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The „Good Things“ at Work –
Job Resources and Well-Being in Police Work

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Chapter 1

Introduction

Occupational health can be explored from either a pathogenic perspective or a salutogenic perspective (Bringsén, Andersson, Ejlertsson, & Troein, 2012). While the pathogenic approach focuses on risk factors and diseases, the salutogenic approach focuses on resources for positive health (Bauer, Davies, & Pelikan, 2006). Even though most studies on occupational health have traditionally adopted a pathogenic perspective, the salutogenic perspective has gained increasing popularity in research on health and well-being in the workplace in recent years (Bakker & Van Woerkom, 2018). According to Bakker and Van Woerkom (2018), this positive psychology twist is due to the growing awareness that the prevention of disease and dysfunction is not sufficient for the engagement and well-being of employees. Health promotion, in turn, focuses on the increase of resources that are linked to positive health outcomes (Bauer et al., 2006).

A particularly burdened occupational group are police officers (Frank, Lambert, & Qureshi, 2017). Much research has been conducted to explore risk factors in policing and associated ill health, thus drawing on the pathogenic perspective (e.g., Larsson, Berglund, & Ohlsson, 2016; Scholarios, Hesselgreaves, & Pratt, 2017; Violanti et al., 2018; Webster, 2013). Fewer studies have taken a salutogenic approach focusing on resources and positive health outcomes in the context of police work. That is why this thesis aims to explore resources and salutogenic health outcomes in policing and thus adds to research and practice with regard to health promotion in the group of police officers.

The research question that this thesis aims to answer is therefore: What resources in police work are associated with positive health outcomes in the group of police officers?

The Concept of Job Resources

Every job involves job demands as well as job resources (Schaufeli, 2017). While job demands are considered the “bad things” at work since they drain energy and provoke health risks, job resources are considered the “good things” at work due to multiple health-

promoting aspects (Schaufeli, 2017, p. 121). Currently one of the most popular frameworks in occupational health research that integrates job resources as a central determinant of employees' health is the job demands-resources (JD-R) model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). The JD-R model incorporates a health-promoting process alongside a health-impairing process (Bakker & Demerouti, 2007). Thus, in accordance with the statement by Richter and Hacker (1998) about the characteristics of health promotion theories, the JD-R model includes determinants of what maintains people's health even in the face of high demands that imply health risks. Correspondingly, Demerouti et al. (2001) define resources as "health-protecting factors" (p. 501). More specifically, within the JD-R model, job resources are defined as "those physical, psychological, social, or organizational aspects of the job that may do any of the following: (a) be functional in achieving work goal; (b) reduce job demands and the associated physiological and psychological costs; (c) stimulate personal growth and development" (Demerouti et al., 2001, p. 501). Examples of job resources are autonomy, feedback, social support from co-workers or supervisors and team cohesion (Schaufeli & Taris, 2014). On the one hand, job resources play an extrinsic motivational role since they are instrumental in achieving work goals and reducing job demands. On the other hand, job resources are believed to play an intrinsic motivational role since they enhance growth, learning and development (Bakker & Demerouti, 2008).

According to Bakker and Demerouti (2008), the intrinsic motivational role of job resources stems from the fact that resources fulfil basic human needs like the need for autonomy, relatedness or competence. This assumption is based on the self-determination theory (SDT; Deci & Ryan, 1985, 2000). For example, while social support and team cohesion may satisfy the need to belong and the need for autonomy, positive feedback increases job competence. Feelings of autonomy, relatedness or competence are associated with positive outcomes for both employees and organizations as they enhance job performance and work-related well-being (Bakker & Demerouti, 2008).

Job resources, in turn, may also serve as an extrinsic motivation since resourceful working environments foster the willingness of employees to direct their efforts and abilities towards their work tasks (Meijman & Mulder, 1998). For instance, social support from co-workers or supervisors may also help to achieve work goals while job control as a job resource may reduce job demands (Schaufeli, 2017). It is thus more likely that work tasks and work goals will be achieved, resulting in positive performance and employee well-being, too (Bakker & Demerouti, 2008).

The satisfaction of basic needs as well as the achievement of work goals are positive and desirable outcomes and closely related to work engagement (Schaufeli & Bakker, 2004) that is indicative of work-related well-being. As such, job resources are the most important drivers of work-related well-being (Bakker & Demerouti, 2008).

Well-Being and Work-Related Well-Being

Research publications on well-being distinguish between general "context-free" well-being and context-specific well-being; "job-specific" well-being is a context-specific expression of well-being (Warr, 1999, p. 393), hereinafter referred to as work-related well-being. While general well-being has a broader focus, including general feelings about one's life, general and work-related well-being are part of the broader concept of mental health (Warr, 1999). Mental health, in turn, is "a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community" (World Health Organization, 2014). The concept of well-being is thus strongly linked to a salutogenic understanding of health. Moreover, work-related and general well-being are not independent but interrelated: general well-being affects work-related well-being and work-related well-being has an impact on general well-being, too (Warr, 1999). For example, Warr (1999) specifies that "spillovers" (p. 395) might occur between work and private life in either direction with a positive as well as a negative impact.

Sonnentag (2015) highlights that research on work-related well-being has rarely studied well-being but rather focused on unwell-being instead. Most notably, the understanding of the concept of burnout and its specific symptoms have been the subject of a large body of research (Sonnentag, 2015). However, over the last two decades, positive aspects of well-being in the workplace such as work engagement have received increasing attention. Work engagement is considered to be the opposite, yet independent, concept of burnout (Schaufeli, Salanova, González-Romá, & Bakker, 2002). It is defined as "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli et al., 2002, p. 74). While vigor is the energetic component of work engagement and stands for high activation, the willingness to invest effort, mental resilience and persistence while working, dedication means high identification with one's work and a sense of significance, enthusiasm, inspiration and pride in one's work. The third dimension, absorption, refers to being highly focused on and fully engrossed in one's work, where time passes quickly and detaching oneself from work is difficult (Schaufeli et al., 2002). Bakker and Demerouti (2017) state that engaged employees are full of energy and enthusiastic about performing well as well as goal-oriented and focused on their work tasks which results in better performance. Hence, work engagement is positively related to job performance indicators like creativity or financial turnover (Bakker & Demerouti, 2008; Christian, Garza, & Slaughter, 2011). According to Bakker and Demerouti (2008), engaged workers perform more strongly because they experience positive emotions like happiness, joy and enthusiasm more often, have a better health status, are able to mobilize and create resources and to transfer their engagement to colleagues.

As stated above, the association of job resources and work-related outcomes as well as the health and well-being of employees is inherent to the JD-R model, a work stress model that has gained increasing popularity in recent research on occupational well-being. Another well-established model, the effort-reward imbalance (ERI) model, also focuses on working

conditions, namely the reciprocity of effort and reward structures at the workplace, and their association with health outcomes. The JD-R model and the ERI model that were applied in the studies within this thesis are described below.

The Job Demands-Resources Model

The first proposition of the JD-R model (Figure 1) is that all job characteristics can be classified as either job demands or job resources (Bakker & Demerouti, 2017; Demerouti et al., 2001). Job demands like a high workload or emotionally demanding interactions with clients or customers – the "bad things" (Schaufeli, 2017, p. 121) – are defined as those physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological effort and are therefore associated with certain physiological and/or psychological costs (Demerouti et al., 2001). In contrast and as stated above, job resources refer to those physical, psychological, social, or organizational aspects of the job that are functional in achieving work goals, reducing job demands and related physiological and psychological costs or stimulating personal growth, learning and development (Bakker & Demerouti, 2007; Demerouti et al., 2001). The second proposition of the JD-R model is a dual process, a health-impairing process and a health-promoting process that is referred to as a motivational process within the model. While job demands trigger a health impairment process and predict burnout as well as ensuing negative outcomes concerning health or the organization, job resources are the most important predictors of work engagement (i.e., work-related well-being) and related positive outcomes (Schaufeli, 2017). Work engagement is hence a mediator in the relationship between job resources and positive outcomes like job performance while burnout mediates the relationship between job demands and negative outcomes like employee turnover in the long term (Schaufeli & Taris, 2014). Moreover, job resources are able to compensate for high job demands and mitigate burnout. Within the JD-R model, job resources thus promote health in two ways: by fostering work engagement and

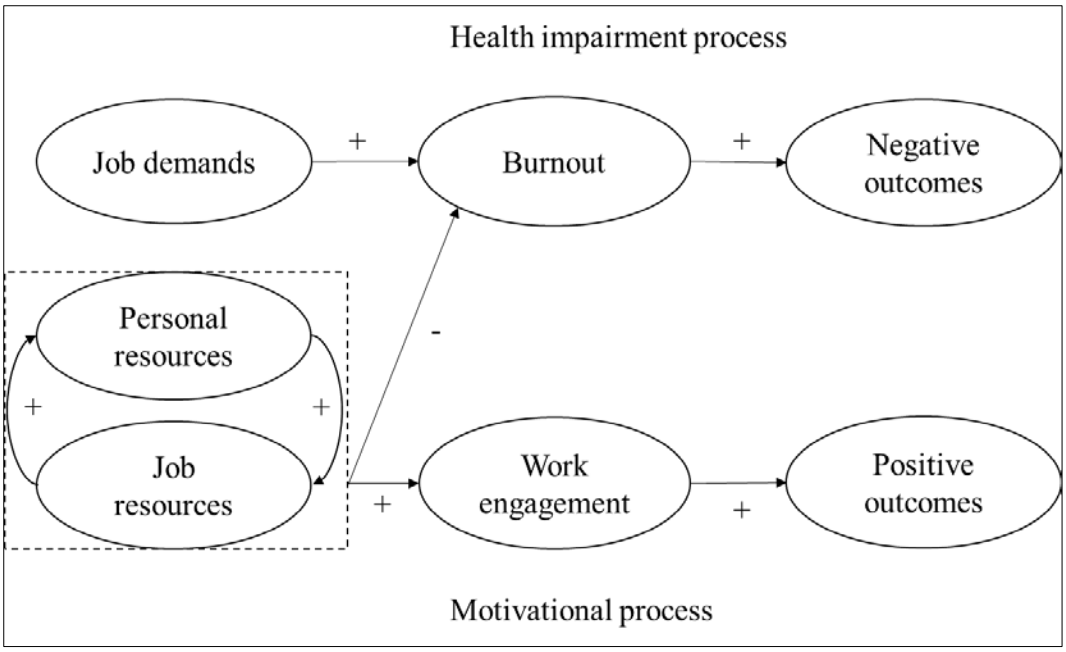

Figure 1: The job demands-resources model based on Schaufeli (2017) and Bakker and Demerouti (2014).

related positive outcomes and by reducing strain, hence burnout, induced by job demands and related negative outcomes. The dual pathways of the JD-R model have been confirmed empirically in a wide range of studies (for an overview cf. e.g., Bakker and Demerouti (2017) or Schaufeli and Taris (2014)). However, direct links between job characteristics and health outcomes have rarely been considered in JD-R research to date (Brauchli, Jenny, Füllemann, & Bauer, 2015).

Besides job resources, individual factors, namely personal resources, are also determinants of work engagement (Hobfoll, 1989). The JD-R model builds on Hobfoll's Conversation of Resources (COR) theory where resources are generally defined "as those objects, personal characteristics, conditions, or energies that are valued by the individual or that serve as a means for attainment of these objects, personal characteristics, conditions, or energies" (Hobfoll, 1989, p. 516). In COR theory, resources of different origins and qualities play a central motivational role since individuals strive to attain, maintain and defend their resources whereas stress is a result of anticipated or actual resource loss (Hobfoll, 2002). The consideration of job resources within the definition of resources in COR theory is described

above. Personal resources, in turn, are defined as aspects of the individual that are linked to resilience. As positive self-evaluations, personal resources refer to an individual's sense of their ability to successfully control and impact their environment (Hobfoll, Johnson, Ennis, & Jackson, 2003). The same applies to job resources but with a broader, not work-related perspective: "personal resources (a) are functional in achieving goals, (b) protect from threats and the associated physiological and psychological costs, and (c) stimulate personal growth and development" (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009, p. 236). Self-efficacy, optimism and organization-based self-esteem are examples of personal resources (Schaufeli & Taris, 2014). As aforementioned, personal resources are also strongly related to work-related well-being (cf. also Bakker & Demerouti, 2008). Moreover, since people do not only seek to obtain, retain and protect their resources but also try to accumulate them job resources and personal resources are mutually related in the prediction of work-related well-being (Bakker & Demerouti, 2008; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007; cf. Figure1). Self-efficacy, for example, has been shown to partially mediate the relationship between job resources and work engagement in cross-sectional (Caesens & Stinglhamber, 2014; Xanthopoulou et al., 2007) as well as longitudinal (Xanthopoulou et al., 2009) study designs. However, the role of personal resources within the JD-R model is still unclear (Schaufeli, 2017). In the relevant literature, the direct impact on work-related well-being is equally discussed as the moderating and mediating role of personal resources in the relationship between job resources and work-related well-being (for an overview cf. Schaufeli & Taris, 2014). Reciprocal effects between job resources, personal resources and well-being outcomes are reported, too (Llorens, Bakker, Schaufeli, & Salanova, 2006; Reis, Hoppe, & Schröder, 2013).

