negative relationship between authentic leadership and employees' emotional exhaustion.

Procedural justice as a mediator

Procedural justice is an important organizational justice dimension. It refers to the procedures on how decisions are made³⁵. In organizations, the people who make decisions are usually the leaders. Nevertheless, as van Knippenberg *et al.*¹¹ declare, procedural justice has long been excluded in leadership literature, although procedural justice has been proven to be important for the leader-employee relationship³⁶. In particular, procedural justice has been treated as a “more systemic part of fairness” rather than as “an aspect of leadership”^{11, p. 118}). In the current research, we want to fill this gap. We assume that procedural justice plays an important role in enlightening the mechanism of how authentic leadership reduces employees' strain. In detail, we hypothesize that authentic leaders indirectly prevent employees from getting strained by contributing to the perception of procedural justice.

The fairness heuristic theory^{7, 8}) states that people are often in a situation, especially at work, where they are at risk of being exploited by someone in authority. Therefore, they need to know whether their supervisor is trust-

worthy or not. Actually, we usually lack the information that is needed to make such a decision. To solve this problem, people use cognitive shortcuts, so called heuristics, to decide on their supervisor's trustworthiness using the information available, for example, by using information about procedural justice. Authentic leaders provide information that could be used by their employees to make perceptions of procedural justice. The information that a leader in one's organization is aware of his or her own strengths and weaknesses and that s/he does not mind showing them to others, should serve as positive evidence of their organization's procedural justice in this heuristic process.

Moreover, leaders who lead authentically contribute to meeting at least some of the procedural justice criteria introduced by Leventhal³⁷). According to Leventhal³⁷), a decision process that is recognized as fair should (a) be used consistently, (b) be free of bias, (c) be based on accurate information, (d) include a mechanism to correct made decisions if they have been biased, (e) be guided by ethical and moral standards, and finally (f) be based on different opinions. Having a closer look at the four sub-dimensions of authentic leadership, it becomes quite obvious why a leader's behavior results in a more positive perception of the organization. First, authentic leaders act in accordance with their internal moral perspective (internal moral perspective); consequently, the procedures they employ to make decisions are perceived to conform to ethical standards. Secondly, they are transparent in their relationships with others (relational transparency), which is why the employees' feeling of *being heard* in decision processes is induced and they feel being able to voice their opinion³⁸). Thirdly, authentic leaders are highly self-aware (self-awareness) and process information about themselves and others objectively (balanced processing), which is why followers should assume them to receive more accurate information. As a result, authentic leaders are recognized as making decisions free of bias. Thereby, all four sub-dimensions of authentic leadership contribute to employees' perception of procedural justice. Leaders, in turn, represent the organization towards their employees. Therefore, their behavior is critical to deciding on how procedurally just the organization is.

In a large amount of empirical studies, organizational justice has been positively related to employee well-being (e.g.,^{39–42}); see also^{34, 43}). In a recent study, Tayfur *et al.*⁴⁴) found a negative relationship between both procedural and distributive justice and emotional exhaustion. Furthermore, emotional exhaustion mediated the relationship between organizational injustice and turnover intention.

But also, other authors succeeded in connecting low procedural justice to high emotional exhaustion⁴⁰. It has already been shown that a lack of control in organizational decision making processes is perceived as stressful and may threaten employee well-being⁴⁵. The group value model⁶ states that people care about their status in social groups. Procedural justice provides information about the status of a person within such a group and about the outcome that could be expected. The identification with social groups is an important aspect for individual self-validation and individual self-esteem⁴⁶. If people perceive they are being treated in an unfair manner, they conclude that their status in the social group they belong to is low. This is a potential threat for the individual which is perceived as stressful^{6,47}. Therefore, procedural justice should be negatively related to emotional exhaustion.

To summarize, by leading authentically supervisors contribute to employees' perceptions of procedural justice, which might reduce emotional exhaustion. Consequently, we hypothesize the following:

H1: Procedural justice will mediate the relationship between authentic leadership and emotional exhaustion.

