

Determining the influences on
motivation, commitment, satisfaction,
absenteeism and turnover
with a new questionnaire:
PICTURE

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Abstract

Turnover and absenteeism are two behaviours of importance to organizations. Many determinants of these behaviours have been studied, but a complete model including both work factors and organizational factors has never been investigated. In this study it is hypothesized that organizational satisfaction and commitment, motivation and career opportunities determine turnover, while satisfaction with and commitment to the unit, motivation and role clarity determine absenteeism. These factors are in turn influenced by conditions of employment, career opportunities, perceived organizational support, job perceptions, the leader and work climate. This model is tested in the Royal Netherlands Army using a new questionnaire called PICTURE. Results show that with some small adjustments the model is supported. Implications and suggestions for further research are discussed.

Introduction

When people are asked why they behave in a certain way, they never give just a single reason for it. Not only is their behaviour determined by their wishes and wants, it is also influenced by opportunities given, situational constraints and other people present. These factors together influence the person and in that way determine the final behaviour. This is also the case with behaviours of employees in organizations. The productivity of employees is determined by the devices one has to work with, the colleagues and leaders surrounding the person, the motivation of the employee, and so on (Cascio, 1999; Dipboye, Smith, & Howell, 1994; Robbins, 2003). At the same time all these factors influence absenteeism and turnover in organizations. Absenteeism can be seen as every behaviour that keeps the employee away from the work situation or the failure to report to work (Dipboye, Smith, & Howell, 1994; Robbins, 2003). This behaviour is influenced by multiple factors, for example motivation, satisfaction and role clarity (Burton, Lee, & Holtom, 2002; Cooper, Dewe, & O'Driscoll, 2001; Dipboye, Smith, & Howell, 1994; Goldberg, & Waldman, 2000; Harrison, & Martocchio, 1998; Robbins, 2003; Sargent, & Terry, 1998). Turnover is understood as the complete and permanent withdrawal of employees from the organization (Kammeyer-Mueller, & Wanberg, 2003; Robbins, 2003). The withdrawal can be voluntarily or forced by the organization. This article focuses on voluntary withdrawal of the employee from the organization only. The decision to leave an organization is also influenced by multiple factors, for example motivation, commitment and career opportunities (Allen, 2003; Arzu Warti, 2003; Cascio, 1998; Ganesan, & Weitz, 1996; Jiang, & Klein, 2000; Mak, & Sockel, 2001; Robbins, 2003).

Although the influences on turnover and absenteeism have long been studied, a complete model containing all these influences on turnover and absenteeism has never been researched. It is possible to develop such a model on basis of the individual influences of factors found in earlier studies. In this hypothetical model, work and organizational factors determine satisfaction, commitment and motivation, which in turn influence turnover and commitment. Such a model has been used as the foundation of a new project of the Royal Netherlands Army, called PICTURE.

The Royal Netherlands Army and PICTURE

The Royal Netherlands Army consists of 34.000 employees, military as well as civilian personnel. Within this organization, the goal of personnel management is to continually improve the safety, health and well-being of employees. Before undertaking actions to improve the situation, one measures the opinions of employees about the current situation. This is done by psychologists of the Dutch Behavioural Science Service Unit. In the past, these psychologists randomly selected employees from the workforce, questioned them and generalised the findings to the whole organization. However, because selections of employees were used, not all employees within a unit were studied and consequently it was not possible to analyse the work situation for specific units. To get a better image of the work situation of work units, the Dutch Behavioural Science Service Unit developed a new project, PICTURE.

PICTURE

PICTURE stands for Periodic Information for Commanders Through Unit Specific Reports (free translation). All employees within a unit periodically fill out a questionnaire. In this way, it is possible to determine the well-being and perceptions of the work situation for every employee within the organization. Results are analysed for every unit and reported to the commander of the specific unit. Because the project describes the situation on the lowest level of the organization, it is possible with this project to point out and solve the problems within units.