Taken together, the JD-R model provides a suitable framework for studying job resources as well as personal resources in the context of occupational well-being. According to Bakker and Demerouti (2014), the flexibility of the JD-R model that allows all kinds of job

characteristics to be modeled as either job demands, job resources or personal resources makes the model unique, facilitates its application in various working environments and is the reason for its popularity.

The Effort-Reward Imbalance Model

The effort-reward imbalance (ERI) model (Siegrist, 1996; Figure 2) is an early work stress model that explains employee health and well-being based on principles of social exchange. The ERI model assumes that employees invest effort in their work and expect rewards in return. Rewards include money, esteem and career opportunities; consequently, the ERI models distinguishes between esteem reward, status reward and security reward (Siegrist, 1996; Siegrist et al., 2004). If reciprocity of cost and gain is not met with regard to high effort (cost) and low reward (gain) negative emotions may occur and result in stress. The ERI model further assumes that chronic stress may, in turn, increase the risk of cardiovascular disease and other adverse health events (Siegrist, 1996; Siegrist et al., 2004). The imbalance between high effort and low reward that results in stress and illness is referred to as the extrinsic hypothesis within the ERI model and is hereinafter referred to as ERI. Furthermore, the model introduces a personal component, namely overcommitment, which describes a motivational pattern of excessive work-related commitment and of a high need for approval (Siegrist et al., 2004). The second hypothesis, the intrinsic overcommitment hypothesis, implies that employees with high overcommitment are at an increased risk of strain and health problems. The third hypothesis, the interaction hypothesis, sets out that employees who show a high level of overcommitment and experience high extrinsic ERI at the same time are at the highest risk of developing chronic stress and adverse health effects (Siegrist, 1996; Siegrist et al., 2004).

Research on health and work-related well-being in the context of the ERI model has so far mainly focused on ill health and unwell-being in the workplace. Since the model originates from medical sociology, it is primarily physical health outcomes like cardiovascular disease

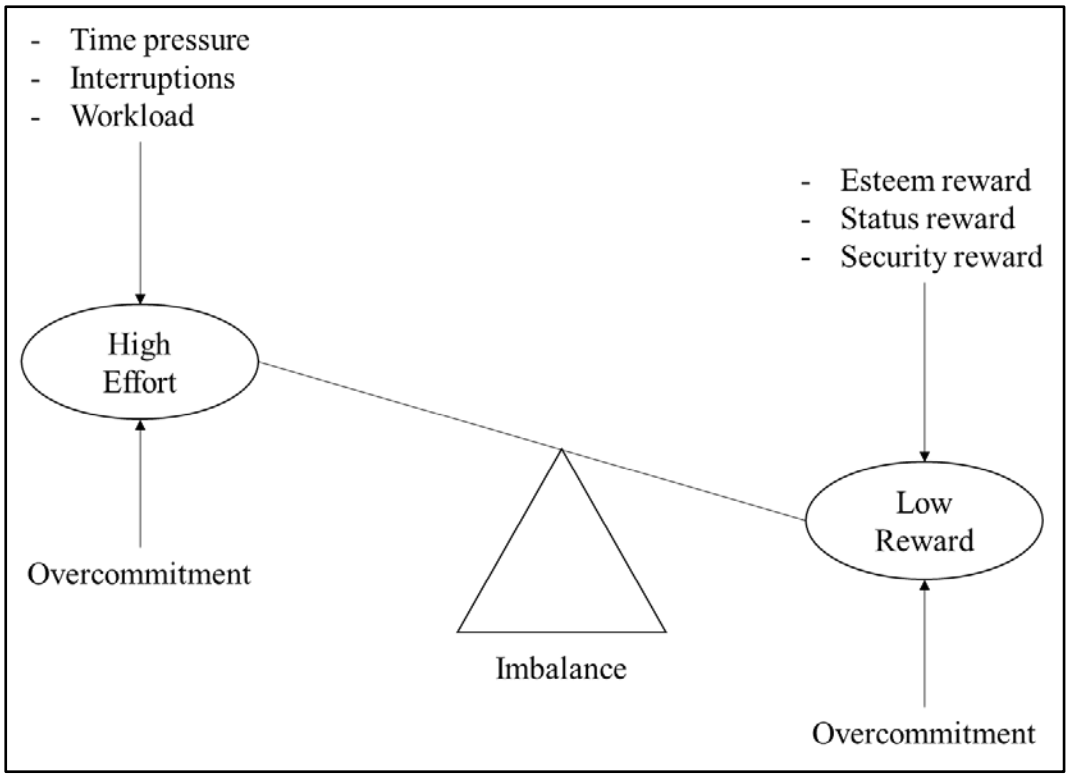

Figure 2: Effort-reward imbalance model based on Siegrist (1996).

(e.g. Eddy, Wertheim, Kingsley, & Wright, 2017; Gilbert-Ouimet, Trudel, Brisson, Milot, & Vézina, 2014; Siegrist, 2010), musculoskeletal pain (Koch, Schablon, Latza, & Nienhaus, 2014) and immunity (Eddy, Heckenberg, Wertheim, Kent, & Wright, 2016) that have been studied with regard to ERI in the work context. Results show that ERI is consistently associated with ill health also with regard to mental health like depressive disorders (Rugulies, Aust, & Madsen, 2017; Siegrist, 2013) and exhaustion (Chirico, 2016; Van Vegchel, Jonge, Bosma, & Schaufeli, 2005) as an indicator of work-related unwell-being. Positive outcomes in ERI research are rare (Kinnunen, Feldt, & Mäkikangas, 2008).

Though the ERI model is less flexible with regard to modeling a broad range of job characteristics including job resources it provides a useful basis for studying the specific relevance of reward in the context of work. Reward is understood and considered as an important job resource here. With overcommitment, the ERI model also has a personal component. However, in the sense of the above-mentioned definition, overcommitment is less

a personal resource, at least not an adaptive one. Since this excessive striving and need for approval and esteem in the workplace amplifies the negative impact of ERI on employee health it might be rather considered a (maladaptive) pattern for coping with demands (Siegrist, 2008). After all and in the long run, overcommitted individuals are at a high risk for exhaustion and other adverse health events (Siegrist, 2008). However, the ERI model also allows examining the interaction between reward, effort and overcommitment. In particular, reward might be more relevant in certain working environments than in others. That is why the ERI model could be enhanced further by taking a salutogenic perspective and studying positive outcomes of well-being in the workplace.

Preliminary Conclusion: The Role of Job Resources in Two Work Stress Models

While both the JD-R model and the ERI model address the association of job characteristics and health or work-related well-being respectively they differ with regard to the conceptualization of job resources and the assumed underlying processes. The JD-R model, on the one hand, includes a motivational process that describes how job resources of various kinds promote work engagement as an expression of work-related well-being and further positive outcomes for the organization and the individual. Since work engagement mediates the relationship between job resources and positive outcomes in the JD-R model, the model does not provide any direct associations between job resources and positive outcomes in terms of positive health. Within the ERI model, on the other hand, reward is the only job resource that is considered and almost exclusively examined in the interplay with effort as part of the ERI ratio. Additionally, it is predominantly associations between ERI and ill health outcomes that have been studied to date; links with work-related well-being have not gained much attention yet.

This thesis thus adds to the current state of research by enhancing the perspective of job resources and well-being within both models: By applying the JD-R model, the direct relationship between job resources and general well-being is examined within the

motivational process without neglecting the health impairment process (study 1). A work-related well-being outcome in terms of work engagement is analyzed within the framework of the ERI model, a rarely considered perspective to date (study 3). Furthermore, the association between job resources, self-efficacy as a personal resource as well as work-privacy conflict as a job demand and work engagement is studied on the basis of the assumptions of the JD-R model, thereby integrating the relevant aspects of a specific working context (study 2).

Job Characteristics and Well-Being in Police Work

Since job characteristics differ between jobs (Bakker & Demerouti, 2014) it is essential to consider the relevance of certain job demands and job resources as well as their association with health and well-being in the context of police work. In general, police work is regarded as a particular stressful occupation (Burke, 2017; Liberman et al., 2002; Van der Velden et al., 2013; Webster, 2013, 2014). According to Brown and Campbell (1990) as well as Shane (2010), job demands in policing in terms of stressors can be classified as either operational or organizational stressors. While operational stressors arise from the "job content" and are inherent to police work, for example overtime hours or violent incidents, organizational stressors relate to the "job context" and include aspects of the organization and co-workers such as staff shortages or poor communication (Shane, 2010, p. 807). Unexpectedly, it is not operational but organizational stressors that have emerged as primary sources of stress in policing (Bishop et al., 2007; Brown & Campbell, 1990; Purba & Demou, 2019; Shane, 2010; Stinchcomb, 2004). For example, workload as an organizational stressor – perhaps as a consequence of staff shortages – was identified as a predictor of burnout (Baka, 2015; Q. Hu, Schaufeli, & Taris, 2016; Van den Broeck, De Cuyper, De Witte, & Vansteenkiste, 2010), mental ill health (Collins & Gibbs, 2003) and reduced well-being (Juniper, White, & Bellamy, 2010) in relevant research on stressors in policing. However, operational stressors such as demanding operations or negative interactions with citizens have been found to also negatively affect police officers' mental health and well-being (Collins

& Gibbs, 2003; Van der Velden, Kleber, Grievink, & Yzermans, 2010). Another job demand in police work that is not to be underestimated is the reconciliation of work and private life. Due to shift work and overtime hours, work-privacy conflict is a major challenge in policing (Brough, 2005; Brown & Campbell, 1990; Griffin & Sun, 2018; Hall, Dollard, Tuckey, Winefield, & Thompson, 2010; Mikkelsen & Burke, 2004). At the same time, opportunities for career development are limited due to rigid hierarchies (Shane, 2010).

Meanwhile, job resources have been shown to promote work-related well-being (Q. Hu et al., 2016; Van den Broeck et al., 2010; Wang & Leather, 2016) and reduce adverse health outcomes including burnout in police officers (Q. Hu et al., 2016; Martinussen, Richardsen, & Burke, 2007). For example, social support in the workplace has emerged as a key factor in studies on the work related well-being of police officers (Biggs, Brough, & Barbour, 2014; Gillet, Huart, Colombat, & Fouquereau, 2013; Van Gelderen & Bik, 2016). Furthermore, workplace support was found to counteract negative health outcomes (Hansson, Hurtig, Lauritz, & Padyab, 2017; Q. Hu et al., 2016; Van den Broeck et al., 2010). Reward is another job resource that appears to be able to prevent burnout in policing (S. Hu, Wang, Liu, Wu, & Yang, 2015). Research on personal resources in policing has, inter alia, examined optimism and self-efficacy (Demerouti, Sanz-Vergel, Petrou, & Van den Heuvel, 2016) as well as resilience and coping strategies (Balmer, Pooley, & Cohen, 2014). For example, self-efficacy predicted desirable outcomes such as job satisfaction (Stetz, Stetz, & Bliese, 2006) and high performance (Demerouti et al., 2016). However, there is little evidence for gain circles between job and personal resources in the context of police work.

In general, research on job characteristics and well-being in police work has mainly focused on unwell-being in terms of burnout and mental ill health (e.g., Baka, 2015; Burke & Mikkelsen, 2006; Garbarino, Cuomo, Chiorri, & Magnavita, 2013; S. Hu et al., 2015; Martinussen et al., 2007). Fewer studies have taken positive well-being outcomes into account, too (Q. Hu et al., 2016; Van den Broeck et al., 2010). This does not come as a

surprise since the occupation of police officers is considered highly demanding, putting them at an increased risk for negative outcomes with regard to health and well-being (Violanti et al., 2006). However, although police officers are particularly burdened they are also characterized by relatively high levels of work engagement (Brunetto, Teo, Shacklock, & Farr-Wharton, 2012; Richardsen, Burke, & Martinussen, 2006; Schaufeli, Bakker, & Salanova, 2006), which is an indicator of work-related well-being. Relatively little research has been conducted so far about the positive link between job resources – the good things at work – and well-being in police work. Personal resources might play a role in this relationship, too. This thesis therefore adds to the current state of research by explicitly examining the association between resources and well-being in policing.

Research Objective

The studies carried out within the framework of this thesis examined relationships between job characteristics and well-being in police officers with regard to two job stress models, namely the JD-R model and the ERI model. To date, research in the context of police work has mainly focused on negative well-being outcomes in terms of ill health and burnout. Moreover, police officers have rarely been the subject of studies on these job stress models at all. That is why this thesis aimed to gain further knowledge about the drivers that foster the well-being of police officers and have practical health-promoting implications. By explicitly focusing on job resources a salutogenic perspective is taken while relationships with specific job demands and a personal resource are considered, too. Accordingly, primarily positive outcomes are studied that relate to general or work-related well-being. Furthermore, the role of job resources within the applied job stress models is analyzed in order to examine similarities, differences and complementarities of the functions of job resources within these models. Moreover, the scope of the applied job stress models is broadened by examining outcomes of well-being that have rarely been studied with regard to both models before.