The role of emotional demands

The majority of employees work in the tertiary sector—the so called service sector^{48,49}. Work in this sector is characterized by the interaction with other people, such as customers, clients or patients. In these service professions, emotional demands are one of the main work demands. For example, bank employees who are advising customers regarding financial products in their daily work have to recognize how their customers feel and, if necessary, they are asked to show specific emotions to induce required emotions in customers (e.g., positive emotions) to achieve organizational goals (e.g., selling a financial product). The fact that most employees are confronted with emotional demands in their daily work life illustrates the importance of this special work demand. Moreover, people working in such professions are at high risk to be exhausted^{12,13}. Nevertheless, emotional demands could hardly be eliminated or reduced by the organization—especially in such service jobs in which they are the core of the occupation. In a previous study, Grandey *et al.*⁵⁰ showed that a climate of authenticity might alleviate burnout in service professions, implying that authenticity is essential when emotional demands are high. In the current work, we aim at identifying whether the strain reducing effect of authentic leadership via procedural justice differs regarding the amount of

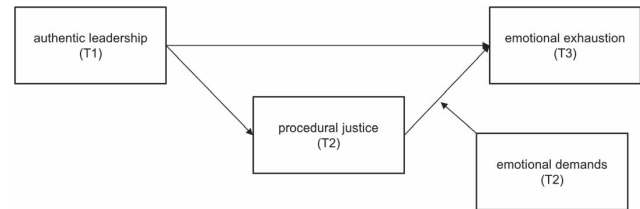


Fig. 1. Theoretical research model.

emotional demands employees have to cope with.

In fact, the uncertainty management theory^{9,10} offers an explanation framework on how procedural justice is related to such demands. The theory highlights the meaning of (procedural) justice when the individual feels uncertain about the situation. In jobs where the emotional demands are high, the employees are at risk of being put in emotionally demanding situations or of having to relate to other individuals' problems at work. As George⁵¹ already assumed, this should make interactions with customers, clients or colleagues less predictable. If there are high emotional demands, it is no longer sufficient for the employees to be just a professional referring to the work content; for example, they also have to handle the emotional aspects of the social interaction when selling a product. Not knowing which emotional problems they might be confronted with next gives rise to much uncertainty about the "right" way to execute their job. Consequently, in order to gain more control about the situation⁴⁵ there is an elevated need for justice in order to feel more certain again, which aligns with propositions made in the uncertainty management theory^{9,10}. They search for justice information to better cope with the uncertainty. In contrast, if the emotional demands are low, the job is more predictable and there is less uncertainty or need to obtain and consider justice information. This corresponds to studies which have shown that injustice has more negative effects on employee strain when the work conditions are uncertain^{52,53}. Drawing on this theoretical and empirical line of argumentation, we expect the emotional demands to moderate the relationship between procedural justice and emotional exhaustion.

H2: The negative relationship between procedural justice and emotional exhaustion (controlling for authentic leadership) is moderated by the emotional demands, in that the relationship should be stronger when the emotional demands are high.

We further assume that the interaction effect between procedural justice and emotional demands impacts the indirect effect of authentic leadership on emotional exhaustion. Therefore, we hypothesize the following:

H3: The indirect effect from authentic leadership on

emotional exhaustion through procedural justice is conditional on the emotional demands, in that the indirect effect should be stronger when the emotional demands are high.

The hypothesized moderated mediation which we tested in a structural equation approach is summarized in Fig. 1.

Subjects and Method

Procedures

The data were collected in Germany and Finland, in a three wave study from 2011 to 2013. To heighten the generalizability of our results, we recruited organizations from different countries and different sectors (public and private), most of them were service organizations, such as financial service organizations or public administration. One important selection criterion in our sampling strategy was the proximity between leaders and followers, both in terms of location and hierarchy, as we deemed regular social interactions between leaders and followers a necessary precondition of effects of leadership on follower well-being. Therefore, the leaders in our sample always directly supervised their teams, and team members did not report (directly) to any other leader. The time lag between Time 1 (T1) and Time 2 (T2) was 12 to 14 months and between Time 2 (T2) and Time 3 (T3) was 8 months. The employees of the organizations were invited via an e-mail link. For those employees who had no computer access, paper-pencil questionnaires were employed. Anonymity was assured prior to data collection. The participation in the study was voluntary; no compensation was offered. Nevertheless, the employees were allowed to participate during their working time. The organizations themselves were provided with benchmark feedback concerning working conditions and several other organizational indicators.

