Means of Sustainable Recruitment: The Importance of Selection Factors and Psychosocial Working Conditions in Predicting Work and Health Outcomes

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Abstract

Research on selection factors often focuses on how to identify suitable candidates, while fewer studies have investigated the long-term effects of such selection factors once the suitable candidates have started working and faced the work situation. The overall aim of the present study was to examine the relative importance of selection factors (general intelligence, personality, and physical fitness), measured during recruitment, and psychosocial working conditions (e.g., workload, job control, and job challenge) for four different outcomes (job satisfaction, organizational citizenship behavior, occupational retention, and health). Data came from a longitudinal study of newly hired police officers in Sweden (N = 508), including information from both the recruitment process and a three-and-a-half year follow-up. Results of hierarchical multiple regression analyses show that psychosocial working conditions were far more important than the selection factors in predicting the four outcomes. The strong effects of psychosocial working conditions for new officers' work-related attitudes and health suggest that employers, to ensure sustainability, need to focus on activities facilitating the organizational and professional entrance of newcomers by providing a sound work climate.

Keywords: personality and individual differences, organizational culture and climate, demands, health outcomes, work stress models, police

Introduction

Employee selection is an important activity in organizations and aims to assess individual characteristics considered important in predicting applicants' future e Introduction

Employee selection is an important activity in organizations and aims to assess individual characteristics considered important in predicting applicants' future effectiveness as employees (Farr & Tippins, 2010). Numerous studies support the use of selection tools measuring personal resources such as cognitive ability and personality for the prediction of job performance (e.g., Schmidt & Hunter, 1998). However, another important tradition within organizational research emphasizes psychosocial working conditions (e.g., workload and job control) in explaining outcomes such as work related attitudes and health (e.g., Bakker & Demerouti, 2007; Hackman & Oldham, 1980; Karasek & Theorell, 1990).

For employers, the costs of recruiting and training new personnel can be high (e.g., Griffeth & Hom, 2001). This is obvious in cases with many candidates, when the selection process is thorough, and when lengthy and expensive training is needed before employees can start their actual work, which for example is typical when recruiting new police or military personnel. Here, estimates suggest that it takes up to ten years before police authorities achieve an effective return on their investments in new officers (Allisey, Noblet, Lamontagne, & Houdmont, 2014). To avoid unwanted and expensive consequences associated with newly hired employees (e.g., low performance, illness, and premature turnover), employers may benefit from providing sound psychosocial working conditions that help foster sustainability of new personnel, which in turn enhances long-term organizational effectiveness. This suggests that sustainable recruitment is a process that extends beyond the formal selection decision to also include the period when newcomers start working, facing the tasks and job characteristics.

Employers who strive for organizational sustainability are likely to benefit from considering the influence of both selection factors and psychosocial working conditions in their recruitment processes. Besides these factors being associated with job performance they may also be linked to other attitudinal and behavioral outcomes reflecting sustainable recruitment. Such outcomes include for instance satisfaction with the job, a willingness to exert extra effort for the best of the organization, a willingness to stay in the job, and to remain healthy, which signal an ability to tackle psychological and physical job demands. However, the theoretical and empirical literature examining the relative importance of selection factors and psychosocial working conditions for outcomes reflecting sustainable recruitment is limited. In fact, most research focusing on motivational and behavioral organizational outcomes has examined the effects of individual dispositions and job characteristics separately, or has given one or the other

little attention (Barrick, Mount, & Li, 2013; Saks & Ashforth, 2000). This limitation is most relevant for the selection literature, which typically neglects the influence of working conditions after having assessed the applicants (Ployhart & Schneider, 2012). This underscores the need to examine further the relative importance of selection factors as compared to psychosocial working conditions in relation to personnel organizational outcomes reflecting sustainable recruitment. Such studies would improve the theoretical understanding of the process of sustainable recruitment and provide support for more efficient recruitment practices.

Selection factors

While the specific selection tools used by employers vary, the literature suggests that some factors are generally useful for employee selection. Such general selection factors include cognitive tests and personality inventories. Cognitive tests are typically assumed to measure general intelligence (g) and have been found to be excellent predictors of job performance (Ones, Dilchert, Viswesvaran, & Salgado, 2010; Salgado, Anderson, Moscoso, Bertua, de Fruyt, & Rolland, 2003; Schmidt & Hunter, 1998). Personality inventories have shown modest validity in predicting job performance, with the Big Five dimensions conscientiousness and emotional stability being the most consistent predictors across different occupational groups (Barrick, Mount, & Judge, 2001; Hurtz & Donovan, 2000; Salgado, 1997, 2003). However, the combination of measures of cognitive ability and personality have been shown to be one of the most valid in predicting job performance, and accordingly been recommended for employee selection (Schmidt & Hunter, 1998). However, adding complementary and valid information, further improvement in the prediction can be expected. For example, physical tests have been shown to predict performance in physically demanding tasks (Hogan, 1991), and may thus be assumed to add valuable information when selecting for jobs including such tasks.