In study 1, the JD-R model is applied to examine, within the motivational process, the relationship between job resources and general well-being as operationalized by the well-being index of the World Health Organization (WHO-5, Bech, Olsen, Kjoller, & Rasmussen, 2003). Most studies that apply the JD-R model analyze the relationship between job resources and work engagement as an expression of context-specific well-being in the workplace and a mediator in the relationship between job resources and further positive organizational or health outcomes. In contrast, study 1 examines the direct link between job resources and general well-being, which is regarded as a direct mental health outcome, an association that has not yet been thoroughly studied. In this study and as intended by the JD-R model, the health impairment process considering the association between job demands and exhaustion in the group of police officers is taken into account, too. Thus, it is also possible to test for the strain-reducing link between job resources and exhaustion as assumed within the JD-R model. By gaining insights about what job resources are able to promote the well-being of police officers or reduce exhaustion, those job resources can be targeted explicitly in the context of health promotion interventions.

Research questions in study 1: Applying the JD-R model to police officers, is there a positive association between job resources and general well-being? What job resources are related to general well-being in police work?

Study 2 focuses on the motivational process of the JD-R model only. Social support, whether by supervisors or co-workers, is one of the most important job resources in policing; its positive relation to work engagement has been shown in meta analyses across different occupations (Christian et al., 2011; Halbesleben, 2010). However, little is known about the underlying processes which mediate the relationship between social support and work engagement. In study 2, the mediating role of self-efficacy as a personal resource and work-privacy conflict as a specific job demand is examined with regard to this relationship. Work-privacy conflict is a major hindrance job demand for police officers; self-efficacy is a key

prerequisite for their ability to cope with a demanding and stressful working environment. The understanding of predictors for work engagement can thus be addressed in the form of tailor-made health promotion programs.

Research questions in study 2: How is social support related to work engagement among police officers? Do self-efficacy and work-privacy conflict mediate the relationship between social support and work engagement?

In study 3, predictors of work engagement among police officers are examined within the ERI model. To date, the predictive value of the components of the ERI model, namely effort, reward, the ERI ratio and overcommitment, have mostly been studied with regard to ill health outcomes. To broaden this pathogenic perspective the salutogenic outcome in terms of work-related well-being is considered as well as its association with the ERI model components. Particular attention is paid to reward as a specific job resource within the ERI model by analyzing the role of the three reward systems – esteem reward, status reward and security reward – with regard to work engagement. Effort and overcommitment are also taken into account. Thus, useful implications can be derived especially with regard to the relevance of reward systems in policing that might be incorporated in the organizational structure.

Research questions in study 3: Applying the ERI model, which of the components of the ERI model predict work engagement? What role do reward systems play with regard to work engagement among police officers?

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Study 1

Job Demands, Job Resources, and Well-Being in Police Officers – A Resource-Oriented Approach

Chapter 2

Wolter, C., Santa Maria, A., Wörfel, F., Gusy, B., Lesener, T., Kleiber, D., & Renneberg, B. (2019). Job demands, job resources, and well-being in police officers – a resource-oriented approach. *Journal of Police and Criminal Psychology*, 34(1), 45-54 https://doi.org/10.1007/s11896-018-9265-1

Abstract

This study examined the association between job characteristics, namely job demands and job resources, and mental health outcomes in terms of emotional exhaustion and well-being among police officers. Eight hundred forty-three German police officers participated in a cross-sectional online survey. Structural equation modeling was used to examine the validity of the dual process model of the job demands-resources (JD-R) framework in the context of police work. Job demands (verbal assaults by citizens, workload, and administrative stressors) predicted emotional exhaustion whereas job resources (team support, shared values, and perceived fairness) predicted well-being. Moreover, job resources were directly and negatively associated with emotional exhaustion. The findings confirm the capacity of job resources to simultaneously promote well-being and reduce emotional exhaustion. Work place interventions should thus not merely decrease job demands. To improve and protect police officers' well-being it is advisable to promote job resources. A supportive and fair organizational climate based on shared values is required to foster mental health in the context of police work.

Keywords: police officers, well-being, emotional exhaustion, job demands-resources model

Introduction

Recent years' research on occupational health has consistently shown that job characteristics affect employees' well-being (e.g., Bakker & Demerouti, 2014). While job demands like work overload, time pressure and emotional demands are associated with reduced well-being, job resources such as social support, procedural fairness and trust in management have a positive effect on well-being (Schaufeli & Taris, 2014). From a resource-oriented perspective it is of topmost importance to identify job resources – while reducing job demands at the same time – in order to promote occupational health and well-being.

A theoretical framework combining both job demands and job resources as well as their relationship with work-related well-being is the job demands-resources model (JD-R model; Bakker & Demerouti, 2007; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Schaufeli & Taris, 2014). Most studies using the JD-R framework focus on burnout and work engagement as outcomes representing employee well-being (Bakker & Demerouti, 2007). Studies on different organizational (e.g. organizational commitment, turnover intention) or individual outcomes (e.g. health) consider work engagement and burnout to be mediators, as suggested by the JD-R framework. Meanwhile, direct effects of job characteristics on health outcomes have not yet been thoroughly studied (Brauchli, Jenny, Füllemann, & Bauer, 2015).

Police officers represent an employee group that is especially vulnerable to workplace stress due to high job demands (Violanti et al., 2006). Since police work is considered a particular stressful occupation (Liberman et al., 2002; Webster, 2013) police officers are regarded as being at high risk for reduced well-being in terms of mental health problems (Van der Velden et al., 2013) and burnout (Backteman-Erlanson, Padyab, & Brulin, 2013; R. J. Burke & Mikkelsen, 2006). Job demands and job resources of police officers have already been studied within the JD-R framework. However, most studies have taken a deficit-oriented perspective by focusing on ill mental or physical health, and burnout (Baka, 2015; Martinussen, Richardsen, & Burke, 2007). To our knowledge, no studies in the context of

police work have taken a resource-oriented approach by focusing on both the positive health impact of job resources and their direct mitigating effect on adverse health outcomes. In addition, little is known about police officers' mental well-being and the predictive value of job resources and job demands for it. Therefore, we tested to what extent job resources promote police officers' well-being. Simultaneously, we examined the protective direct impact of job resources on emotional exhaustion. The aim of this research is to derive interventions that promote the well-being of policewomen and -men by identifying predictors of well-being, namely specific job resources. Since emotional exhaustion serves as an indicator of reduced well-being, its relationship with job demands and job resources is also considered in the present study.

Theoretical Framework JD-R

The JD-R framework (Bakker & Demerouti, 2007; Demerouti et al., 2001; Figure 1) has gained increasing popularity among researchers in occupational and organizational psychology over the past decade. The core assumption of the model posits that job characteristics can be classified as either job demands or job resources (Bakker & Demerouti, 2007). Job demands (e.g. high workload, demanding interactions with clients or customers) refer to those physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological effort and are thus associated with physiological and/or psychological costs like ill health and burnout (Demerouti et al., 2001). As such, job demands are the most important predictors of emotional exhaustion, which is the central dimension of the burnout syndrome defined as extreme fatigue (Demerouti, Bakker, Vardakou, & Kantas, 2003). On the other hand, job resources (e.g. procedural fairness, social support from colleagues/supervisors, team cohesion) have been defined as those physical, mental, social, or organizational job characteristics that are functional in attaining work goals, supportive in reducing job demands and associated physiological and/or psychological costs, and stimulate personal growth and development (Bakker & Demerouti, 2007; Demerouti et

al., 2001). Accordingly, job resources are the most important predictors of motivation and work engagement, i.e. work-related well-being (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007). All job characteristics can be modeled as either job demands or job resources in all kinds of working environments (Bakker & Demerouti, 2014). This flexibility makes the JD-R framework both unique and popular. The JD-R framework further assumes that job demands and job resources trigger two relatively independent processes, a health impairment process and a motivational process (Bakker & Demerouti, 2007). While the health impairment process consists of job demands as the most important predictors of outcomes like strain, emotional exhaustion and health problems, the motivational process describes job resources as crucial predictors of motivation or work engagement (Bakker & Demerouti, 2007). Furthermore, the JD-R framework posits a direct link between job resources and burnout, but no (or merely a weak) relation between job demands and work engagement (Schaufeli & Taris, 2014).

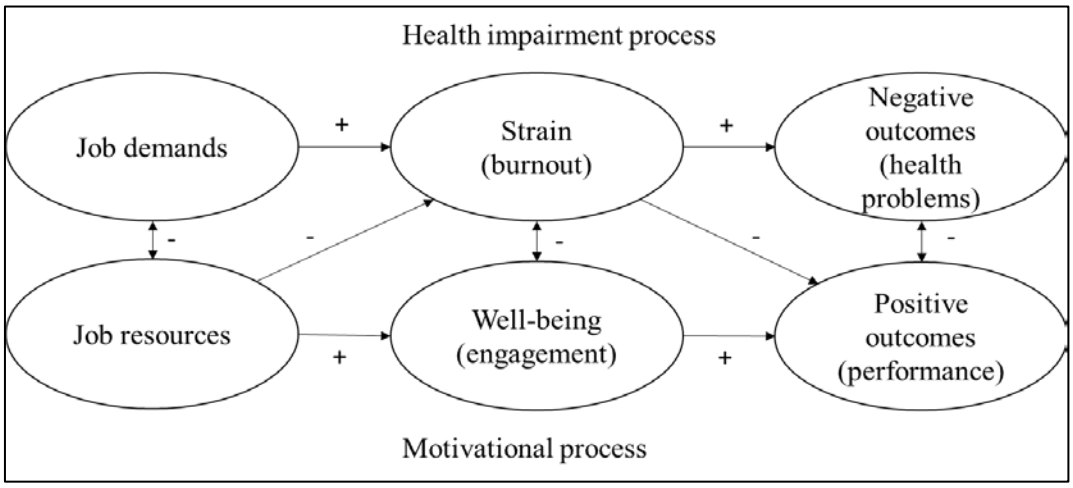

Figure 1. The dual process model (Schaufeli & Taris, 2014).

This study focuses on the motivational or health promoting path without neglecting the health impairment process. Job demands and emotional exhaustion as the central burnout component are taken into consideration, too. Through modeling the dual process model inherent in the JD-R framework, the aim is to identify the specific role of job resources in

police officers' well-being within that framework. In our study, well-being is operationalized as mental well-being in general, thus indicating a direct health outcome and not work-related well-being in terms of work engagement (Sonnentag, 2015). Thus, we are interested in the direct relationship between job characteristics, namely job demands and job resources, and well-being in terms of mental health in addition to emotional exhaustion in a sample of German police officers.

Job Demands and Job Resources in Police Officers

Empirically, the assumptions of the JD-R framework have been tested and approved across different occupational groups in cross-sectional as well as longitudinal research designs (Schaufeli & Taris, 2014). To date, research on job demands and job resources in the police context has mainly focused on burnout as the outcome (R. J. Burke & Mikkelsen, 2006; Martinussen et al., 2007; Van den Broeck, De Cuyper, De Witte, & Vansteenkiste, 2010) or burnout as a mediator between job characteristics and individual health or organizational outcomes (Baka, 2015; Q. Hu, Schaufeli, & Taris, 2016; Martinussen et al., 2007). Fewer studies have taken the motivational process into account predicting work-related well-being (Q. Hu et al., 2016; Van den Broeck et al., 2010), no research is known that has studied other general well-being outcomes applying the JD-R framework.

In terms of job demands in the context of police work, Baka (2015) identified interpersonal conflicts at work, organizational constraints and quantitative workload as relevant stressors and strains showing direct as well as indirect effects (via burnout) on mental as well as physical health. Other studies also identified positive associations of workload and burnout (Q. Hu et al., 2016) or exhaustion (Van den Broeck et al., 2010). In studies beyond the JD-R framework, organizational stressors rather than operational stressors have emerged as most significant for police officers (Bishop et al., 2007; Brown & Campbell, 1990; Shane, 2010; Stinchcomb, 2004) showing positive relationships with psychological ill-health (e.g., Bishop et al., 2007). Workload was found to be a major organizational stressor in two

different samples of British police officers showing strong associations with mental ill-health (Collins & Gibbs, 2003) and a negative relation with well-being (Juniper, White, & Bellamy, 2010). Further organizational job demands linked to reduced well-being are poor communication (Brown & Campbell, 1990; Collins & Gibbs, 2003; Van der Velden, Kleber, Grievink, & Yzermans, 2010) and lack of control and autonomy (Collins & Gibbs, 2003; Larsson, Berglund, & Ohlsson, 2016). Nevertheless, operational stressors are also significantly associated with mental health problems and poor well-being. Verbal threats or aggression from the public (citizens) were also found to be associated with mental ill-health in police officers (Collins & Gibbs, 2003; Van der Velden et al., 2010).

Job resources that have been proven relevant in police work within the JD-R framework are social support by supervisors or colleagues (Q. Hu et al., 2016; Van den Broeck et al., 2010), job control (Q. Hu et al., 2016) and autonomy (Van den Broeck et al., 2010). This supports the notion that the motivational process promotes work-related well-being and shows negative relations with either burnout (Q. Hu et al., 2016; Martinussen et al., 2007) or emotional exhaustion as a single indicator of burnout (Van den Broeck et al., 2010). In a study based on the job demand-control-support model (Karasek & Theorell, 1990), control and support were positively related to well-being (Wang & Leather, 2016). Hansson, Hurtig, Lauritz, and Padyab (2017) found social support allaying job strains' negative impacts on mental health in a sample of police officers. Other researchers report a fair organizational climate in terms of procedural justice within the police department (concerning supervisors, coworkers and policies) to have a significant indirect effect on officer well-being via decreased maladaptive behavior and higher self-legitimacy (Trinkner, Tyler, & Goff, 2016).