Sample

The initial sample at T1 consisted of $N=1960$ employees and leaders from 12 organizations (eight organizations in Germany, and four in Finland). Response rates across organizations, countries and across measurement points ranged from 39.3% to 74%, with a mean response rate of 69.1% at T1. After matching the three measurement waves using an anonymous individual code, we excluded all respondents who did hold a leadership position at T1 ($n=200$), and who did not participate at each measurement point ($n=917$; $n=652$ individuals dropped out from T1 to T2, and $n=265$ individuals dropped out from T2 to T3). Attrition between T1, and T2 was 37.1%, and between T2,

and T3 23.9%. We then further excluded all respondents who were promoted to a leadership position between the waves ($n=3$), and whose leader changed in course of the data collection ($n=212$).

The final sample consisted of $N=628$ employees (32% of the initial sample at T1; 57.2% private sector, 42.8% public sector) from 168 different teams from 12 organizations (eight organizations in Germany, and four in Finland). The team size ranged from 1 to 14 ($M=4.0$). Most participants were German ($n=479$, 76.3%), 23.7% ($n=49$) came from Finland. Their age at T1 ranged from 20 to 62 years; the average age was 43.05 ($SD=9.85$). 518 participants were female (82.5%) and only 17.5% were male. The mean length of time employees worked in their current organization was 15.74 years ($SD=9.05$); however, 24 persons made no specification. According to their education levels classified by ISCED-97⁵⁴) 21 (3.3%) persons stated having a lower secondary level of education, while 172 persons (27.4%) stated having an upper secondary level of education and 67 employees declared a post-secondary, non-tertiary level of education. The majority of the sample (55.6%, $n=349$) had a first stage of tertiary education level and only two persons stated having a second stage of tertiary education level; 17 values were missing (2.7%). The majority of the participants took part via the e-mail link (82.0%, $n=515$).

Dropout analyses

In order to test whether there had been a systematic dropout between T1, T2 and T3, we compared the demographic variables and the scales assessed (at T1) of those participants included in our sample (longitudinal data) with the participants who only took part at T1. Analyses show that the participants with longitudinal data differed slightly from the participants who only took part at T1, as they worked 1.15 years longer for their current organization $t_{(1,317.20)}=2.43$, $p=.015$ and they reported being more emotionally exhausted $t_{(1,702)}=-2.70$, $p=.007$. There were also differences depending on gender and the country: Pearson Chi-Square-Tests revealed that male employees ($\chi^2_{(1)}=12.32$, $p<.001$), as well as employees from Finland ($\chi^2_{(1)}=27.70$, $p<.001$) more likely dropped out. Regarding age, authentic leadership and the organizational sector (public/private) no differences were found.

Ethics

Our study was performed in consensus with all requirements defined by the German/Finnish Society of Psychology including participants' information about their rights

and guarantee of anonymity. The participation of each employee in our questionnaire study was voluntary. Nevertheless, a written informed consent was not obtained explicitly from participants due to the online-assessment technique employed, and as this approach would have endangered participant's anonymity.

Measures

Authentic Leadership. For assessing authentic leadership perceived by the employees at T1, the 16-item scale of Walumbwa and colleagues³⁾ with the sub-dimensions *self-awareness*, *relational transparency*, *internalized moral perspective* and *balanced processing* was employed. A sample item is "My immediate superior says exactly what he or she means". The items had to be rated on a five-point frequency-scale ranging from 0 (*not at all*) to 4 (*frequently, if not always*). The reliability of the complete scale was very good, $\alpha = .94$.

Procedural Justice. Employee's perceived procedural justice was measured at T2 with three items based on a scale of Elovainio *et al.*⁵⁵⁾ who developed a short measure for procedural justice according to the work of Colquitt⁵⁶⁾. Items had to be rated on a five-point Likert-scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item is "The procedures in decision making are free of bias in our work place". Reliability of the scale was satisfactory with a Cronbach's alpha of $\alpha = .79$.

Emotional Demands. Emotional demands were assessed at T2 with four items from COPSOQ II⁵⁷⁾. A sample item is "Does your work put you in emotionally disturbing situations?". The response format changed over the four items. Two items had to be answered on a five-point frequency-scale ranging from 1 (*very seldom or never*) to 5 (*very often or always*) and two items had to be rated on a five-point scale ranging from 1 (*to a very small extent*) to 5 (*to a very large extent*). The reliability of the scale was good, $\alpha = .86$.