In addition to the selection literature, other areas of research have shown that individual characteristics are important for a wide range of outcomes. For instance, higher general intelligence has been associated with successfully dealing with the demands of everyday life (Gottfredson, 1997). More specifically, higher intelligence has been found to predict organizational citizenship behavior (Gonzales-Mulé, Mount, & Oh, 2014) and better general health (Der, Batty, & Deary, 2009) while negative linkages have been found for job satisfaction (Ganzach, 1998). Positive personality attributes tend to be associated with outcomes such as job satisfaction (Judge, Heller, & Mount, 2002), organizational citizenship behavior (Borman, Penner, Allen, & Motowidlo, 2001; Chiaburu, Oh, Berry, Li, & Gardner, 2011), retention (e.g., lower turnover intention; Barrick & Mount, 1996; Zimmerman, 2008), health-related behaviors (e.g., less risky driving and less alcohol use; Bogg & Roberts, 2004) and longevity (Roberts,

Kuncel, Shiner, Avshalom, Caspi, & Goldberg, 2007), with conscientiousness and emotional stability being the most influential personality dimensions. While physical fitness is seldom examined in relation to different work outcomes, physical fitness has been linked to reduced stress and improved health (Gerber, Kellmann, Hartmann, & Pühse, 2010). Taken together, previous research suggests that individual characteristics typically covered by selection factors are valuable for a range of outcomes reflecting sustainable recruitment, such as job satisfaction, organizational citizenship behavior, retention, and health.

Psychosocial working conditions

After a selection process, new employees enter their jobs with each of them facing the actual working situation and its psychosocial conditions. Extensive research has shown that psychosocial working conditions are important for various attitudinal, behavioral and health outcomes (e.g., Humphrey, Nahrgang, & Morgeson, 2007). Several models, including the job demands–resources model (Bakker & Demerouti, 2007; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), the job characteristics model (Hackman & Oldham, 1980), the demand–control–support model (Karasek & Theorell, 1990), and the effort–reward imbalance model (Siegrist, 1996), have been put forth to explain the general relationships between psychosocial working conditions and various work and health-related outcomes. Yet, the different models overlap, for instance in including both job demands, such as workload and emotional demands, and resources (or motivational characteristics), such as job control and social support.

Further, existing research has shown that psychosocial working conditions may vary in importance for predicting different employee and organizational outcomes (Bakker, Demerouti, & Euwema, 2005; de Jonge, Mulder, Nijhuis, 1999). Overall, high demands have been found to impair health, while high resources have been found to foster positive work attitudes. The specific working conditions associated with such outcomes also tend to differ between occupations; for example, both quantitative demands and emotional demands have been found important psychosocial factors among human service workers (Van Vegchel, de Jonge, Söderfeldt, Dormann, & Schaufeli, 2004). A similar distinction has been suggested for organizational demands (e.g., work overload, poor management, and bureaucracy) and operational demands (e.g., exposure to danger and dealing with victims) that are key psychosocial factors among police officers, with organizational demands being among the most important (Abdollahi, 2002; Stinchcomb, 2004; Waters & Ussery, 2007).

The present study primarily focused on investigating the overall importance of psychosocial working conditions and selection factors for sustainable recruitment. We decided to use a limited number of specific working conditions that have been found relevant for job satisfaction (e.g.,

Humphrey et al., 2007), organizational citizenship behavior (e.g., Podsakoff, McKenzie, & Bommer, 1996), turnover intention (e.g., Humphrey et al., 2007), and health (e.g., Kivimäki et al., 2012; Stanford & Candy, 2006). In choosing these specific working conditions we also considered the fact that the present study sample consists of new police officers which means that we used findings from the relevant police literature (e.g., Kop & Euwema, 2001; Martinussen, Richardsen, & Burke, 2007; Miller, Mire, & Kim, 2009; Noblet, Rodwell, & Allisey, 2009). Drawing on both the general and the occupation-specific literature, five different working conditions were included, namely: workload, emotional demands, job control, feedback, and job challenge.

Specifically, considering the police literature, workload was assumed to represent organizational demands and emotional demands to represent operational demands (cf. Waters & Ussery, 2007). In understanding police work, the rewarding aspects of policing, such as excitement, variation, and helping and dealing with people, have been suggested important (e.g., Kop, Euwema, & Schaufeli, 1999; Martinussen, Richardsen, & Burke, 2007; Storch & Pantzarella, 1996). Such rewarding aspects of policing have been found to influence the motivation to become a police officer (Raganella & White, 2004). In view of this, feedback (e.g., from supervisors, co-workers, or work) and job challenge (i.e., variation of work and opportunities for learning) were chosen to reflect the rewarding aspects of police work among newly hired officers. Also, police research has shown job control (i.e., amount of autonomy and influence on how the work is carried out) to be important for police officers' job satisfaction (Miller, Mire, & Kim, 2009) and well-being (Noblet, Rodwell, & Allisey, 2009).

Aim and hypotheses

The overall aim of the present study was to add to the theoretical understanding of the process of sustainable recruitment and support for recruitment practice. Specifically, we examined the relative importance of selection factors (general intelligence, personality, and physical fitness) and psychosocial working conditions (workload, emotional demands, job control, feedback, and job challenge) for four occupational outcomes (job satisfaction, organizational citizenship behavior, occupational retention, and health) assumed to indicate sustainable recruitment. In predicting the outcomes, we used data on newly hired Swedish police officers. Based on existing theory and empirical research we hypothesized selection factors to predict all four outcomes (H1), and psychosocial working conditions to add substantially over and above the selection factors in predicting all outcomes (H2).