Apart from work engagement, positive well-being outcomes having been studied in police officers are job satisfaction (Brough, 2005; K. J. Burke & Paton, 2006) and quality of life indicators such as life satisfaction and positive affect (Hart, Wearing, & Headey, 1993,

1994). No study is known that has focused on general well-being as the positive dimension of mental health.

To address these research gaps, the aim of the current study is to identify the direct health promoting impact of job resources on well-being as well as the direct mitigating impact on emotional exhaustion in a sample of police officers. Thus, we are testing the dual process model inherent in the JD-R framework by focusing on the health promoting process while considering the health impairment process at the same time. The hypothesized model is shown in Figure 2. Precisely, our hypotheses are as follows:

Hypothesis 1: Workload, verbal assaults by citizens and administrative stressors as job demands are positively related to emotional exhaustion.

Hypothesis 2: Team support, shared values and perceived fairness as job resources are positively related to well-being.

Hypothesis 3: Job resources are directly and negatively related to emotional exhaustion.

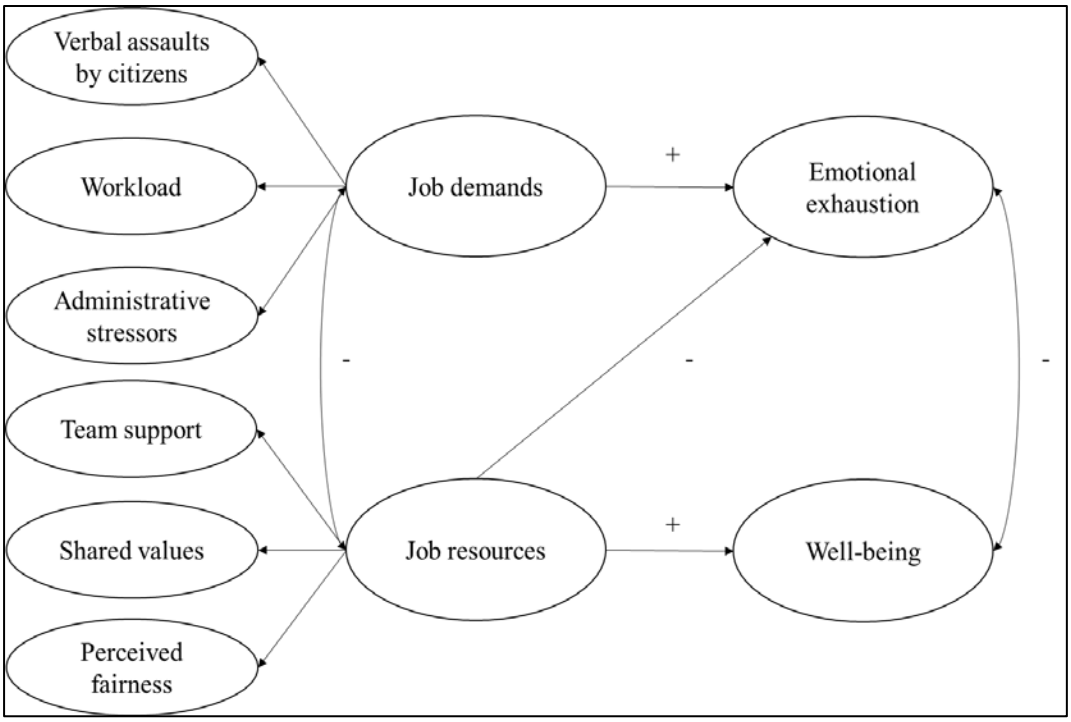

Figure 2. Hypothesized dual process model. All exogenous latent constructs are represented by manifest variables shown in correlation matrix in Table 2.

Method

Participants and Procedure

The study was part of a health monitoring program in a German police department. In total 1857 e-mail invitations were sent to police officers for an online survey via their working e-mail address. Officers out of office during the survey received a paper pencil version of the questionnaire at their home address. The survey was completed by 941 police officers resulting in a response rate of 50.7%. In the present study only police officers working with citizens were included in the data analysis since verbal assaults by citizens was one operationalization of job demands. Thus, the final sample consisted of N = 843 police officers, most of whom were male (n = 609; 72.2%), 234 (27.8%) were female. Their mean age was 40.9 years (SD = 9.04) and their mean tenure within the police force was 19.78 years (SD = 10.12) ranging from 1 to 43 years. Most officers worked full-time (n = 793, 94.1%) and held a non-leadership position (n = 661, 78.5%). More than half of the participants worked primarily in field service (65.2%) while 34.8% of the police officers did mainly office work.

Measures

We assessed *job demands* by workload, verbal assaults by citizens while being on duty, and administrative stressors. *Workload* was measured by the 3-item Effort-scale taken from the short version of the Effort-Reward Imbalance (ERI) Questionnaire (Siegrist, Wege, Pühlhofer, & Wahrendorf, 2009). Items were scored on a 4-point scale ranging from 1 (*I don't agree at all*) to 4 (*I totally agree*). An example item is "I have constant time pressure due to a heavy work load". Cronbach's alpha was .73 in the current study. *Verbal assaults by citizens* like verbal threats, insults and abuses police officers had experienced within the last 12 months were assessed with a 3-item measure on a 9-point scale (Bosold, Ohlemacher, Kirchberg, & Lauterbach, 2002). Response categories ranged from 1 (*never*) to 9 (*several times per day*). A sample item is "In the last 12 months citizens verbally threatened me." In our study, Cronbach's alpha was .96. *Administrative stressors* were measured with three items adapted by Beerlage, Arndt, Hering, Nörenberg, and Springer (2008) based on an original measure by Kleiber, Gusy, Enzmann, and Beerlage (1992). The items were scored on a 5-point scale ranging from 1 (*never*) to 5 (*always*). A sample item is "I had to make decisions without having all necessary information available." Here, Cronbach's alpha was .62.

Job resources were operationalized as team support, shared values, and perceived fairness within the police department. All three scales were applied in an adapted German version by Beerlage, Hering, and Springer (2007) based on the Organizational Check-up Survey (OCS; Leiter & Maslach, 2000). Response categories for all items ranged from 1 (*I don't agree at all*) to 5 (*I totally agree*). *Team support* was measured with four items. An example item is "The colleagues in my team support each other." Cronbach's alpha was .84 in the current study. For *shared values* four items were applied, e.g. "I identify with the values of the police department". Cronbach's alpha for this scale was .75. *Perceived fairness* was assessed by three items, e.g. "In my police department resources are allocated justly." Cronbach's alpha was .67 in our study.

Emotional exhaustion was assessed using an adapted version of the Maslach Burnout Inventory Human Services Survey (MBI-HSS; Maslach, Jackson, & Leiter, 1996) by Bosold et al. (2002). The four items were scored on a 7-point rating scale ranging from 1 (*never*) to 7 (*always*). A sample item is "I feel exhausted due to my work.", Here, Cronbach's alpha was .85.

Well-being was measured by the WHO-5 well-being index (Brähler, Mühlan, Albani, & Schmidt, 2007). The respondents were asked to rate their well-being within the last two weeks on a 6-point scale ranging from 1 (*never*) to 6 (*all the time*). A sample Item is "In the last two weeks I was glad and in good mood.". Cronbach's alpha for the well-being scale was .90 in this study.

Taken together all scales had a Cronbach's alpha of over .70 except for administrative stressors (.62) and perceived fairness (.67). However, since those scales were measured with three items only, their reliability coefficients can still be regarded as acceptable (Furr & Bacharach, 2008).

Data Analysis

To test our hypotheses we performed structural equation modeling (SEM) using Mplus version 7.4 (Muthen & Muthen, 2014). Due to the non-normality of the study variables and a sufficiently large sample size of $N \geq 400$ (Boomsma & Hoogland, 2001), robust maximum likelihood estimation (MLR) was used for all model estimations. The models' goodness-of-fit was assessed by chi square test statistic, Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), Tucker-Lewis Index (TLI), and Comparative Fit Index (CFI) as recommended by L. Hu and Bentler (1998). A non-significant chi square indicates good model fit. Since chi square is sensitive to sample size fit indices less sensitive to the number of observations were evaluated, too. A RMSEA value of less than .06 and a SRMR value of .08 or lower indicate good model fit (L. Hu & Bentler,

1999). For TLI and CFI values of .95 may be interpreted as an acceptable fit, while .97 is indicative of a good model fit (Schermelleh-Engel, Moosbrugger, & Müller, 2003).

Results

Means, standard deviations, and correlations of study variables are reported in Table .

Table 1

Means, Standard Deviations, Correlations, and Reliability Estimates (N = 843)

	Variable	Mean	*SD*	1	2	3	4	5	6	7	8
1.	Workload	3.21	0.61	(.73)							
2.	Verbal assaults by citizens	3.90	2.01	.23***	(.96)						
3.	Administrative stressors	2.97	0.67	.33***	.40***	(.62)					
4	Team support	3.67	0.83	-.12***	-.05	-.24***	(.84)				
5.	Shared values	3.04	0.82	-.20***	-.22***	-.39***	.33***	(.75)			
6.	Perceived fairness	2.28	0.75	-.22***	-.21***	-.38***	.34***	.50***	(.67)		
7.	Emotional exhaustion	2.71	1.51	.44***	.25***	.35***	-.25***	-.38***	-.29***	(.85)	
8.	Well-being	2.41	1.15	-.28***	-.12***	-.23***	.29***	.34***	.29***	-.60***	(.90)

Note. Reliability estimates appear within parentheses. *SD* = standard deviation. *** $p < .001$.

Hypotheses 1 to 3 were tested based on the model in Figure 2. The measurement models of the latent constructs were specified and tested prior to model testing. For job demands workload, verbal assaults by citizens and administrative stressors were used as latent indicators basing on the manifest variables represented in Table 2.

Table 2

Correlations of Study Items

	Indicator	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1.	workl01																												
2.	workl02	.48																											
3.	workl03	.58	.38																										
4.	asscit01	.18	.18	.17																									
5.	asscit02	.19	.18	.16	.88																								
6.	asscit03	.20	.17	.16	.86	.92																							
7.	admin01	.14	.20	.14	.28	.28	.30																						
8.	admin02	.24	.22	.25	.32	.33	.32	.34																					
9.	admin03	.18	.24	.16	.25	.26	.26	.37	.35																				
10.	team01	-.06	-.13	-.07	-.07	-.06	-.05	-.14	-.13	-.18																			
11.	team02	-.06	-.09	-.08	-.04	-.04	-.02	-.14	-.17	-.15	.65																		
12.	team03	-.09	-.11	-.13	.00	.01	.03	-.15	-.09	-.13	.53	.61																	
13.	team04	-.05	-.06	-.05	-.11	-.07	-.07	-.17	-.15	-.17	.57	.60	.49																
14.	value01	-.09	-.13	-.15	-.16	-.16	-.16	-.29	-.25	-.18	.19	.21	.18	.25															
15.	value02	-.05	-.08	-.15	-.14	-.16	-.17	-.24	-.15	-.12	.16	.14	.14	.14	.43														
16.	value03	-.16	-.17	-.19	-.23	-.24	-.23	-.26	-.28	-.19	.20	.23	.21	.23	.49	.43													
17.	value04	-.04	-.14	-.06	-.10	-.10	-.08	-.24	-.27	-.19	.26	.27	.26	.23	.42	.38	.40												
18.	fair01	-.22	-.15	-.27	-.16	-.18	-.18	-.31	-.29	-.22	.18	.16	.19	.19	.36	.25	.37	.32											
19.	fair02	-.10	-.07	-.12	-.13	-.13	-.12	-.22	-.17	-.12	.20	.16	.18	.26	.27	.16	.30	.28	.37										
20.	fair03	-.09	-.14	-.13	-.17	-.16	-.17	-.27	-.25	-.21	.26	.26	.26	.29	.33	.26	.38	.33	.41	.44									
21.	exh01	.37	.31	.34	.20	.22	.23	.25	.27	.21	-.15	-.19	-.17	-.15	-.28	-.21	-.33	-.21	-.22	-.14	-.23								
22.	exh02	.36	.32	.33	.16	.20	.20	.21	.24	.16	-.12	-.14	-.13	-.13	-.20	-.17	-.29	-.14	-.23	-.13	-.19	.72							
23.	exh03	.25	.27	.21	.11	.13	.13	.25	.21	.16	-.19	-.21	-.19	-.15	-.24	-.23	-.29	-.20	-.19	-.16	-.19	.62	.58						
24.	exh04	.25	.26	.26	.26	.26	.25	.23	.20	.20	-.18	-.22	-.21	-.24	-.29	-.16	-.30	-.22	-.24	-.16	-.17	.60	.52	.49					
25.	wellb01	-.18	-.12	-.17	-.04	-.04	-.06	-.16	-.12	-.13	.21	.27	.26	.24	.23	.23	.27	.20	.17	.17	.26	-.42	-.35	-.39	-.40				
26.	wellb02	-.28	-.19	-.23	-.12	-.15	-.15	-.21	-.18	-.16	.20	.26	.25	.22	.20	.19	.29	.17	.21	.20	.23	-.50	-.46	-.46	-.42	.65			
27.	wellb03	-.21	-.20	-.20	-.07	-.10	-.10	-.17	-.13	-.12	.18	.23	.23	.20	.24	.22	.28	.16	.18	.15	.22	-.45	-.42	-.47	-.40	.71	.71		
28.	wellb04	-.24	-.21	-.20	-.05	-.12	-.11	-.18	-.16	-.14	.15	.16	.20	.11	.17	.19	.27	.16	.21	.16	.23	-.45	-.42	-.54	-.35	.55	.68	.68	
29.	wellb05	-.19	-.17	-.13	-.09	-.11	-.13	-.17	-.09	-.10	.16	.21	.19	.17	.21	.26	.24	.18	.12	.12	.23	-.36	-.34	-.37	-.31	.61	.56	.66	.54

Note. Corresponding latent factors: workl = workload; asscit = assaults by citizens; admin = administrative stressors; team = team support; value = shared values; fair = perceived fairness; exh = emotional exhaustion; wellb = well-being.