Emotional Exhaustion. Emotional exhaustion was measured with three items from the Maslach Burnout Inventory General Survey (MBI-GS)³²⁾ at T1 and T3. These three items can be seen as the most prototypical ones for the burnout dimension emotional exhaustion⁵⁸⁾. A sample item is "I feel burned out from my work". The items had to be rated on a seven-point frequency-scale (0 *never*, 1 *a few times a year or less*, 2 *once a month or less*, 3 *a few times a month*, 4 *once a week*, 5 *a few times a week*, 6 *every day*). The reliability of the scale measured with Cronbach's alpha was $\alpha = .88$ at T1 and $\alpha = .87$ at T3.

Neuroticism. The big five personality dimension neu-

roticism describes a personality trait which is characterized by a high emotional instability meaning that people who score high on neuroticism are distracted easily in stressing situations, they are highly irritable and they have a pessimistic tenor. As this personality trait is known to predict emotional exhaustion⁵⁹⁾ we assessed it as a control with three items from the Big Five Inventory short measure (BFI-S)⁶⁰⁾. The scale ranged from 1 (*does not apply to me at all*) to 7 (*applies to me perfectly*). A sample item is "I see myself as someone who worries a lot". Cronbach's alpha of the scale was acceptable, $\alpha = .73$.

Analyses

Data analyses were made using SPSS 22 and Mplus 7.31. To test our hypotheses, we estimated a moderated mediation structural equation model (SEM) with specifications on level 1 only, using analysis type "two-level random" with restricted maximum likelihood estimates (MLR). For authentic leadership, item-parcels were inserted. The model is summarized in Fig. 1. We further calculated the indirect effect for specific values of the moderator emotional demands (mean, one and two standard deviations under and above).

As the amount of emotional exhaustion could have an impact on the perception of procedural justice, for example, we always controlled for the dependent variable measured at T1. In addition, we always controlled for neuroticism as this personality trait is well known to be characterized by a pessimistic tenor which might reflect in more negative ratings of daily events^{61, 62)}, and work aspects⁶³⁾, and therefore might bias our results.

Results

Preliminary analyses

In order to show empirically that authentic leadership and procedural justice are two distinct constructs we performed an exploratory factor analysis (PCA) as well as a set of confirmatory factor analyses using Mplus 7.31. In a PCA on all 16 items of the authentic leadership scale and the three items to measure procedural justice three Eigenvalues > 1 were extracted ($\lambda_1 = 8.94$, 47.1%, $\lambda_2 = 1.74$, 9.2%, $\lambda_3 = 1.39$, 7.3%). A promax rotated factor matrix showed that the first two factors comprised items from the authentic leadership scale, and on the third factor only the three items from procedural justice had loadings $> .80$. The two factors that emerged within the authentic leadership scale were not clearly separated by the theorized content dimensions, and showed to have substantial cross-load-

Table 1. Descriptive statistics, correlations, and reliabilities of level 1 variables

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. authentic leadership (T1)	2.38	0.72	(.94)					
2. procedural justice (T2)	3.25	0.94	.39**	(.79)				
3. emotional demands (T2)	3.08	0.89	.00	-.13**	(.86)			
4. emotional exhaustion (T3)	2.41	1.43	-.20**	-.28**	.37**	(.87)		
5. emotional exhaustion (T1)	2.40	1.43	-.19**	-.22**	.36**	.62**	(.88)	
6. neuroticism (T3)	3.69	1.27	-.06	-.13**	.22**	.48**	.39**	(.73)

Note. Reliability estimates (coefficient alpha) appear in parentheses on the diagonal.

***p* < .01, two-tailed.

ings. We therefore decided to use authentic leadership as a one-dimensional construct. Furthermore, we compared a one factor model (with all items loading on one factor) with a two factor model (with a common second order factor loading on the four sub-dimensions of authentic leadership; the second factor representing procedural justice) by means of a CFA. Results showed that the two factor model had a clearly better fit to the data, $\chi^2_{(147)}=820.929$, CFI=.906, RMSEA=.085, than the one factor model, $\chi^2_{(152)}=1,594.964$, CFI=.799, RMSEA=.123. Albeit the fit of the two factor model is not perfect, CFI values >.90, and RMSEA values <.10 are discussed to be still acceptable.