These general hypotheses were supplemented with more specific predictions to clarify which specific predictors were expected to relate to which specific outcomes associated with sustainable recruitment. We

hypothesized general intelligence to be positively associated with organizational citizenship behavior and health, and negatively related to job satisfaction (H1a); in addition, we expected personality to predict all four outcomes (H1b), and physical fitness to predict health (H1c). Further, after controlling for selection factors, we hypothesized demands (i.e., workload and emotional demands) to be negatively related to health (H2a), and job resources (i.e., job control, feedback, and job challenge) to be most influential in predicting job satisfaction, organizational citizenship behavior, and occupational retention (H2b). In testing all hypotheses we controlled for two individual demographic factors (gender and age) and two organizational factors (operational duty and size of police authority) assumed relevant for the analyzed sample of new Swedish police officers.

Method

Setting

Sweden has one national police force, which in 2011 included 21 county police authorities. To become a police officer, applicants first have to pass an extensive admittance process for the basic police-training program. The basic training consists of two years of academy training, at one of three sites, and six months of field training at a county police authority. During field training, but not academy training, officers have salaried temporary employment. Having completed their training, the new officers get employed as constables and typically work in operational duty.

Participants and procedure

The present study used data from two time-points, from the admittance process to the basic police training (Time 1; spring 2008) and from a three-and-a-half year follow-up when the participants had finalized their first year of employment (Time 2; end of 2011). At Time 1, after initial hurdles, 1,429 applicants conducted final admission tests at the Swedish Defence Recruitment Agency (SDRA). Of these, 1,344 (94 %) consented to participate in the research project. At the SDRA, all participants received a survey including background questions and a personality test, not included in the ordinary admission process. The SDRA and the National Police Board provided data concerning the admittance process (e.g., test results).

In fall 2008, 758 of the participants began their basic training and at Time 2 (i.e., at the end of 2011), 710 of them had finished their first work year as police officers and were in active duty, with most drop-outs being temporary (e.g., parental leave). All the 710 participants in active duty at Time 2 received a follow-up survey and a written reminder, administrated by the

county police authorities. The participants returned their surveys in pre-paid envelopes to the SDRA. The effective sample in this study includes the 508 (72 %) officers who completed the follow-up survey. There were no differences in Time 1 variables between respondents and non-respondents at Time 2. The mean age (2008) of the participants was 26 years (SD = 4), and 167 (33 %) were women. Ethical approval was obtained from the Regional Ethical Review Board in Stockholm.

Measures

Table 1 presents descriptive statistics for all measures. Overall, the reliabilities were satisfactory, with alphas ≥ .70.

Outcomes. All four outcomes were measured at Time 2. Job satisfaction was measured with a Swedish version (Hellgren, Sjöberg, & Sverke, 1997) of a three-item scale of job satisfaction (Brayfield & Rothe, 1951), capturing the affective dimension of job satisfaction. A sample item of this scale is: "I am satisfied with my job". Organizational citizenship behavior was measured by a scale of five items (Öhrming & Sverke, 2001), adapted to reflect willingness to exert extra effort for the best of the police. Sample items include: "I am prepared to work harder than what is expected of me, if it helps the police in being successful" and "I am motivated to work extra hard for the police". Occupational retention was measured with a three-item scale of occupational turnover (Cohen, 1998; Mobley, Griffeth, Hand, & Meglino, 1979), reverse-coded to mirror retention. An item from this scale is: "I am actively looking for a job outside the police". Health was measured with a scale based on an instrument measuring subjective health complaints in the general population (Eriksen, Svendsrød, Ursin, & Ursin, 1998), including ten reverse-coded items concerning frequency of common health complaints (e.g., back pain, headache, and sleeping problems). All outcome item responses were given on Likert scales, ranging from 1 (strongly disagree) to 5 (strongly agree), except for health where items were answered on a five-point scale, ranging from 1 (never) to 5 (daily) and framed to cover the first year of work.

Selection factors. Five measures of three categories of selection factors, assessed at Time 1, were included in the study. General intelligence (g) was measured by Uniq (Lothigius & Sjöberg, 2004), a test of six subtests developed to be used in the screening of Swedish police applicants where a composite score is presented on a Stanine scale (see Annell, Sjöberg, & Sverke, 2014). Three personality dimensions, conscientiousness, emotional stability, and agreeableness, were measured with Measuring Integrity (MINT), a Swedish integrity test (Sjöberg & Sjöberg, 2007). Each dimension had 20 items, with response alternatives ranging from 1 (strongly disagree) to 4 (strongly agree). Physical fitness was measured by a test of two kilometers of timed running, with separate cut-offs for women (10 minutes and 15 seconds) and men (9 minutes and 30 seconds) (see Annell, 2012). In

Table 1. *Descriptives and correlations among variables in the analyzed dataset (N =508)*