The measurement model for job demands showed excellent fit, $\chi^2(24) = 41.434$, $p < .05$; RMSEA = .03; SRMR = .03; TLI = .99; CFI = 1.00. Team support, shared values and perceived fairness served as indicators for job resources, based on manifest variables, too (Table), showing a very good fit of the measurement model as well, $\chi^2(41) = 73.400$, $p < .01$; RMSEA = .03; SRMR = .03; TLI = .98; CFI = .99. The measurement model specifying well-being and emotional exhaustion demonstrated an acceptable fit, $\chi^2(26) = 147.067$, $p < .001$; RMSEA = .07; SRMR = .04; TLI = .95; CFI = .96. The overall measurement model showed a very good fit to the data, $\chi^2(365) = 833.627$, $p < .001$; RMSEA = .04; SRMR = .05; TLI = .96; CFI = .95. All items loaded solidly on their respective factors ($.56 \leq \beta \leq .97$, $p < .001$).

Next, the structural model with direct effects of job demands on emotional exhaustion and job resources on well-being presented in Figure 2 was tested (this will be referred to as the baseline model since the direct path from job resources to emotional exhaustion was not considered, yet). The model showed good fit to the data, $\chi^2(367) = 839.005$, $p < .001$; RMSEA = .04; SRMR = .05; TLI = .95; CFI = .96. According to hypothesis 1 job demands strongly predicted emotional exhaustion ($\beta = .64$, $p < .001$) with administrative stressors yielding the highest predictive value ($\beta = .87$, $p < .001$) for job demands. In line with hypothesis 2 job resources were positively related to well-being ($\beta = .49$, $p < .001$) whereby shared values ($\beta = .84$, $p < .001$) and perceived fairness ($\beta = .85$, $p < .001$) served as strong predictors for the latent construct of job resources. Thus, hypotheses 1 and 2 were supported. Finally, hypothesis 3 stated that job resources would have a direct negative relation with emotional exhaustion. Accordingly, the direct path of job resources on emotional exhaustion was included in the model, proving a single distinct effect for job resources on emotional exhaustion ($\beta = -.20$, $p < .05$) and showing good fit indices for that model, $\chi^2(366) = 834.220$, $p < .001$; RMSEA = .04; SRMR = .05; TLI = .95; CFI = .96. We applied Chi Square difference testing to determine whether the model including the direct path from job resources to emotional exhaustion fitted the data better than the baseline model not including that path.

Since the MLR estimator was used, the chi square difference test for the nested model was conducted by taking the scaling correction factors into account for both models. The result showed a significant change in the model fit in support of the more elaborated model including the additional path from job resources to emotional exhaustion, $\Delta\chi^2 = 4.45$, $\Delta df = 1$, $p < .05$. The final model is depicted in Figure 3.

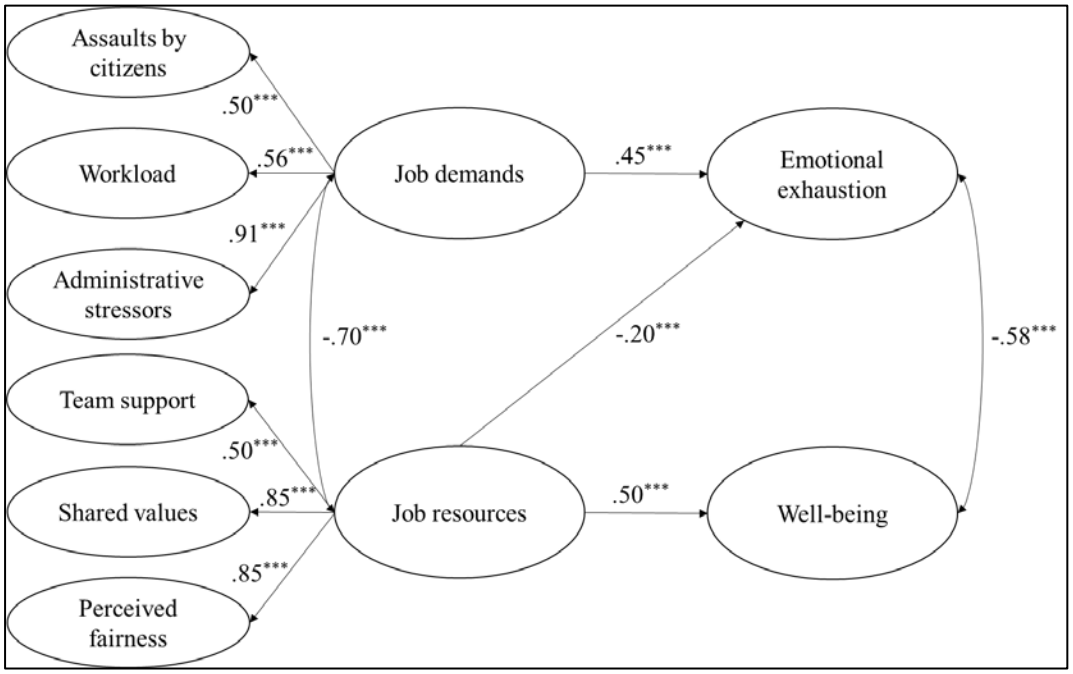

Figure 3. Final model. *** p < .001.

Discussion

The aim of this paper was to investigate the relationship between police officers' well-being and emotional exhaustion and their job demands and job resources. Taking a resource-oriented perspective we focused on the specific role of job resources, precisely team support, shared values and perceived fairness, and their predictive value concerning general well-being. Additionally, by also taking into account the health impairing process, we intended to test the dual process model inherent in the JD-R framework as a whole including job resources' direct effect on emotional exhaustion.

In line with hypothesis 1, police officers' job demands were positively associated with emotional exhaustion, thereby confirming the JD-R's health impairment process and previous research in police contexts, indicating that job demands are related to emotional exhaustion (Hall, Dollard, Tuckey, Winefield, & Thompson, 2010; Q. Hu et al., 2016; Martinussen et al., 2007; Van den Broeck et al., 2010). Furthermore, administrative stressors (e.g. lack of information or working materials) were the strongest indicators for job demands. This result is in line with previous findings stating that organizational stressors are most important in police (Collins & Gibbs, 2003; Juniper et al., 2010; Shane, 2010; Stinchcomb, 2004). Still, workload and verbal assaults by citizens constituted job demands as well, the latter representing an operational stressor, which is congruent with previous research (e.g., Collins & Gibbs, 2003; Van der Velden et al., 2010).

As expected in hypothesis 2, job resources predicted general well-being indicating a clear mental health promoting impact, with perceived fairness and shared values having the strongest effect. This confirms the beneficial role of team support found in earlier studies on police work (Hansson et al., 2017; Q. Hu et al., 2016; Van den Broeck et al., 2010). Regarding perceived fairness, positive associations with officer well-being have also been described recently by Trinkner et al. (2016), referring to underlying mechanisms of a procedurally fair organizational climate. The authors argue, that a fair climate promotes officers' well-being indirectly via less maladaptive behavior and its associations with perceptions of organizational legitimacy of their authority. Further understanding these mechanisms should be the subject of future research. To date, shared values (e.g. "I identify with the values of the police department.") have not been studied as a health-promoting resource in police work, yet. Our results strongly indicate that this is a meaningful and important aspect affecting police officers' well-being. An explanatory approach could be that individuals tend to adopt an organization's values and goals as their own when identifying strongly with that organization (Barbier, Dardenne, & Hansez, 2013) and so do police officers

with respect to their police department's values and goals. This identification subsequently leads to increased motivation to achieve these goals and higher self-esteem (Edwards & Peccei, 2007), thus work-related well-being. Accordingly, organizational identification and shared values are important job resources predicting not only well-being at work (Barbier et al., 2013) but also levels of general well-being in the group of police officers.

In line with hypothesis 3, job resources were directly negatively related to emotional exhaustion. Resources protected police officers' well-being. This direct effect of job resources on emotional exhaustion has been observed before in police contexts (Q. Hu et al., 2016; Martinussen et al., 2007; Van den Broeck et al., 2010). The results of the present study emphasize that job resources other than those previously tested – e.g. social support, job control or autonomy – are capable of guarding police officers against emotional exhaustion. The findings concerning team support are in line with earlier studies (e.g. Q. Hu et al., 2016; Martinussen et al., 2007) showing that social resources help in coping with job demands and thereby reduce emotional exhaustion (McCreary & Thompson, 2006). The protective impact of shared values and perceived fairness had not previously been tested. Underlying mechanisms may be similar to those described above with regard to well-being. As argued by Trinkner et al. (2016), a fair climate promotes officers' well-being – it might similarly contribute to reduced emotional exhaustion. With regard to shared values Barbier et al. (2013) discussed the identification with an organization as related to well-being. Shared values may thus be capable to mitigate emotional exhaustion as well. Further research is needed to study the value of those job resources as well as other resources in the police context. Also, job resources have been observed to buffer job demands-induced emotional exhaustion or burnout in previous studies on police officers (Hansson et al., 2017) as well as other populations (Bakker, Demerouti, & Euwema, 2005; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). This adds weight to the JD-R assumption that job demands and job resources may also interact in the prediction of (occupational) well-being (Bakker & Demerouti, 2014). As such,

job resources are able to buffer the impact of job demands on negative health outcomes making it easier for employees to deal with job demands like work pressure or emotional demands (Bakker & Demerouti, 2014). Obviously, job resources work differently depending on whether they moderate or directly affect emotional exhaustion or burnout, and depending on the job demands looked at. The distinct roles of job resources should be addressed in future research as well. Still, the direct relation of job resources and emotional exhaustion is also in line with theoretical assumptions of the JD-R framework (Schaufeli & Taris, 2014).

Since we substituted work engagement, understood as work related well-being and originally part of the JD-R framework (Schaufeli & Taris, 2014), with general well-being in terms of a direct health outcome in this study, our model should be tested again with measures of work engagement. Nevertheless, the present study underpins the dual process model in which the health impairment and motivational or health promoting process are seen as two distinct and independent processes. Job resources are thus capable to reduce emotional exhaustion and promote well-being simultaneously, placing an invaluable potential upon them.

Limitations

There are some study limitations that should be noted. First, the use of cross-sectional data does not allow causal inferences concerning the direction of relations between job characteristics and measures of well-being and emotional exhaustion. Longitudinal research designs are necessary to demonstrate causal relationships between job demands, job resources and well-being outcomes in police work. Although cross-sectional in nature, our study has contributed to the understanding of job demands, job resources, well-being and emotional exhaustion in police officers, since not many studies in the context of police work have applied the JD-R framework, yet. On a related note, cross-sectional research designs tend to overestimate interrelationships between study variables, a limitation that should be considered as well. Nevertheless, the JD-R framework has been proven empirically and in longitudinal

study designs, thus it is well-established. That is why we are confident to assume that the structural model is likely to be valid. Additionally, the current data rely solely on self-report measures increasing the problem of common method variance and overestimation of observed effects. Although, we obtained an adequate response rate (50.7%) in the online survey it is conceivable that our results may be biased by nonparticipation. If those police officers who did not respond were too stressed or dissatisfied in general that they could not be bothered taking part in the health monitoring survey, the refusal of participation was not randomly distributed. Studies addressing response rate biases revealed responders being slightly healthier compared to non-responders in large, population based health surveys. However, these studies also showed that the differences' impact on prevalence rates is rather small eventuating in results being relatively unbiased even in studies with only moderate response rates (Søgaard, Selmer, Bjertness, & Thelle, 2004; Vink et al., 2004).

Furthermore, the reliability coefficients of two scales, administrative stressors (.62) and perceived fairness (.67) should be re-examined. However, as mentioned above the scales consisted of three items only. This is why these reliability coefficients can still be seen as acceptable (Furr & Bacharach, 2008). Lastly, though feeling confident that we selected those job demands and job resources that are of central importance in the context of police work, there may be further job demands and job resources that are relevant in police contexts though not taken into consideration in the present study. This comes at the cost of limited generalizability of the study's findings to the whole field of police work. Since the JD-R framework is characterized by its flexibility in operationalizing all kinds of job demands and job resources specific to a certain job environment, this is nonetheless considered a strength of the applied theoretical framework within our study.