Furthermore, to justify that our measures are metric invariant across country samples⁶⁴) we ran a multiple group CFA with Amos Graphics 22 for authentic leadership and for emotional demands, comparing the unconstrained model with a model constraining the factor loadings to be equal across groups. The model assuming equal factor loadings ($\chi^2_{(208)}=891.994$, CFI=.892, RMSEA=.075) did not fit significantly better as compared to the unconstrained model ($\chi^2_{(196)}=851.425$, CFI=.896, RMSEA=.075) when using the Δ CFI of .005 as a reference (see Cheung and Rensvold⁶⁵), who criticized the χ^2 -difference-test, and suggested that Δ CFI values higher than .01 to be indicative of a significant decrease in fit). Likewise we could confirm metric invariance between the German and the Finnish sample for the 4-item measure of emotional demands (unconstrained model: $\chi^2_{(4)}=36.988$, CFI=.975, RMSEA=.115, equal measurement weights: $\chi^2_{(7)}=39.487$, CFI=.975, RMSEA=.087). As procedural justice, emotional exhaustion and neuroticism were measured with only three items each, no CFAs on the single factors could be performed.

Table 2. Estimated structural equation paths, and covariances

Estimated path	<i>B</i>	(<i>SE</i>)	<i>t</i>	<i>p</i>
AL (T1) → PJ	0.55**	(0.08)	7.24	.000
AL (T1) → EE	0.00	(0.08)	0.04	.969
PJ (T2) → EE	-0.32**	(0.07)	-4.38	.000
ED (T2) → EE	0.27**	(0.07)	3.96	.000
PJ x ED → EE	-0.14*	(0.07)	-2.01	.044
EE (T1) → EE	0.44**	(0.05)	8.40	.000
N (T3) → EE	0.35**	(0.07)	5.12	.000
AL → PJ → EE	-0.18**	(0.05)	-3.90	.000
Covariances				
ED (T2) ↔ AL (T1)	-0.02	(0.03)	-0.73	.467
EE (T1) ↔ AL (T1)	-0.18**	(0.05)	-4.01	.000
EE (T1) ↔ ED (T2)	0.47**	(0.07)	7.16	.000
N (T3) ↔ AL (T1)	-0.07°	(0.04)	-1.79	.073
N (T3) ↔ ED (T2)	0.28**	(0.06)	4.57	.000
N (T3) ↔ EE (T1)	0.75**	(0.09)	8.09	.000

Note. *N*=628, number of teams=168, number of missing data patterns=34.

AL=authentic leadership, EE=emotional exhaustion, PJ=procedural justice, ED=emotional demands, N=Neuroticism. Model fit indices: *H*₀ LogLL: -1,6617.315, *H*₀ Scaling correction factor for MLR: 1.338, *H*₁ LogLL: -1,6346.053, Information criteria: AIC: 3,3380.629, BIC: 3,3704.935, Adjusted-BIC: 3,3473.169, *df*=73.

°*p* < .10, **p* < .05, ***p* < .01, two-tailed.

Hypotheses testing

Means, standard deviations, reliabilities, and correlations of level 1 variables are presented in Table 1.

As can be seen from correlation analysis (see Table 1), authentic leadership was negatively related to emotional exhaustion at T1, *r* = -.19, *p* ≤ .01, and T3, *r* = -.20, *p* ≤ .01, providing first evidence for a direct effect of authentic leadership on emotional exhaustion.

The results^{b)} for the test of *H*₁ are presented in Table 2. The indirect effect from authentic leadership on emo-

^{b)} Please note, that we did additionally estimate the multilevel model for every dimension of authentic leadership separately to explore possible differences between the four facets (relational transparency, internal moral perspective, balanced processing and self-awareness). Actually, all four dimensions showed the same pattern of results as compared to our current model.

Table 3. Estimated conditional indirect effect of authentic leadership on emotional exhaustion through procedural justice at specific values of emotional demands (mean, one and two standard deviations under and above)

Values of emotional demands	B	(SE)	t	p
-2 SD	-0.05	(0.07)	-0.65	.515
-1 SD	-0.11*	(0.05)	-2.20	.028
M (0.00)	-0.18**	(0.05)	-3.90	.000
+1 SD	-0.24**	(0.06)	-3.99	.000
+2 SD	-0.30**	(0.09)	-3.56	.000

Note. N=628, number of groups=168.

* $p < .05$, ** $p < .01$, two-tailed.