Variables	Number of items	M	SD	Range	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Demographic variables																						
1. Gender (Woman)	1	0.33	0.47	0-1	-																	
2. Age (2008)	1	26.09	4.16	20-37	-.12**	-																
3. Operational duty	1	0.62	0.49	0-1	.00	.06	-															
4. Size of police authority (Large)	1	0.58	0.49	0-1	-.03	-.01	-.43***	-														
Selection factors																						
5. General intelligence	82	4.86	1.83	1-9	-.08	.14**	-.00	.04	*.85*[a]													
6. Conscientiousness	20	69.94	4.93	54-80	-.00	-.04	.06	.02	-.07	*.82*												
7. Emotional stability	20	69.55	5.18	49-79	-.01	.09*	-.04	-.00	-.11*	.40***	*.80*											
8. Agreeableness	20	62.48	4.92	45-75	.09	-.02	-.03	-.04	-.03	.13**	.49***	*.66*										
9. Physical fitness	1	5.03	1.92	1-9	-.03	-.10*	.00	.06	.03	.12**	.04	.08	-									
Psychosocial working conditions																						
10. Workload	4	2.83	0.77	1-5	-.00	.10*	-.14**	.12**	-.03	-.01	-.04	.01	-.04	*.76*								
11. Emotional demands	4	2.57	0.49	1.25-4.25	-.17***	-.00	.13**	.03	-.04	.06	.11*	.02	-.00	.27***	*.66*							
12. Job control	4	3.40	0.69	1-5	.01	-.06	.12**	-.21***	-.01	.07	-.01	.00	.05	-.28***	-.06	*.77*						
13. Feedback	4	3.12	0.76	1-5	.02	-.02	.01	-.03	-.11*	-.01	.06	-.01	.05	.20***	.02	.45***	*.75*					
14. Job challenge	3	4.25	0.72	1-5	.06	.08	.35***	-.22***	.02	.06	.05	.15***	-.01	.03	.16***	.36***	.23***	*.72*				
Outcomes																						
15. Job satisfaction	3	4.11	0.88	1-5	-.02	.07	.21***	-.20***	-.08	.07	.11*	.15***	.01	-.17***	.10*	.42***	.38***	.61***	*.89*			
16. Organizational citizenship behavior	5	3.60	0.81	1-5	-.01	.02	.07	-.12**	-.03	.16***	.16***	.15***	-.04	-.06	.13**	.29***	.34***	.31***	.49***	*.86*		
17. Occupational retention	3	4.53	0.80	1-5	-.00	.01	.10*	-.14**	-.03	-.01	.04	.11*	-.03	-.27***	-.07	.35***	.35***	.38***	.60***	.34***	*.85*	
18. Health	10	4.14	0.54	2-5	-.19***	.02	-.04	-.07	-.10*	.04	.11*	.09*	.15***	-.30***	-.18***	.13**	.19***	.05	.26***	.14**	.23***	*.79*

Note: Gender, age and selection factors measured at Time 1 (2008), all other variables at Time 2 (2011). Reliability estimates (alpha) in the diagonal. [a] Alpha estimate provided from the manual (Lothigius & Sjöberg, 2004).

Sig. * p <.05, ** p < .01, *** p < .001.

the present study, the results were standardized within gender into a Stanine scale.ffectiveness as employees (Farr & Tippins, 2010). Numerous studies support the use of selection tools measuring personal resources such as cognitive ability and personality for the prediction of job performance (e.g., Schmidt & Hunter, 1998). However, another important tradition within organizational research emphasizes psychosocial working conditions (e.g., workload and job control) in explaining outcomes such as work related attitudes and health (e.g., Bakker & Demerouti, 2007; Hackman & Oldham, 1980; Karasek & Theorell, 1990).

For employers, the costs of recruiting and training new personnel can be high (e.g., Griffeth & Hom, 2001). This is obvious in cases with many candidates, when the selection process is thorough, and when lengthy and expensive training is needed before employees can start their actual work, which for example is typical when recruiting new police or military personnel. Here, estimates suggest that it takes up to ten years before police authorities achieve an effective return on their investments in new officers (Allisey, Noblet, Lamontagne, & Houdmont, 2014). To avoid unwanted and expensive consequences associated with newly hired employees (e.g., low performance, illness, and premature turnover), employers may benefit from providing sound psychosocial working conditions that help foster sustainability of new personnel, which in turn enhances long-term organizational effectiveness. This suggests that sustainable recruitment is a process that extends beyond the formal selection decision to also include the period when newcomers start working, facing the tasks and job characteristics.

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outcomes reflecting sustainable recruitment. Such studies would improve the theoretical understanding of the process of sustainable recruitment and provide support for more efficient recruitment practices.

Psychosocial working conditions. The study included five measures of self-rated psychosocial working conditions measured at Time 2. Workload was assessed using a four-item scale, based on a measure of role overload (Beehr, Walsh, & Taber, 1976). A sample item is: "I often have too much to do in my job". Emotional demands was measured by a four-item scale (Sundin, Hochwälder, & Bildt, 2008), adapted by us to the police context, concerning the frequency of facing death, suffering individuals, aggressive people, and fear of one's life. Job control was measured with a Swedish version (Sverke & Sjöberg, 1994) of a four-item scale (Hackman & Oldham, 1975). An item of this scale is: "I can make my own decisions on how to organize my work". Feedback was measured by a four-item scale (Hackman & Oldham, 1975). An example item is: "I have a pretty good idea of whether or not I am performing my job sufficiently well". Job challenge was measured by a three-item scale, reflecting if work is inherently varying and involves opportunities for learning (Hellgren, Sjöberg, & Sverke, 1997). Two items are: "My work is characterized by change and variation" and "I am learning new things all the time in my job". Item responses on measures of psychosocial working conditions were given on Likert scales, ranging from 1 (strongly disagree) to 5 (strongly agree), except for emotional demands where the response scale ranged from 1 (never) to 5 (daily) and covered the first work year.