Conclusion

This study has emphasized the distinct role of job resources concerning their impact in reducing emotional exhaustion and promoting well-being at the same time. That is why it

seems more than ever advisable to take a resource-oriented perspective and, besides reducing job demands, focus on the promotion of job resources wherever possible. Thus, workplace interventions in police contexts should focus on both reducing job demands (e.g. recruitment of more staff, improved work organization) and promoting job resources in order to support police officers well-being. In the context of police work especially a fair and supportive organizational climate based on shared values could contribute to the promotion of health and well-being while reducing emotional exhaustion at the same time. Relevant aspects concerning organizational fairness are for example managerial transparency in general and with regard to promotions in particular or fair allocation of resources. Police officers' identification with shared values on one and team support on the other hand could be achieved by means of team building activities fostering trust and mutual understanding. This would also serve to challenge decision makers at the managerial level with regard to treating their employees fairly and keeping together their team. Officers in leadership positions should thus be supported as well through supervision or leadership workshops in order to raise awareness for their own leadership role.

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Study 2

Social Support and Work Engagement in Police Work: The Mediating Role of Work-Privacy Conflict and Self-Efficacy

Chapter 3

Wolter, C., Santa Maria, A., Gusy, B., Lesener, T., Kleiber, D., & Renneberg, B. (2019). Social support and work engagement in police work: The mediating role of work-privacy conflict and self-efficacy. *Policing:An International Journal, 42*(6), 1022-1037. https://doi.org/10.1108/PIJPSM-10-2018-0154

Study 3

Relationships between Effort-Reward Imbalance and Work Engagement in Police Officers: Taking a Salutogenic Perspective

Chapter 4

Wolter, C., Santa Maria, A., Georg, S., Lesener, T., Gusy, B., Kleiber, D., & Renneberg, B. (2019). Relationships between effort-reward imbalance and work engagement in police officers: Taking a salutogenic perspective. *Journal of Public Health.* https://doi.org/10.1007/s10389-019-01112-1

General Discussion

Chapter 5

General Discussion

Summary of Findings

The aim of study 1 was to investigate the role of job resources among police offers within the JD-R model where general well-being was considered as a direct health outcome in the motivational process. Besides job resources, job demands and their relationship with emotional exhaustion were also considered, thereby testing the dual process inherent to the JD-R model.

In study 1 and in line with the health impairment process of the JD-R model, job demands in the form of workload, administrative stressors and verbal assaults by citizen predicted emotional exhaustion. This is confirmed by previous research on police work (e.g., Q. Hu, Wang, & You, 2016) as well as the finding that organizational stressors specified by administrative stressors were the strongest indicator for job demands (Shane, 2010). Team support, shared values and perceived fairness are job resources that were positively related to general well-being as operationalized by the WHO-5 well-being index. Moreover, job resources were negatively related to emotional exhaustion and can thus prevent exhaustion among police officers. The motivational process of the JD-R model with work engagement as the relevant outcome has been confirmed by meta-analytical research across different occupations (Lesener, Gusy, & Wolter, 2018) as well as in the context of police work (Q. Hu et al., 2016; Van den Broeck, De Cuyper, De Witte, & Vansteenkiste, 2010). In the present study, it is not work engagement that indicates context-specific work-related well-being but context-free general well-being that was examined within the motivational process of the JD-R model. However, the relationship between job resources and general well-being was substantial and even higher compared with previous studies that studied work engagement in policing (cf. Q. Hu et al., 2016; Van den Broeck et al., 2010). This finding indicates that general well-being, which is considered a direct positive health outcome in this study, can also be studied within the JD-R model. After all, general well-being and work-related well-

being have been found to affect each other (Warr, 1999). Thus, when examining the general well-being of police officers in relation to their job resources valuable lessons can be learnt about the health-promoting potential of specific job resources.

In Study 2, work engagement was included in the analysis and studied in relation to social support, an important job resource in police work, within the motivational process of the JD-R model. Moreover, this study was aimed at investigating the mediating role of self-efficacy as a personal resource and work-privacy conflict as a specific job demand in that process.

Study 2 supports previous research which has shown that social support by supervisors and co-workers is positively related to work engagement in the context of police work (e.g., Biggs, Brough, & Barbour, 2014; Van Gelderen & Bik, 2016) as well as other groups (e.g., Halbesleben, 2010). This result confirms hence the motivational process of the JD-R model in the case of police officers and is in line with COR theory according to which job resources are a central driver of motivation and the most important driver of work engagement (Bakker & Demerouti, 2008; Hobfoll, 2002). The motivational role of social support in the workplace also refers to SDT as social job resources address basic psychological needs for relatedness and belonging and therefore promote work-related well-being (Deci & Ryan, 1985; Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008). Self-efficacy partially mediated the relationship between social support and work engagement in study 2. This is equally in line with COR where people try to accumulate the resources that they have obtained (Hobfoll, 1989). This is why job resources and personal resources are mutually related in the prediction of work engagement (Bakker & Demerouti, 2008; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). As a consequence, the self-efficacy of police officers is enhanced in a working environment characterized by the support of supervisors as well as co-workers, a finding that has been reported for other groups already (Caesens & Stinglhamber, 2014; Xanthopoulou et al., 2007, 2009). Furthermore, in study 2, social support was shown to

reduce work-privacy conflict which is a major job demand in policing. This relation has been described before with regard to other groups (e.g., Baeriswyl, Krause, & Schwaninger, 2016; Michel, Kotrba, Mitchelson, Clark, & Baltes, 2011) while there has been little research in the police context. Moreover, work-privacy conflict partially mediated the association between social support and work engagement. This study thus showed that work-privacy conflict might reduce work engagement while social support can help to avoid work-privacy conflict in the first place. Overall, study 2 confirmed the expected relationships between job and personal resources as well as work engagement within the motivational process of the JD-R model extended by job demands.

Study 3 was aimed at investigating work engagement among police officers and the role of reward as a specific job resource within the ERI model. The predictive value of the ERI ratio for work engagement as well as its subscales (vigor, dedication and absorption) was examined in a first step. Associations between work engagement and the individual components of the ERI model (effort, reward and overcommitment) were then explored in separate analyses.

In study 3, the ERI ratio referring to an imbalance towards effort was negatively related to global work engagement as well as each subscale of work engagement. This indicates that an imbalance between high effort and low reward and thus failed reciprocity of costs and gains is associated with lower work engagement and hence lower work-related well-being. This is in line with findings of previous studies among other professions (Feldt et al., 2013; Kinnunen, Feldt, & Mäkikangas, 2008). For the group of police officers, only opposite, i.e. positive associations, have been reported with regard to burnout to date (S. Hu, Wang, Liu, Wu, & Yang, 2015; Violanti et al., 2018), thereby confirming the health-impairing impact of ERI in the workplace. Study 3 showed no relationship between effort (in the shape of time pressure, interruptions and workload) and work engagement. This finding on the ERI variable corresponds to JD-R theory where hindrance job demands – and effort would in this

context be classified as such a demand – are not or only weakly related to work engagement (Schaufeli & Taris, 2014). However, another analysis of the same sample of police officers revealed a positive relationship between effort and burnout (Georg, Wolter, Santa Maria, Kleiber, & Renneberg, 2019a) showing that effort affected the mental health of police officers when taking a different perspective on ill health in line with the health impairment process. For the three reward systems, different results emerged in the prediction of work engagement. While the esteem and security rewards were related positively to work engagement, no effect could be observed with regard to status reward. Thus, in the context of the ERI model, the reward systems differ with regard to their role as job resources that foster work engagement. Lastly, overcommitment was related negatively to vigor, the energetic component of work engagement that reflects high activation (Schaufeli, Salanova, González-Romá, & Bakker, 2002), only. This result indicates that police officers who show excessive work commitment as well as a high need for approval are at risk of reduced well-being in the workplace. Overall, little research has been carried out so far on ERI in the context of police work. This is why this study enhances our understanding of the respective relationships in particular with regard to the relevant reward systems in policing. Furthermore, studying work engagement, a salutogenic outcome and indicator of work-related well-being, broadens research on the ERI model in a perspective that has rarely been taken to date.

Resources in Police Work and Practical Implications

The studies that were carried out within the framework of this thesis demonstrate the significance of job resources for general as well as work-related well-being in the context of police work and provide important indications for the research question posed at the beginning of this thesis about the role of job resources for health and well-being of police officers. Even though job demands affect well-being as seen in studies 1 and 2, the role of job resources seems to be of a higher relevance with regard to health-promoting interventions. While job demands operationalized by workload, administrative stressors and verbal assaults

by citizens predicted emotional exhaustion in study 1, job resources did not only positively relate to general well-being but also mitigated emotional exhaustion. In study 2, similar but slightly different associations with regard to work engagement occurred for work-privacy conflict, another job demand in policing. Social support as a job resource extenuated work-privacy conflict that was otherwise negatively related to work-related well-being. Thus, in studies 1 and 2, job resources were shown (to be able) to reduce job demands or associated costs as defined by Demerouti, Bakker, Nachreiner, and Schaufeli (2001). Most job demands in the context of police work such as shift work and associated work-privacy conflict, confrontations with civilians that are ready to use violence or administrative stressors can hardly be changed. Reasonable staffing is certainly highly important in order to evenly distribute the workload and challenges of policing on a sufficient number of police officers while it is not easy to achieve (Pavel & Dilla, 2019). However, the potential of job resources to mitigate these job demands and associated unwell-being can be utilized in health-promoting interventions. Moreover, job resources also predicted general or work-related well-being in all three studies. Hence, job resources also fulfilled their purported function with regard to the motivational process, i.e. to promote well-being and associated positive outcomes (Bakker & Demerouti, 2008). Consequently and as defined by Demerouti et al. (2001), job resources are also functional in achieving work goals and stimulate personal growth and development in policing although the studies within the framework of this thesis did not test for the respective outcomes. However, workplace interventions in policing should build on the potential of job resources for a more beneficial working environment. Since evaluated interventions with regard to job resources in policing as well as other working environments are rare suggestions are given below as to where health promotion programmes should be launched.

Social support. For example, social support was an influential job resource in studies 1 and 2. In study 1, workplace support was assessed in the form of team support. Accordingly,

police officers stated that they could count on each other, that there was an open atmosphere within their team and that colleagues supported each other and shared work tasks. In study 2, social support referred to the level of support police officers felt they were given by supervisors and co-workers with regard to personal problems, emotionally demanding work incidents, needs for self-confidence boosts or the need to simply talk to someone. According to Mathieu, Eschleman, and Cheng (2019) these manifestations of social support in the workplace primarily relate to emotional support. However, emotional support, for example listening to work concerns or providing word of encouragement, and instrumental support such as task instruction or task assistance are closely mutually related, especially in jobs that place high emotional demands (Mathieu et al., 2019) such as police work. For example, in the case of work-privacy conflict, supervisors and co-workers can provide emotional support by simply listening to a person's problems or they can say comforting and encouraging words. However, social support can be equally instrumental when supervisors consider private duties in shift scheduling or co-workers take shifts from colleagues if necessary. In all these examples, the individual person feels understood and well at work. Two other studies on the same sample of police officers showed that a leadership climate that reflects the consideration of the supervisor(s) for the individual employee as well as supportive behaviour prevented emotional exhaustion and associated mental ill health (Engel et al., 2018; Santa Maria, Wörfel et al., 2018). Furthermore, health-oriented leadership where the supervisor fosters health-promoting working conditions and social support promotes the health and well-being of police officers, too, as described by Santa Maria, Wolter, Gusy, Kleiber, and Renneberg (2018). It is thus important to hold mandatory leadership development programmes to raise the awareness of supervisors in police work for the role of social support as part of their work. Such programmes need to be promoted by police departments and political decision-makers alike. However, Mathieu et al. (2019) point out "that supervisors (or any provider of support in the workplace) should tailor their supportive behaviors to fit their skills and personality

rather than attempting to provide a type of support that they are uncomfortable with" (p. 403). Accordingly, supervisors with limited affinity or temporal capacity to provide emotional support could also comfort police officers emotionally via instrumental support, or vice versa, with the underlying assumption that instrumental and emotional support are closely interrelated (Mathieu et al., 2019). Moreover, team-building interventions or team coaching can promote support among colleagues, both emotionally and with regard to instrumental support. Emotional exhaustion could thus be prevented and well-being could be promoted if colleagues and co-workers cared and looked out for one another. In study 2, workplace support also predicted self-efficacy as a personal resource. Here too, instrumental as well as emotional support can boost the confidence of police officers in their own capacities and capabilities. Taken together, social support in the workplace is a fundamental resource in police work that promotes general and work-related well-being while mitigating exhaustion and thus needs to be considered in health-promoting interventions.