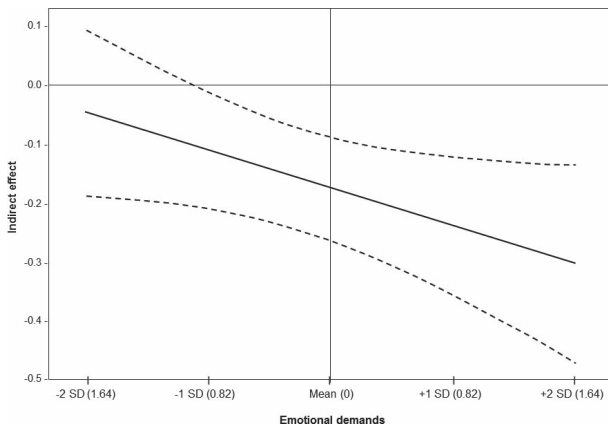


Fig. 2. Plotted indirect effect for specific values of emotional demands (bold line). Dotted lines represent confidence bands.

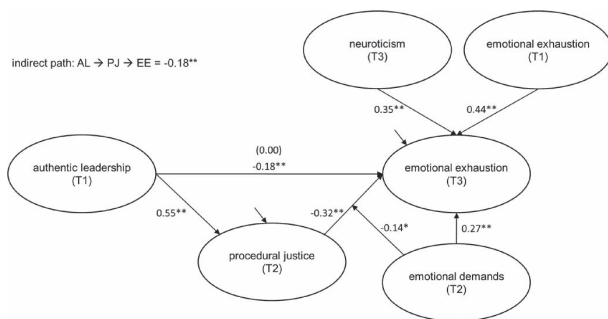


Fig. 3. Estimated structural equation model. Please note, that the model depicted does not perfectly fit the estimated structural equation model, especially regarding the interaction effect. In fact, this effect was estimated as a latent interaction effect. ** $p < .05$, * $p < .01$.

tional exhaustion was negative and significant, $B = -0.18$, $SE = .05$, $p < .001$, supporting hypothesis 1. This indicates that procedural justice mediates the relationship between authentic leadership and emotional exhaustion.

In H2, we assumed that the relationship between procedural justice and emotional exhaustion is moderated by the emotional demands. In fact, data revealed a significant

interaction effect with $B = -0.14$, $SE = 0.07$, $p = .044$, displayed in Table 2, thus supporting hypothesis 2. In detail, this means that the strength of the relationship between procedural justice and emotional exhaustion depends on the amount of emotional demands.

To test H3, we further examined whether the indirect path from authentic leadership on emotional exhaustion through procedural justice was conditional on special values of emotional demands. Table 3 and Fig. 2 show that the indirect effect was significant for higher values of emotional demands. In fact, at one standard deviation under the mean of emotional demands the conditional indirect effect was $B = -0.11$, $p = .028$, for the mean the conditional indirect was $B = -0.18$, $p < .001$, and for one standard deviation above the mean it was $B = -0.24$, $p < .001$. For low emotional demands (-2 SD) the effect failed to reach significance. In sum, our results support H3. Moreover, estimations show that the effect increases with larger values of emotional demands, which is in line with our specific predictions made in H2 and H3. The negative relationship between procedural justice and emotional exhaustion, and moreover, the negative indirect effect of authentic leadership on employee’s emotional exhaustion via procedural justice are stronger when emotional demands are high.

Discussion

Referring to the procedural justice literature^{6, 8, 10}, the aim of our study was to investigate the relationship between authentic leadership behavior and employees’ emotional exhaustion in a time-lagged design, and to identify the processes in-between. In fact, we assumed procedural justice to mediate the relationship between authentic leadership and employees’ exhaustion, whereby this should further depend on the emotional demands.

The empirical results supported all hypotheses. Prior correlation analysis revealed a negative relationship between authentic leadership and employees’ emotional exhaustion. When testing hypotheses, we succeeded in identifying procedural justice as a mediator since we found a negative indirect effect from authentic leadership on emotional exhaustion through procedural justice. This negative indirect effect was moderated by the emotional demands. The indirect effect between authentic leadership and emotional exhaustion was conditional on special values of emotional demands, in that the effect increased with larger values of emotional demands (see Table 3, and Fig. 2).

In line with previous empirical findings, authentic leadership could be shown to be negatively related to employ-

ee's strain^{1,2)} employee's perception of procedural justice. Authentic leaders may contribute to an increased justice perception in two ways. First, by acting in accordance with the Leventhal criteria³⁷⁾ and second, by providing information that is needed by the employee to appreciate the trustworthiness of their leader to prevent being exploited by him or her as described in the fairness heuristic theory^{7,8)}. If justice—and, therefore control—is lacking, this should be recognized as threatening and might be stressful⁴⁵⁾ because it could be interpreted as a low within-group status (group value model)⁶⁾ that is essential for social identity⁴⁶⁾.