Demographic variables. Four demographic variables were included in the study. Two individual variables measured at Time 1 were used: gender (1 = woman, 0 = man) and age (in 2008). We also included two organizational variables measured at Time 2: size of police authority 2011 (1 = large – 3 units with 2658 to 5667 employed officers, 0 = small or medium – 18 units with 114 to 793 employed police officers) and operational duty, measured by a set of survey questions coded into a dichotomous variable (1 = mainly operational, i.e., patrolling, community policing, and traffic duties, 0 = mainly other duties, i.e., investigations and other non-operational duties such as communication center work).

Data preparation and analyses

In the original dataset (N= 508) there were < 1 % missing values. To avoid loss of information, by excluding 81 cases with incomplete data, missing values were imputed by application of the expectation-maximization (EM) method (Little & Rubin, 1987) in SPSS 21. All variables were used as predictors in the equation. The imputed dataset was then used for hierarchical multiple regression analyses to predict the four outcome variables (job satisfaction, organizational citizen behavior, occupational

retention, and health), after first having been found to sufficiently meet the statistical assumptions. The predictors were entered in three successive steps (demographic variables, selection factors, and psychosocial working conditions) in order to determine the relative importance of the predictors and to study the change in explained variance for each block of predictors.

Results

Table 2 presents the results of the regression analyses. In the first step, the demographic variables (gender, age, operational duty, and size of police authority) accounted for 6 % of the variance in job satisfaction, 1 % in occupational retention, and 4 % in health, but did not explain any significant variance in organizational citizenship behavior. New officers working at large police authorities were less satisfied with their jobs, reported lower levels of organizational citizenship behavior, lower intention to stay in the profession, and poorer health. Officers mainly working in operational duty were more satisfied with their job than those mainly working with other duties (e.g., investigations). Women reported higher levels of health complaints than did men, while age did not predict any of the outcome variables.

Controlling for the first step, the adjusted difference in explained variance (Adj. $\Delta R2$) showed the second step of the analyses – including the selection factors (general intelligence, the personality dimensions conscientiousness, emotional stability, and agreeableness, and general physical fitness) – to add 2 % of explained variance in job satisfaction, 4 % in organizational citizenship behavior, and 4 % in health, but nothing in terms of occupational retention. The total amount of explained variance in Step 2 did not exceed 8 % in any of the outcome variables. All control variables that were significant predictors in the first step remained significant in the second step. Of the selection factors, general intelligence was negatively related to health, the two personality dimensions agreeableness and conscientiousness were associated with organizational citizenship behavior, and agreeableness also predicted job satisfaction and retention, while general physical fitness significantly predicted health.

The third step, including psychosocial working conditions while controlling for previous steps, added 39 % of explained variance in job satisfaction, 16 % in organizational citizenship behavior, 24 % in occupational retention, and 13 % in health. The final models explained 47 % of the variance in job satisfaction, 21 % in organizational citizenship behavior, 26 % in occupational retention, and 21 % in health. When the psychosocial working conditions were added to the equation, several variables that were significant in Step 1 and Step 2 became non-significant; size of police authority became non-significant in predicting all four

Table 2. Results from hierarchical multiple regression analyses predicting job satisfaction, organizational citizenship behavior, occupational retention, and health, by selection factors and psychosocial working conditions in a sample of new Swedish police officers (N = 508)

Steps	Job satisfaction			Organizational citizenship behavior			Occupational retention			Health		
Predictors	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Step 1: Demographic variables												
1. Gender (Woman)	-.01	-.03	-.05	-.01	-.02	-.02	-.01	-.02	-.05	-.19***	-.20***	-.23***
2. Age (2008)	.06	.07	.06	.01	.01	.01	.00	.00	.01	.00	.03	.04
3. Operational duty	.14**	.15**	-.04	.02	.02	-.06	.06	.07	-.05	-.08	-.08	-.11*
4. Size of police authority (Large)	-.14**	-.13**	-.06	-.12*	-.11*	-.08	-.11*	-.10*	-.03	-.11*	-.11*	-.07
Step 2: Selection factors												
5. General intelligence		-.08	-.07*		-.01	.01		-.03	-.03		-.12**	-.12**
6. Conscientiousness		.04	.02		.13**	.13**		-.03	-.03		-.01	.01
7. Emotional stability		.02	.01		.05	.02		-.00	-.02		.06	.05
8. Agreeableness		.13**	.06		.11*	.10*		.12*	.09		.05	.06
9. Physical fitness		.01	-.01		-.06	-.07		-.03	-.05		.15***	.13**
Step 3: Psychosocial working conditions												
10. Workload			-.13***			.02			-.21***			-.26***
11. Emotional demands			.04			.10*			-.06			-.17**
12. Job control			.12**			.10			.09			-.05
13. Feedback			.18***			.25***			.18***			.13**
14. Job challenge			.52***			.18***			.33***			.10*
R	.25***	.31***	.70***	.13	.25***	.48***	.14*	.19*	.54***	.21***	.30***	.48***
Adj. R^2	.06***	.08***	.47***	.01	.05***	.21***	.01*	.02*	.27***	.04***	.08***	.21***
Adj. ΔR^2	.06***	.02**	.39***	.01	.04***	.16***	.01*	.01	.25***	.04***	.04***	.13***

* p < .05, ** p < .01, *** p < .001.

outcomes, agreeableness in predicting job satisfaction and occupational retention, and operational duty in predicting job satisfaction. The effects of the other significant relationships in Step 2 remained in Step 3. Two variables that were non-significant in previous steps became significant in Step 3: operational duty, which was negatively related to health, and general intelligence, which had a negative association with job satisfaction.