The PICTURE questionnaire is based on a general assumed model of the Royal Netherlands Army. This model contains factors and variables of influence on turnover and absenteeism confirmed by previous research. However, even though individual influences on turnover and absenteeism are repeatedly researched, a complete model containing all influences on turnover and absenteeism has never been tested. This is the purpose of the present study.

The theoretical model

The theoretical model underlying PICTURE is presented in figure 1. In this model, it can be seen that turnover and absenteeism are determined by multiple factors. Some factors determine both turnover and absenteeism, while other factors determine only one of these. Besides that, the model shows what factors influence the determinants of turnover and absenteeism. These factors are divided in organizational factors and unit factors, which have different influences on turnover and absenteeism. All influences in the model can be seen as hypotheses to be tested and are described below.

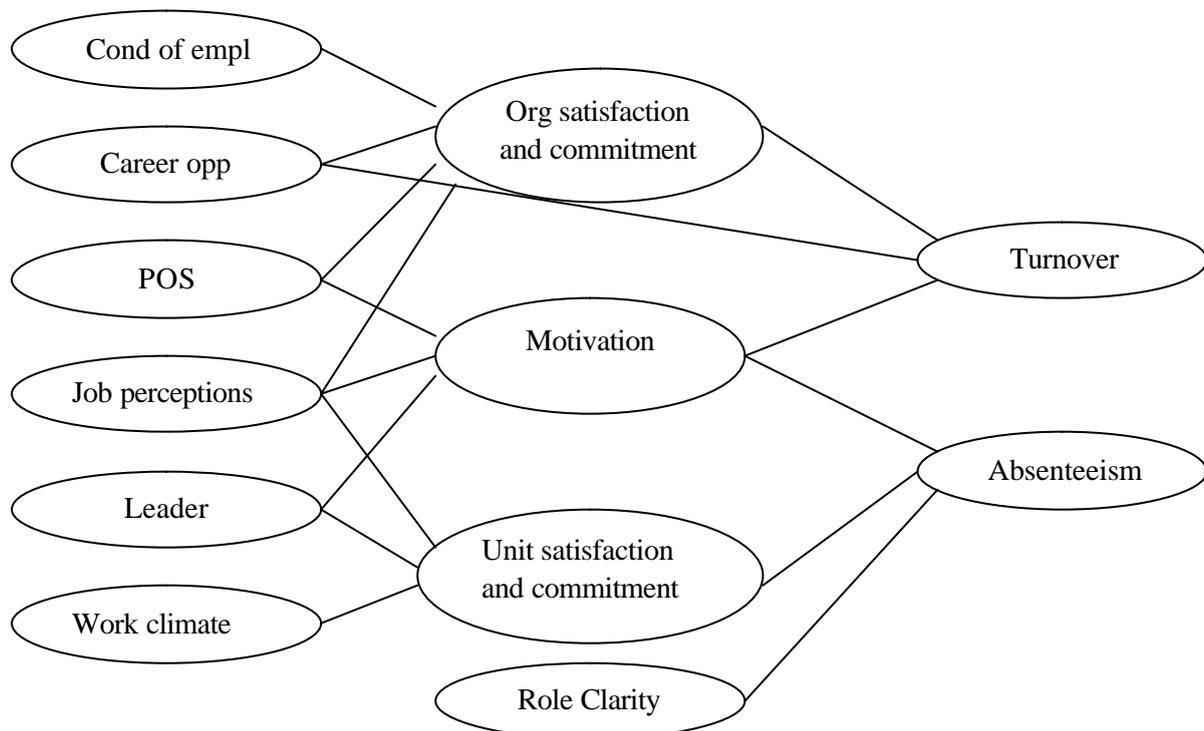


Figure 1. The theoretical model underlying PICTURE

Determinants of turnover and absenteeism

Motivation

In the theoretical model, turnover and absenteeism are both influenced by motivation. Motivation is defined as the processes that shape the intensity, direction and perseverance of employees to reach a certain goal. This reflects the way in which the persons themselves work effectively and experience positive feelings when they work effectively. When workers are very motivated, they take pleasure in