Thereby, our results also underline the importance of procedural justice at work. They further support the literature that considers justice as a job resource⁴³⁾. If employees feel they are being treated in a procedural just manner by their leader (and therefore by their organization), this may reduce stress outcomes. Consequently, justice is essential for a healthy work environment, and most importantly, leaders seem to be important for the formation of justice perception. Up till today, leadership has been largely excluded in the procedural justice research¹¹⁾. The results of this study propose that leader's behavior is related to organizational justice perceptions, and this in turn may deteriorate employees' well-being. Hence, it seems promising to promote the integration of leadership, and justice concepts in the future.

Our results also conform to the justice research that found a negative relationship between organizational justice and emotional exhaustion^{40,41,44)}. In contrast to a study by Holstad, *et al.*⁶⁶⁾ showing a mediating role of procedural justice for the relationship between transformational leadership and emotional exhaustion using a cross-sectional design, the independent variable, the mediator and the dependent variable were assessed time-lagged.

This makes clear how long-lasting the effects of leadership behavior can be. The behavior of a leader could still be related to employee strain about one and a half years later.

We hypothesized that emotional demands moderate the path from procedural justice to emotional exhaustion, and we further assumed the indirect effect of authentic leadership to be conditional on special values of emotional demands. We did so, because employees in unpredictable work environments are assumed to use the fairness information to better cope with the uncertainty (uncertainty management theory)^{9,10)}. Especially in customer-focused jobs, where the majority of employees in European countries (similar to our sample) work⁴⁸⁾ the interactions with customers are hardly predictable. Employees usually do

not know what kind of customer they are going to meet next and what problems they might have to handle; therefore, they might feel insecure. To manage this uncertainty, employees rely on the fairness information they have⁹⁾. In consequence, procedural justice should be most salient in high emotionally demanding work environments. The empirical data supported this theoretical proposition. Procedural justice seems to be more salient and therefore seems to have a larger exhaustion-reducing effect when the emotional demands are high. Accordingly, the negative relationship between authentic leadership and emotional exhaustion was stronger when the emotional demands are perceived to be high. Especially in emotionally demanding jobs, authentic leadership might be beneficial to employee strain reduction by enhancing procedural justice at hand.

Although we succeeded in providing a boundary condition for the relationship between procedural justice and emotional exhaustion, it remains unclear which aspects influence the relationship between authentic leadership and procedural justice. According to Schmitt *et al.*⁶⁷⁾, people generally differ in how sensitive they are regarding to the perception of injustice which is usually termed *victim sensitivity*⁶⁸⁾. People who score high on this personality trait are more likely to interpret neutral cues as a threat⁶⁷⁾. Thus, it could be possible that those employees high in victim sensitivity recognize leader's behaviors more likely as unjust. In consequence, the relationship between authentic leadership and procedural justice should be smaller, further resulting in a decrease of the indirect effect of authentic leadership on employee's exhaustion. We encourage future studies to investigate this matter.

To the best of our knowledge, this study is among the very first to connect authentic leadership to procedural justice empirically. We provide new insights into how and under which conditions authentic leadership positively contributes to employee well-being. Additionally, our results enlarge the generalizability, and thereby the impact, of the results of those very few studies that have already linked authentic leadership to employees' emotional exhaustion in health care workers^{1,2,31)} as we tested the relationship in a large sample from different branches and countries. By employing a design with three measurement points to assess the relevant variables at different points in time and by controlling for the dependent variable measured at T1, our study additionally gains methodological quality and enables first-hand evidence of a potential causal link of the found relationships. Moreover, our results seem to exist independently of negative personality characteristics as we controlled for employee's neuroti-

cism in our research model.

Limitations

Besides the strengths of our study, of course, there are several constraints that may limit the interpretation of our results.

First, although we employed a longitudinal approach, we did only control for the dependent variable at T1. In a future study, we recommend to employ a full-crossed lagged panel design. By doing so, it would be possible to rule out reversed causation. Actually, procedural justice might influence the perception of emotional demands or the perception of authentic leadership. Therefore, causal interpretations of our results should be drawn only very carefully.