In the final model, job challenge was the strongest predictor of job satisfaction, followed by feedback and lower workload, with job control and lower general intelligence also being significant predictors. As concerns organizational citizenship behavior, the strongest predictor was feedback, followed by job challenge and conscientiousness, with agreeableness and emotional demands also contributing positively to the prediction. The strongest predictor of occupational retention was job challenge, followed by lower workload, and feedback. The strongest predictor of the new police officers' health was lower workload, followed by being man, less exposure to emotional demands, and higher general physical fitness, with lower general intelligence, feedback, working mainly with non-operational duties, and job challenge also being significant predictors.

Discussion

The present study set out to examine the relative importance of selection factors and psychosocial working conditions for four organizational outcomes – job satisfaction, organizational citizenship behavior, occupational retention, and health – that were assumed to be indicative of sustainable recruitment. Our first main hypothesis (H1) predicted the block of selection factors to explain variance in all four outcomes, after controlling for the demographics (gender, age, size of authority, and operational duty). However, in this sample of new police officers in Sweden, the block explained additional variance only for three of the four outcomes, namely job satisfaction, organizational citizenship behavior, and health. Thus, hypothesis (H1) was only partially confirmed. Also, the contribution was rather marginal with the selection factors only adding up to four percent of explained variance in the outcomes. The psychosocial working conditions, in contrast, were shown to add between 13 (health) and 39 (job satisfaction) percent of explained variance in the four outcomes, when controlling for demographics and selection factors. Thus, confirming our second main hypothesis (H2), the main finding of the present study is that that the psychosocial working conditions were substantially more important for the four outcomes than were the selection factors that were assessed three-and-a-half years earlier, during the admittance process to the basic police training. Thus, in underscoring the importance of psychosocial working conditions, as compared to selection factors, for outcomes reflecting sustainable

recruitment, this study adds to the existing literature on personnel psychology.

Importance of selection factors

Extensive research supports the importance of selection factors such as general intelligence and personality for various outcomes (cf. Gonzales-Mulé et al., 2014; Gottfredson, 1997; Schmidt & Hunter, 1998). In this study, however, the block of selection factors only contributed up to four percent of additional explained variance in the outcome variables after controlling for demographics. While this is a small figure, especially in view of previous research (e.g., Gonzales-Mulé et al., 2014), it should be noted that the selection factors were measured three and a half years before the outcomes. Moreover, the final admission decision during the selection process was primarily based on other, but less valid, methods (e.g., interviews) than those investigated in the present study (see Annell, Lindfors & Sverke, 2015). Thus, the limited role of the selection factors is unlikely to result from restricted variation in these variables (cf. the standard deviations and ranges in Table 1). However, while the main hypotheses of this study focused on the blocks of selection factors and psychosocial working conditions respectively, the standardized regression coefficients (see Table 2) provided additional information pertinent for sustainable recruitment and the more specific hypotheses.

H1a predicted general intelligence to be positively associated with organizational citizenship behavior and health, and negatively related to job satisfaction. This hypothesis was only partially confirmed. While intelligence was negatively associated with job satisfaction (an effect that was significant only in Step 3), it did not predict organizational citizenship behavior and, contrary to predictions, the association with health was negative. These findings are opposed to previous research showing that intelligence is positively associated with organizational citizenship behavior (Gonzales-Mulé et al., 2014) and general health (Der et al., 2009). While general intelligence is typically argued to constitute a positive personal resource (cf. Gottfredson, 1997), these unexpected findings suggest the opposite and also raise questions relating not only to how well police work fits individuals with a higher intellectual capacity but also how police authorities handle these employees (e.g., by providing appropriate working conditions).

The second step of the regression analyses also showed that the personality dimensions predicted all outcomes but health. This means that H1b, which stipulated that personality would predict all four outcomes, was partially supported. These results converge with existing research showing personality to be influential for job satisfaction (Judge et al., 2002), organizational citizenship behavior (Gonzales-Mulé et al., 2014), and the

willingness to stay in a job (Zimmerman, 2008). However, the importance of personality for health-related outcomes (cf. Roberts et al., 2007) was not replicated. Specifically, the regression coefficients showed that higher agreeableness was related to higher job satisfaction, organizational citizenship behavior, and occupational retention. Additionally, high levels of conscientiousness were associated with organizational citizenship behavior. Although the bivariate correlations suggested associations between emotional stability and three of the outcomes, this personality dimension was non-significant throughout all regressions. These non-significant associations may relate to the sample of new police officers being highly selected on characteristics related to personality but may also reflect self-selection. Similar explanations may relate to why agreeableness, but neither conscientiousness nor emotional stability, as would be expected from previous research (see e.g., Judge et al., 2002), stood out as the most influential personality dimension when predicting the outcome variables. Nonetheless, the findings indicate the value of agreeableness among newly hired police officers. Finally, in accordance with H1c and previous research (Gerber et al., 2010), physical fitness predicted health, but was non-significant in predicting the three other outcomes.