Reward. Reward turned out to be another central job resource in police work. In study 3, esteem reward and security reward proved to be key motivators with regard to work engagement. Security reward refers to an optimistic anticipation of the prospect that work conditions are not going to deteriorate (Siegrist, Wege, Pühlhofer, & Wahrendorf, 2009). Another analysis showed that a lower security reward is associated with work-related exhaustion (Georg et al., 2019a). Working conditions in police work are already very demanding and stressful as outlined above. Accordingly, policy interventions are well-advised to maintain at least the status quo if not to take action to improve working conditions, whether with regard to adequate staffing, equipment or pay. Esteem reward refers to the perception of police officers as to whether they are given the deserved respect for their efforts and achievements in the workplace, either from a superior or equally relevant person or at work in general. Perceived fairness, which was an influential job resource in study 1, plays a role in the context of this approach, too. To use esteem rewards to promote work engagement among

police officers supervisors need to apply a leadership style that is centred on and appreciates employees (Goetz & Reinhardt, 2016) and that should also be part of leadership development programmes. Thus, supervisors may express their esteem through an unconditional, trusting and respectful attitude towards their employees (Goetz & Reinhardt, 2016) as well as participation in decision-making and positive feedback (Violanti et al., 2018). At the level of the organization, the police department as a whole should provide backing and support if necessary and where appropriate, for example if police officers are confronted with criticism. With regard to fairness, processes within the organization such as promotions and the allocation of resources need to be communicated transparently in order to acknowledge the work of all employees. Appreciation can also expressed by ensuring an appropriate working environment including adequate equipment or common rooms. In two additional analysis of the sample, esteem reward was also associated with lower work-related exhaustion (Georg et al., 2019a) as well as fewer symptoms of depression and anxiety (Georg, Wolter, Santa Maria, Kleiber, & Renneberg, 2019b). This finding supports the health-promoting potential of the respective reward systems. All in all, reward in the shape of esteem plays a significant role for the work-related well-being of police officers and should thus be taken into account more strongly when it comes to developing workplace interventions.

The Role of Job Resources in Two Work Stress Models – Critical Comments

Based on the intention to investigate job resources in police work, this thesis builds on two work stress models, the JD-R model and the ERI model. While both models have their benefits some shortcomings with regard to the conceptualization of job resources should be noted as well.

The JD-R model, on the one hand, is a flexible and heuristic model rather than a specific model that includes a clear-cut set of distinct demands and resources – like the ERI model – as well as outcomes (Schaufeli & Taris, 2014). The benefit that the JD-R framework can be used to model all kinds of demands, resources and outcomes comes at the cost of

limited specificity and can, for example, result in uncertainty whether a given job characteristic represents a demand or a resource (Bakker & Demerouti, 2017). According to Bakker and Demerouti (2017), this distinction can depend on the work context which, in turn, limits the possibility of generalizing the model, too. However, by definition of the model, job resources stimulate motivation and promote work engagement which can result in positive outcomes such as well-being and high performance (Schaufeli & Taris, 2014). Furthermore, job resources also mitigate the detrimental effects of job demands (Bakker & Demerouti, 2017). Job demands, in contrast, are energy-consuming and can lead to exhaustion and associated negative outcomes including health problems or high employee turnover (Bakker & Demerouti, 2017; Schaufeli & Taris, 2014). Thus, "the absence of a job resource (…) does not represent a demand" (Bakker & Demerouti, 2017, p. 278). Bakker and Demerouti (2017) also state that "it is essential to have a clear idea on what the function/role of each job characteristic is when applying the JD-R model" (p. 278). In this context, the value of the respective job characteristic plays a crucial role. As outlined above, job resources are defined as the positively valued aspects of a job which is also in line with the definition of resources in COR theory (Schaufeli & Taris, 2014). What is more, the motivational process describing the link between job resources and positive outcomes and thus a salutogenic perspective – alongside the pathogenic perspective – makes the JD-R model superior to other work stress models. The model assumes within the motivational process that with the increase of job resources well-being is improved, too.

On the other hand, research building on the ERI model has so far largely neglected salutogenic outcomes. This might be due to the one-sidedness of the ERI model as it focuses on job stress or – in the words of the JD-R model – the health impairment process only (Bakker & Demerouti, 2014). Taking a salutogenic perspective and studying positive health or well-being outcomes seems to be of minor relevance in ERI research. Furthermore, Siegrist (1996) and related literature in the tradition of the ERI model do not evaluate effort-reward

balance or even effort-reward imbalance towards reward and associated outcomes concerning health and well-being. Since the ERI model is a model of homoeostatis, the balance between effort and reward is assumed the ideality for employee health. Whether health is actually improved by means of increased reward, which would result in an imbalance toward reward, is not considered in the model.

Moreover, the conceptualization of job resources within the ERI model is rather specific and limited to reward only. More precisely, esteem reward, status reward and security reward are considered the most important and only job resources that are able to counterbalance job stress due to high effort (Siegrist et al., 2004; Siegrist, 2008). Other job resources that might be equally relevant in certain or global working environments are not taken into account which indicates the static and possibly too simplistic character of the ERI model (Bakker & Demerouti, 2014). Furthermore, since the model, by definition, only focuses on the imbalance towards effort and subsequent ill health outcomes reward always falls short behind effort. Reward is thus understood rather as a missing job resource that cannot compensate for high effort or job demands.

Briefly, the JD-R model and the ERI model differ with regard to their conceptualization of job resources; both have their benefits and shortcomings. The decision on what framework to apply when studying job resources seems to depend on the research context. While the JD-R model is more flexible, it can only be generalized to a limited degree. The ERI model is less open but more specific which allows for comparisons across different work contexts and related benchmarks.

Limitations and Future Research

Theoretical considerations. The application of the two models in the respective studies can be seen as rather unconventional and not necessarily in accordance with the theoretical assumptions on which the models are based.

In study 1, the JD-R model was applied including the health impairment process that describes the negative associations between job demands and burnout or exhaustion, respectively (Demerouti et al., 2001; Schaufeli, 2017). Within the motivational process, the relationship between job resources and general well-being instead of work engagement was examined. Although this is not in line with the theoretical assumptions of the JD-R model, where general well-being in terms of health would rather be considered as an outcome in the motivational process predicted by work engagement, the flexibility of the JD-R model allows various outcomes to be studied. Moreover, general well-being globally covers the construct of well-being. Studies building on the JD-R model apply the theoretical structure of the model quite differently; many different representations are described but the relationships between the constructs are comparable. Although the association between job resources and general well-being was substantial and given the assumption that context-free, or general, well-being and context-specific, or work-related, well-being in this case affect each other (Warr, 1999), study 1 should be repeated with the incorporation of work engagement within the motivational process in future studies. For example, the relationship between job resources and work engagement and possibly general well-being as the subsequent outcome could be examined for the sample of police officers within the JD-R model. However, since this thesis was aimed at investigating the relationship between job resources and well-being in police officers and assumed rather unconventional perspectives implications can nevertheless be drawn as seen above.

Study 2 focused on the examination of the motivational process including job resources, personal resources and work engagement. However, one job demand, namely work-privacy conflict in police work, was also assessed within that process. According to Schaufeli and Taris (2014), job demands play only a minor role in the motivational process and are usually not related to work engagement. However, the authors add that relationships between job demands and work engagement could occur. For example, Crawford, LePine,

and Rich (2010) and Q. Hu, Schaufeli, and Taris (2011) reported negative associations between hindrance job demands (e.g., work-privacy conflict) that, on the one hand, interfere with goal achievement and work engagement. On the other hand, job demands can also play a motivational role when valued as challenges that foster personal growth and achievement (Bakker & Demerouti, 2017). This thesis (studies 1 and 2) assessed only hindrance job demands in police work. Future studies in the context of police work could thus consider the differentiation between hindrance and challenging job demands in policing. For example, challenging operations may be perceived as rewarding (Garbarino et al., 2011) and thus positively valued, consequently predicting work engagement (Schaufeli & Taris, 2014). Furthermore, Schaufeli and Taris (2014) emphasize that in order to understand the motivational process the health impairment process should be taken into account, too, and vice versa. This was not done in study 2. However, the two processes are also assumed to be independent from one another and several studies have focused on one of the two processes exclusively (Schaufeli & Taris, 2014). Nonetheless, future research on the application of the JD-R model in the context of police work should assess all components of the JD-R model within the health impairment process and the motivational process in order to draw a holistic picture of job demands, job resources and associated outcomes for police officers. Taken together, thanks to the flexibility of the JD-R model – a boone and a bane at the same time – different approaches can be justified when applying the model to study relationships between job characteristics and outcomes of well-being.

The ERI model that was applied in study 3, on the other hand, provides no flexibility with regard to the determinants of employee health since effort and reward are the only job characteristics considered by the model. Furthermore, positive outcomes like well-being are not usually explored in ERI research since the model – by definition – focuses only on the imbalance between effort and reward towards effort, thus assuming a pathogenic perspective. This thesis, however, took a different approach and explored work engagement in relation to

ERI as well as its single components, thereby taking a salutogenic perspective. A salutogenic approach is not common in ERI research although work-related well-being has been studied before within the model (e.g., Kinnunen et al., 2008; Wang, Liu, Zou, Hao, & Wu, 2017). Future research could draw on this different approach and explore how the balanced or even opposite ratio of effort and reward, in terms of effort-reward balance or effort-reward imbalance towards reward, relate to outcomes of health and well-being. The ERI model does not provide any assumptions with regard to the impact of a balanced ratio between effort and reward or a ratio where effort is outbalanced by reward for the benefit of employee health. Police officers provide an interesting sample to examine these differential effects (cf. e.g., Garbarino et al., 2011).

Another aim of this thesis was to examine the role of job resources in the applied work stress models. Within the JD-R model, the definition and implementation of job resources is stated quite clearly as outlined above and diverse job resources can be modeled. In contrast, in the ERI model, the three reward systems are the only "job resources" that are considered while this term is not even applied by Siegrist (1996) to describe these job characteristics. Nonetheless, this thesis considered reward as a job resource as done by other authors before (e.g., Bakker & Demerouti, 2014; Loh, Idris, Dollard, & Isahak, 2018). However, within the ERI model, reward is conceptualized rather as a missing resource. This thesis took a different approach since reward was explored in relation to work engagement, a salutogenic outcome. To further strengthen this perspective, the reward structures could be studied within the JD-R model, thus combining the benefits of both models. The flexibility of the JD-R model allows very different kinds of job resources to be modeled within the motivational process. Hence, the unique reward scales of the ERI model could be implemented, too, examining not only their relationship with work engagement and subsequent positive outcomes but also associations with exhaustion or burnout, as defined within the JD-R model. Innovative

insights about the role of rewards in policing could thus be obtained, a job resource that has turned out to play a very important role in police work.

Methodological considerations. A main limitation of this thesis is the fact that all reported results from studies 1, 2 and 3 are based on cross-sectional data. This does not allow for drawing causal inferences with regard to the directionality of associations between the respective variables. Longitudinal research designs are necessary to assess the direction of associations between the variables of interest. Although both the JD-R model and the ERI model have been studied longitudinally (cf. e.g., Bakker & Demerouti, 2017; Feldt et al., 2013) confirming the assumed relations of this thesis for the JD-R model reciprocal relationships have also been reported for the dual processes (Bakker & Demerouti, 2017). Hence, future studies in the context of police work should realize at least two measurement points regardless of the applied model in order to validate the results of this thesis.

Furthermore, the data used in the studies carried out within the framework of this thesis are based on self-reports only. This increases the risk of common method bias with regard to the magnitude of the observed effects which may have been overestimated. The consideration of objective measures in future studies could rule out related problems. However, work characteristics are not easily assessed objectively, well-being measures are most likely subjective anyway.

Finally, the studies carried out within the framework of this thesis cover only a selected set of job resources and demands for police officers. Although these job characteristics proved as centrally important in that specific work context, other resources and demands might be equally relevant. The generalizability of the study findings is thus limited to the respective constructs as well as to the sample of police officers that was studied. It is therefore not possible to draw conclusions for other samples, police work in general or other occupations in general.

Conclusion

This thesis addressed occupational health from a salutogenic perspective and focused on resources for positive health in the context of police work. Three empirical studies were conducted in order to examine the overarching research question with regard to the contribution of resources in police work towards positive health outcomes in the group of police officers. General or work-related well-being were defined as positive health aspects in the respective studies; the job resources that were analyzed differed. In the first study, team support, shared values and perceived fairness predicted the general well-being of police officers and mitigated exhaustion. The second study focused on social support by co-workers and supervisors and showed that this support predicts work engagement. In the third study, reward in the form of esteem reward and security reward predicted work engagement. Overall, workplace support, values and fairness as well as esteem and security rewards are important job resources for positive health in policing. Greater attention should thus be paid to the health promoting potential of job resources in police practice and research.

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Summary

While research on occupational health has traditionally taken a pathogenic approach focusing on risk factors and diseases the salutogenic approach focusing on resources for positive health has recently become more popular. The job-demands resources (JD-R) model is a widely applied framework in occupational health research that integrates job resources as a central determinant of employees' health. Within the JD-R model, job resources are defined as those aspects of the job that facilitate goal achievement, reduce job demands and associated health risk or promote personal growth and development. Accordingly, job resources predict work engagement that is an indicator of work-related well-being within the motivational process of the JD-R model.

Another well-established model in occupational health research is the effort-reward imbalance (ERI) model that explains the well-being of employees based on the reciprocity of effort (costs) and reward (gain) in the workplace. An imbalance due to high effort and low reward is considered to induce stress that, in turn, is detrimental for employees' health. Most studies that apply the ERI model have supported the pathogenic perspective that the model posits.