Second, we used self-report measures only, which may result in an overestimation of effects due to common method variance⁶⁹). Nevertheless, the time lags between the independent variable, the mediator, and the dependent variable reduce this kind of bias⁶⁹). Over and above this, self-report measures are the most appropriate for measuring strain outcomes (such as emotional exhaustion) as well as for the perception of procedural justice. Regarding authentic leadership, it would be possible to combine the self-report measures with expert ratings of leader's behavior in interactions with his/her followers to further minimize the common method bias. However, in field studies, this kind of operationalization is very difficult to attain for such a large sample. Moreover, it could be questioned whether leaders still behave genuinely during observation.

Third, dropout analyses revealed that the original sample at T1 differed significantly from the final sample that we used for hypotheses testing concerning a few demographic variables and emotional exhaustion. Therefore, we cannot preclude that there was a systematic bias based on self-selection. It might be possible that the people who completed our study had a special interest in the topic as they have a very high or low quality relationship with their leader or as they are very strained by their work, which is especially indicated by the drop-out analyses. Nevertheless, due to the very large sample size at T1, it is not astonishing that the differences between the compared samples were significant. Thereby, even very small differences became noticeable.

Fourth, our final sample was unbalanced regarding gender as the majority of our participants were female. As there are empirical evidences for general gender differences regarding the amount of reported strain and the perception of job demands^{70, 71}), this limits the generalizability

of our results. Nevertheless, we included several organizations from the service sector, for which the unbalanced gender distribution is representative as most employees in this sector are female. In consequence, our results are at least transferable to this specific subpopulation.

Fifth, as we conducted our study in countries from the western world which are characterized by an individualistic culture, our results cannot be applied to countries that are more collectivistic⁷²), such as China. It would be very interesting to know whether authentic leadership has the same positive effects on employee strain and if the mechanisms are comparable across different cultural settings. Especially as the appreciation of what constitutes to be inauthentic seems to differ across cultures⁷³).

Practical implications

Despite the limitations of our study, there are several practical implications. First, our results offer a great opportunity for organizations' personnel development. As we could show that authentic leadership behavior is negatively related to emotional exhaustion by "providing" a procedural fair treatment, leader development should focus on enhancing authentic leadership behaviors. Employees already holding a leader function and those who are going to become a leader in the future should be encouraged to share their knowledge with their followers, to obtain their employees' views and opinions, to admit making mistakes, and to act according to their own moral standards. Those of course, should not contradict organizational aims. Furthermore, leaders should be given detailed feedback concerning their own strengths and weaknesses, e.g., by implementing multisource feedback⁷⁴), so that they know what their abilities are and where they could improve. At the organizational level, procedures should be implemented to establish authentic leadership models and to foster a failure-friendly organizational culture where mistakes are communicated openly. Especially in service organizations, where emotional demands are high, those interventions seem promising.

Second, in this study, we were able to show that procedural justice does matter in the organizational context; especially in work environments which are hardly predictable. Therefore, organizations should provide guidelines for decision making processes which are in line with Leventhal's justice criteria³⁷). If it is clearly regulated how decisions should be made and what rules should be followed, the risk of leaders acting in a procedurally unjust manner should be reduced and employees' well-being should be supported.

Third, in our research, we identified emotional demands as a moderator of the relationship between justice and emotional exhaustion with regards to authentic leadership's indirect effect on emotional exhaustion through procedural justice. On the one hand, this means that procedural justice and authentic leadership are much more important in those professions where the emotional demands are high. For example, in jobs where employees have to handle customers, it is not possible to change the customer's behavior or to reduce the emotional demands in general. However, by leading authentically and by actively providing fair procedures in leader-employee interactions, the demand-related stress outcomes could be buffered effectively. For those jobs in particular, procedural justice seems to be very salient. On the other hand, we identified the need to make the available resource of procedural justice more salient to those who work in professions where emotional demands are low or average-sized. Thereby, positive outcomes of procedural justice might be heightened further. In such organizations, the existence of procedural fair decision making processes should be accentuated, particularly, for example, by implementing corresponding vision statements, core values or testimonials in their employer branding.

Conclusion

This article highlights that authentic leadership is a very promising construct in leadership research and practice. It has been demonstrated that there is still a large amount of work to do in researching the relationship between authentic leadership and employees' strain, on the one hand, to gain further information and, on the other hand, to provide support to our new results. In practice, organizations may actively contribute to the well-being of their employees by promoting authentic leadership and by establishing rules for and models of procedural fair decision making processes. This is especially necessary for people working in emotionally demanding jobs where the risk of burnout is quite high—as they may profit the most from authentic leader behavior-focused and justice-focused interventions.

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