Importance of psychosocial working conditions

In line with previous research, our study emphasizes the importance of psychosocial working conditions for work- and health-related outcomes (cf. Humphrey et al., 2007). Importantly, however, the present study provides a specific contribution in showing that the strong associations between psychosocial working conditions and outcome variables remained after controlling for a broad set of selection factors, including measures of general intelligence, personality, and physical fitness.

The psychosocial working conditions investigated here were assumed to be relevant for new police officers. Accordingly, two working conditions, namely workload and emotional demands, assumed to reflect organizational and operational demands respectively, were included to capture the demanding aspects of police work (cf. Waters & Ussery, 2007). In line with previous research showing demands to be associated with health problems (e.g., Bakker et al., 2005) and in accordance with H2a, we found a higher workload and a more frequent exposure to emotional demands to be the working conditions most strongly related to impaired health. Also, workload was negatively related to both job satisfaction and occupational retention, which is in line with the literature showing that organizational demands are more important than operational demands among police officers (e.g., Abdollahi, 2002). Taken together, these findings underscore the value of ensuring an adequate workload among new personnel. A seemingly odd finding is that higher emotional demands predicted organizational

citizenship behavior and that emotional demands evidenced positive bivariate associations also with job satisfaction. This unexpected finding may relate to the frequent exposure to emotionally demanding situations conforming with new officers' positive expectations of their occupation (cf. White & Raganella, 2004), which, conversely to any unmet expectations (cf. Saks & Ashforth, 2000), may foster their work motivation. Another reason may be that officers who report engaging in efforts for the best of the organization also are those who face the emotionally demanding aspects of police work.

H2b predicted the job resources (feedback, job challenge and job control) to be the most influential predictors of job satisfaction, organizational citizenship behavior and occupational retention (cf. Bakker & Demerouti, 2007). In line with this hypothesis, feedback and job challenge, which capture rewarding aspects of policing (cf. Martinussen et al., 2007), were found to have strong positive effects on these work-related outcomes, and were also positively associated with health. The present findings support viewing the psychosocial factors job challenge and feedback as essential for sustainable recruitment, and particularly so for new police officers. Notably, however, control, typically found an important predictor in organizational research (see Demerouti et al., 2001; Karasek & Theorell, 1990), was only significant for job satisfaction. A possible explanation may relate to the high associations between job control and the variables feedback and job challenge.

Adding psychosocial working conditions in the regression analyses rendered non-significant some previously significant predictors. Among the selection factors, agreeableness became non-significant in the final models for both job satisfaction and occupational retention. While this may suggest that psychosocial factors have a mediating role between selection factors and outcomes, it also shows that the contribution of individual resources may decrease when taking psychosocial working conditions into account. Similarly, the organizational demographics (i.e., operational duty and size of authority) that were significant in the earlier steps for job satisfaction, organizational citizenship behavior, and occupational retention, became non-significant. This demonstrates that a large share of the variance in the organizational demographics is related to psychosocial factors. Notably, adding psychosocial working conditions in the final models also rendered significant two previously non-significant predictors: operational duty (while size of authority became non-significant) which had a negative relation to health, and general intelligence which was negatively related to job satisfaction. This suggests the presence of complex relationships among the study variables.

The effects of demographic control variables remained significant only in one of the final models, namely for health. In line with previous research (e.g., Eriksen et al., 1998), being a woman was associated with poorer

health. The fact that operational duty was a significant negative predictor of health suggests that this factor reflects other aspects of interest. Physical demands may for instance be inherent in the operational duties of new police officers (e.g., shift work and wearing heavy equipment). Age was, somewhat surprisingly, non-significant in all models. Perhaps this relates to underlying factors acting in opposite directions, with older officers having a family being more prone to stay in the profession, but also being more experienced, well-educated and having better opportunities if deciding to leave the police. However, it should be noted that the age span of the sample was restricted.

The findings of the present study show strong effects of psychosocial working conditions for new officers' work-related attitudes and health. Although the direction of the relationships is theoretically supported, some of the common variance between work attitudes and health may relate to reciprocal relationships (see de Lange, Taris, Kompier, Houtman & Bongers, 2004; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009). For instance, employees with poor health may perceive the workload as higher while those engaging in organizational citizenship behaviors get enhanced feedback. Despite such complex potential underlying relationships, the present findings show clearly that working conditions are important for sustainable recruitment. In all, the strong effects of psychosocial factors, together with the rather limited contribution of selection factors, suggest that the selection literature (e.g., Schmidt & Hunter, 1998), has been overly optimistic regarding the influence of general intelligence and personality, at least when considering the types of outcomes investigated in the present study. Further, our findings imply that employers striving for sustainable recruitment need to focus on activities facilitating the entrance into organizations and subsequent professional careers, by providing sound psychosocial working conditions.