A particularly burdened occupational group due to high job demands and effort are police officers. A large body of research has analyzed risk factors in policing and related ill health while fewer studies have taken a salutogenic approach exploring job resources and positive well-being outcomes.

The aim of this thesis was thus to take a salutogenic perspective on occupational health research in police work and explore job resources as well as their health-promoting relationship with the well-being of police officers. Applying the JD-R model as well as the ERI model, this thesis further aimed at examining the role of job resources within both work stress models and their associations with general or work-related well-being. Thus, implications for research and practice for health promotion in police work can be derived.

In study 1, job resources as operationalized by team support, shared values and perceived fairness predicted general well-being and were shown to mitigate emotional exhaustion of police officers within the JD-R model. Job demands, on the other hand, were positively associated with emotional exhaustion. Even though general instead of work-related well-being was assessed study 1 confirmed the motivational process of the JD-R model, which is the positive link between job resources and well-being, in the group of police officers.

In study 2, work-related well-being in terms of work engagement was assessed. Social support by supervisors and co-workers were defined as job resources that were positively related to work engagement. The relationship between social support and work engagement was partially mediated by self-efficacy as a personal resource and work-privacy-conflict as a job demand. These results are in line with the assumptions of the JD-R model and conservation of resources theory where job resources and personal resources are mutually related and key motivators in the promotion of work engagement while job resources also reduce job demands to prevent losses in well-being.

In study 3, work engagement was applied within the ERI model to assess the role of reward as a job resource for work-related well-being. While effort was unrelated to work engagement esteem and security reward positively predicted work engagement as well as its subscales. Status reward showed no significant relation to work-related well-being. Reward was thus differentially related to the work-related well-being of police officers depending on its qualitative dimension. This study was one of the first to assess a salutogenic outcome within the ERI model in the context of police work.

The studies carried out within the framework of this thesis support the salutogenic relationship between job resources and well-being in the group of police officers. Practical implications on how to consider social support and reward – that proved as centrally important in policing – are suggested. Furthermore, the conceptualization of job resources

within the JD-R model and the ERI model is discussed. While the JD-R model is more flexible with regard to modeling a broad range of resources this comes at the costs of limited generalizability. The ERI model is less open but specific which facilitates comparisons across different samples and work contexts.

Lastly, limitations and directions for future research are given. Besides theoretical considerations with regard to the applied models the main limitations of the studies of this thesis are their cross-sectional research designs, self-report measures and limited generalizability due to the specific sample. However, with regard to the underlying research question, this thesis provides important findings about the health promoting role of job resources for well-being in the occupational group of police officers.

Zusammenfassung

Arbeitsbezogene Gesundheit wurde traditionell einem pathogenen Ansatz folgend beforscht, der gesundheitsgefährdende Risikofaktoren und damit einhergehende Gesundheitseinbußen fokussiert. Gesundheitsförderliche Aspekte der Arbeit wie arbeitsbezogene Ressourcen und arbeitsbezogenes Wohlbefinden haben in jüngerer Vergangenheit zunehmend an Bedeutung gewonnen. Das Job Demands-Resources (JD-R) Modell ist ein vielfach angewandtes Rahmenkonzept der arbeitspsychologischen Gesundheitsforschung, das arbeitsbezogene Ressourcen als zentrale Determinanten der Arbeitnehmer*innengesundheit definiert. Arbeitsbezogene Ressourcen werden darin als jene Aspekte der Arbeit verstanden, welche die Zielerreichung erleichtern, Arbeitsanforderungen und damit einhergehende Gesundheitsrisiken reduzieren sowie persönliches Wachstum und Entwicklung fördern. Im JD-R Modell führen arbeitsbezogene Ressourcen entlang eines motivationalen Pfads zu Arbeitsengagement, das Ausdruck arbeitsbezogenen Wohlbefindens ist.

Ein weiteres weitverbreitetes Modell der arbeitspsychologischen Gesundheitsforschung ist das Modell der beruflichen Gratifikationskrisen (ERI-Modell). Die Reziprozität von Verausgabung (Kosten) und Belohnung (Gratifikation) im Arbeitskontext stehen darin im Fokus. Ist die Verausgabung hoch und die Belohnung niedrig, resultiert ein Ungleichgewicht (Gratifikationskrise), das Stress und daraus folgende Gesundheitseinbußen bei Beschäftigten verursacht. Die gesundheitsbeeinträchtigende Wirkung beruflicher Gratifikationskrisen wurde in einer Vielzahl von Studien belegt.

Polizeivollzugsbeamte (PVB) sind aufgrund hoher Arbeitsanforderungen und Verausgabung eine besonders belastete Berufsgruppe. Arbeitsbezogene Risikofaktoren und damit einhergehende Gesundheitsbeeinträchtigungen der Polizeiarbeit wurden vielfach erforscht; gesundheitsförderlichen Aspekten wie arbeitsbezogenen Ressourcen und Wohlbefindensmerkmalen wurde bisher weniger Aufmerksamkeit zuteil.

Ziel der vorliegenden Arbeit war, einer salutogenen Perspektive folgend arbeitsbezogene Ressourcen sowie ihre gesundheitsförderliche Bedeutung für das Wohlbefinden von PVB zu ergründen. Dafür wurden sowohl das JD-R Modell als auch das ERI-Modell genutzt. Außerdem wurde die Rolle arbeitsbezogener Ressourcen und deren Beziehung zu allgemeinem wie auch arbeitsbezogenen Wohlbefinden im Rahmen dieser Modelle exploriert. Daraus können Implikationen für Forschung und Praxis der Gesundheitsförderung in der Polizeiarbeit abgeleitet werden.

In Studie 1 waren – im Sinne des JD-R Modells – arbeitsbezogene Ressourcen (erfasst über Zusammenhalt im Team, geteilte Wertvorstellungen und wahrgenommene Fairness) positiv mit allgemeinem Wohlbefinden und negativ mit emotionaler Erschöpfung der PVB assoziiert. Arbeitsanforderungen wiederum waren positiv mit emotionaler Erschöpfung assoziiert. Studie 1 bestätigt damit den motivationalen Pfad des JD-R Modells für die Gruppe der PVB, der die positive Beziehung zwischen arbeitsbezogenen Ressourcen und Wohlbefinden beschreibt. Dafür wurde nicht arbeitsbezogenes Wohlbefinden – wie im JD-R Modell vorgesehen – sondern allgemeines Wohlbefinden betrachtet.

In Studie 2 wurde Arbeitsengagement als Indikator für arbeitsbezogenes Wohlbefinden hinzugezogen. Soziale Unterstützung durch Vorgesetzte und Kolleg*innen als arbeitsbezogene Ressourcen war positiv mit Arbeitsengagement assoziiert. Der Zusammenhang zwischen sozialer Unterstützung und Arbeitsengagement wurde teilweise über die personale Ressource Selbstwirksamkeit sowie den Konflikt zwischen Arbeits- und Privatleben als Arbeitsanforderung mediiert. Diese Ergebnisse stimmen mit den Annahmen des JD-R Modells sowie der Theorie der Ressourcenerhaltung überein, wonach sich arbeitsbezogene Ressourcen und personale Ressourcen wechselseitig beeinflussen und das Arbeitsengagement fördern. Gleichzeitig können arbeitsbezogene Ressourcen Arbeitsanforderungen und damit einhergehende Wohlbefindenseinbußen reduzieren.

In Studie 3 wurde Arbeitsengagement im Rahmen des ERI-Modells betrachtet, um die Rolle von Belohnung als arbeitsbezogene Ressource für das arbeitsbezogene Wohlbefinden von PVB zu ergründen. Während sich für Verausgabung kein Zusammenhang mit Arbeitsengagement zeigte, leisteten sowohl Wertschätzung als auch die Konstanz der Arbeitssituation als Indikatoren für Belohnung einen positiven Vorhersagebeitrag für das Arbeitsengagement. Belohnung im Sinne von Aufstiegsmöglichkeiten war hingegen kein Prädiktor von arbeitsbezogenem Wohlbefinden. Die Belohnungskomponenten waren somit unterschiedlich mit dem arbeitsbezogenen Wohlbefinden der PVB verbunden. Diese Studie untersuchte als eine der ersten gesundheitsförderliche Aspekte der einzelnen Komponenten des ERI-Modells in der Polizeiarbeit.

Die Studien der vorliegenden Arbeit belegen die salutogene Beziehung zwischen arbeitsbezogenen Ressourcen und Wohlbefinden in der Gruppe von PVB. Es werden praktische Implikationen vorgeschlagen, wie soziale Unterstützung und Belohnung, die sich als besonders wichtig im Polizeikontext erwiesen, gefördert werden können. Außerdem wird die Konzeptualisierung von arbeitsbezogenen Ressourcen im JD-R wie auch ERI-Modell diskutiert. Zwar ist das JD-R Modell flexibler und bietet die Möglichkeit, unterschiedliche Ressourcen zu modellieren, allerdings ergibt sich daraus auch eine eingeschränkte Generalisier- und Vergleichbarkeit. Das ERI-Modell wiederum ist weniger flexibel, dafür spezifisch, was die Vergleichbarkeit zwischen verschiedenen Gruppen und Arbeitskontexten erleichtert.

Schließlich werden Limitationen der vorliegenden Arbeit genannt und Ideen für zukünftige Forschung gegeben. Als Hauptlimitationen der Studien dieser Arbeit werden das querschnittliche Studiendesign, die Verwendung von Selbstauskünften und die eingeschränkte Generalisierbarkeit aufgrund der spezifischen Stichprobe genannt. Theoretische Überlegungen bezogen auf das JD-R sowie das ERI-Modell werden dargelegt. Mit Blick auf die zugrundeliegende Fragstellung leistet die Arbeit einen wertvollen Forschungsbeitrag

hinsichtlich des gesundheitsförderlichen Potentials von arbeitsbezogenen Ressourcen für das Wohlbefinden von PVB.

List of Publications

Articles in Peer-Reviewed Journals (* indicate articles that are part of this thesis)

* Wolter, C., Santa Maria, A., Wörfel, F., Gusy, B., Lesener, T., Kleiber, D., & Renneberg, B. (2019). Job demands, job resources, and well-being in police officers – a resource-oriented approach. *Journal of Police and Criminal Psychology, 34*(1), 45-54. https://doi.org/10.1007/s11896-018-9265-1

  (First author conducted the literature research, developed the research question, conceived the analysis, analyzed the data, and wrote the paper; due: predominately; contribution: 60%)

* Wolter, C., Santa Maria, A., Gusy, B., Lesener, T., Kleiber, D., & Renneberg, B. (2019). Social support and work engagement in police work: The mediating role of work-privacy conflict and self-efficacy. *Policing: An International Journal, 42*(6), 1022-1037. https://doi.org/10.1108/PIJPSM-10-2018-0154

  (First author carried out the data collection, conducted the literature research, developed the research question, conceived the analysis, analyzed the data, and wrote the paper; due: predominately; contribution: 70%)

* Wolter, C., Santa Maria, A., Georg, S., Lesener, T., Gusy, B., Kleiber, D., & Renneberg, B. (2019). Relationships between effort-reward imbalance and work engagement in police officers: Taking a salutogenic perspective. *Journal of Public Health.* https://doi.org/10.1007/s10389-019-01112-1

  (First author carried out the data collection, conducted the literature research, developed the research question, conceived the analysis, analyzed the data, and wrote the paper; due: predominately; contribution: 70%)

Georg, S., Wolter, C., Santa Maria, A., Kleiber, D., & Renneberg, B. (2019). Berufliche Gratifikationskrisen, arbeitsbezogene Erschöpfung und Frühberentung bei der Polizei.

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Lesener, T., Gusy, B., & Wolter, C. (2019). The job demands-resources model: A meta-analytic review of longitudinal studies. *Work & Stress, 33*(1), 76–103. https://doi.org/10.1080/02678373.2018.1529065

Santa Maria, A., Wolter, C., Gusy, B., Kleiber, D. & Renneberg, B. (2019). The impact of health-oriented leadership on police officers' physical health, burnout, depression and well-being. *Policing: A Journal of Policy and Practice, 13*(2), 186-200. https://doi.org/10.1093/police/pay067

Engel, S., Wörfel, F., Santa Maria, A., Wolter, C., Kleiber, D. & Renneberg, B. (2018). Leadership climate prevents emotional exhaustion in German police officers. *International Journal of Police Science & Management, 20*(3), 217-224. https://doi.org/10.1177/1461355718786295

Santa Maria, A., Wörfel, F., Wolter, C., Gusy, B., Rotter, M., Stark, S., Kleiber, D., & Renneberg, B. (2018). The role of job demands and job resources in the development of emotional exhaustion, depression, and anxiety among police officers. *Police Quarterly, 21*(1), 109–134. https://doi.org/10.1177/1098611117743957

Eigenständigkeitserklärung

Hiermit versichere ich, dass ich die vorliegende Arbeit selbstständig, ohne unerlaubte Hilfe verfasst habe und keine anderen als die angegebenen Quellen und Hilfsmittel verwendet sowie sämtliche Zitate kenntlich gemacht habe.

Die Arbeit ist in keinem früheren Promotionsverfahren eingereicht, angenommen oder abgelehnt worden.

Berlin, den

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