Methodological considerations

This study has several strengths but also some limitations that need to be addressed. In striving to be parsimonious we applied a limited and balanced (i.e., equal number of selection factors and working conditions) set of complementary predictors that were considered most relevant based on theory and previous empirical research. The sample size (N = 508) and response rate among officers in active duty (72 %) were both satisfactory; however, our choice of predictors may somehow have biased our findings, for instance by enlarging the difference between selection factors and psychosocial working conditions in the prediction of the outcome variables. While the findings could have been slightly different had additional selection factors or psychosocial working conditions been taken into account, it seems unlikely that doing so would have changed the main findings substantially, particularly when considering the number of already included variables and

the consistency of the present findings, but also in view of what has been found in previous research (see Saks & Ashforth, 2000). Furthermore, the outcome variables were chosen to reflect different relevant aspects of sustainable recruitment. Clearly it would have been informative to include a measure of task performance, but we chose not to do so in recognizing the well-known problems of accurately measuring police performance (e.g., Sanders, 2008). However, it would be informative if future research included other outcome variables.

While addressing a general issue of theoretical and practical concern, the present study made use of a sample of new police officers to investigate sustainable recruitment. Even though the police occupation has some rather unique attributes (e.g., the right to use deadly force), the occupation also shares important characteristics, such as frequent exposure to emotional demands, with other occupational groups including occupations in health care and human services. Thus, it seems reasonable to assume a general validity of the present findings, while the possibility to generalize to other occupations remains to be investigated. Also, the fact that the sample consisted of fairly young individuals in the beginning of their professional careers and that the pattern of associations may differ in other age groups has to be considered.

Another potential limitation of the present findings concerns causal inference. The selection factors were assessed three-and-a-half years prior to the measurement of outcomes. While this long time lag clearly speaks in favor of temporal precedence of the selection factors, it proves no causal relation (cf. Bollen, 1989) but may still provide an indication of the importance of selection factors in a longer time perspective. In contrast, data on psychosocial factors and the outcomes were collected at the same point in time. While this precludes conclusions about the causal role of working conditions, our findings follow both theoretical predictions (e.g., Bakker & Demerouti, 2007) and similar research findings spanning over four and ten months (see Saks & Ashforth, 2000).

A related issue concerns common method variance. The design of the present study, with measures from two points in time, separated individual demographics and selection factors from psychosocial working conditions and outcomes, thus making the impact of common method variance between selection factors and outcome variables a less plausible explanation underlying these findings. However, the strength of the relationships between psychosocial working conditions and criteria may still have been inflated by common method variance, but the fact that we controlled for individual differences variables reduces this plausibility. While the common method variance limitation is often exaggerated in organizational research (Spector, 2006), the cross-sectional relationships between psychosocial working conditions and the outcome variables make causal inferences inappropriate. Still, both theory and previous longitudinal research

examining the effects of working conditions on different organizational outcomes support the hypothesized direction of associations (e.g., de Lange, Taris, Kompier, Houtman, & Bongers, 2003; Mauno, Kinnunen, & Ruokolainen, 2007), although reciprocal relationships might explain some variance between variables (see de Jonge et al., 1999). To further examine how selection and psychosocial factors relate to outcomes it would be ideal to use complementary data sources (e.g., register based data along with self-reports) and include several follow-ups.

Conclusions

The present study approach combined two major but rarely integrated research perspectives, namely those of selection and psychosocial working conditions. In confirming most, but not all, of the hypotheses the present study showed psychosocial working conditions to be more important than selection factors in predicting new police officers' job satisfaction, organizational citizenship behavior, occupational retention, and health.

A main contribution is that strong associations between psychosocial working conditions and outcomes remained after controlling for selection factors, including general intelligence, personality, and physical fitness. Theoretically this suggests that individual characteristics may be less influential for employee work and health outcomes, as compared to perceived psychosocial working conditions. Examining the relative importance of selection factors and psychosocial working conditions for outcomes reflecting sustainable recruitment, this study contributes in clarifying the process of sustainable recruitment and providing support for improved recruitment practices. The strong effects of psychosocial working conditions on organizational outcomes among newly hired police officers suggest that employers should make an effort to provide new personnel with sound working conditions that facilitate role fulfilment, include a balanced workload and rewarding aspects such as feedback and opportunities for growth and development. By focusing on work climate issues facilitating the entrance into organizational and occupational careers, employers seem to have much to gain in avoiding unnecessary loss of productivity and competence that add to the high costs of recruitment and training (cf. Griffeth & Hom, 2001).

However, in showing the importance of psychosocial working conditions over selection factors for work-related attitudes and health, the present study findings also raise an issue concerning recruitment practice and theory, that is whether the selection literature (e.g., Schmidt & Hunter, 1998) has overstated the long-term importance of individual differences, such as general intelligence and personality, in primarily focusing on performance while neglecting outcomes that reflect sustainable recruitment and the influence of the working conditions that newcomers meet when entering

organizations. With selection often being a necessary part of recruitment, it should be emphasized that the measurement of individual differences for selection is valuable but that the present findings suggest that factors other than selection instruments may be central long-term indicators of how new employees adapt to the work situation. Moreover, to achieve sustainable recruitment, our findings suggest that investments and expectations in selection practices also have to be realistic and complemented with the consideration of the working conditions of the newly hired employees. This may be of particular importance when recruiting for long-term organizational careers. To conclude, the findings show that traditional selection factors and psychosocial working conditions are to be considered as complementary and essential means of sustainable recruitment, and particularly so for organizations having high costs of recruitment and training, such as in the police.

Notes

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