their jobs and the intention to leave the organization will consequently be very low. Besides that, a highly motivated employee enjoys the work to be done and will thus be less inclined to report ill (Burton, Lee, & Holtom, 2002; Ganesan, & Weitz, 1996; Harrison, & Martocchio, 1998; Mak, & Sockel, 2001; Robbins, 2003; S. N .Leadership & Organization Development Journal, 1998). The hypotheses considering the influence of motivation on turnover and absenteeism are therefore:

H1: Higher motivation of the employee will lower turnover.

H2: Higher motivation of the employee will lower absenteeism.

Satisfaction and commitment

Next to motivation, satisfaction and commitment of the employee will influence turnover and absenteeism. Satisfaction implies an emotional state reflecting a general attitude towards the object of satisfaction. Commitment can be defined as identification with the object of commitment and a strong belief in and acceptance of the goals and values of the object. The person has a desire to maintain membership and a willingness to exert effort on behalf of the object.

These two factors both influence turnover and absenteeism. However, a distinction must be made between organizational satisfaction and commitment and unit satisfaction and commitment.

Organizational satisfaction is a general attitude towards the work context and the organization as a whole. This satisfaction is determined by general work factors applying to every employee in the organization. Unit satisfaction, in contrast, can be seen as the attitude of the employee towards the daily work situation and is influenced by factors of the work context.

This distinction between the organization as a whole and the specific unit where the employee works is also made with commitment. Organizational commitment is defined as a general identification with the organization and influences general behaviours and decisions in relation to the organization. Unit commitment, on the other hand, is an identification of the worker with the unit and depends on the specific aspects of that work situation.

Organizational satisfaction and commitment are two factors determined by organizational factors and are hypothesized to influence only turnover. Satisfied workers are pleased with the work context and work conditions and prefer to stay with the organization. Besides that, when a worker strongly believes in the goals and values of the organization and feels committed to the organization, leaving this organization will not enter the mind (Allen, 2003; Arzu Warti, 2003; Dipboye, Smith, & Howell, 1994; Eby, Freeman, Rush, & Lance, 1999; Robbins, 2003; Sagie, 1998; Taris, Feij, Taris, & Claes, 1998). The two hypotheses here are thus:

H3: Higher organizational satisfaction of the employee will lower turnover.

H4: Higher organizational commitment of the employee will lower turnover.

Satisfaction with and commitment to the unit, in contrast, will influence absenteeism and not turnover. When a worker is not satisfied with the daily work situation, the attractiveness of reporting ill is larger. The decision to report ill will also be made easily when the employee does not feel obliged to come to work. The lower the commitment to the unit, the less obligation felt to exert effort on behalf of the unit and the higher absenteeism (Dipboye, Smith, & Howell, 1994; Eby, Freeman, Rush, & Lance, 1999; Harrison, & Martocchio, 1998; Robbins, 2003).

H5: Higher satisfaction to the unit will lower absenteeism.

H6: Higher commitment to the unit will lower absenteeism.

Career opportunities

Career opportunities are the last hypothesized influences on turnover. A career can be defined as a succession of multiple positions, jobs and occupations a person has during a worker's life. When employees are dissatisfied with the opportunities given, the person will look for another way to reach the highest position by, for example, transference to another organization. So, having enough career

opportunities in the organization is hypothesized to decrease turnover (Cascio, 1998; Jiang, & Klein, 2000).

H7: More career opportunities in the organization will lower turnover.

Role clarity

Next to unit satisfaction, unit commitment and motivation, absenteeism is also influenced by role clarity. This concerns having enough information about the responsibilities, objectives and correct behaviours to carry out the work properly and to reach goals. When the employee understands what is to be done in the job and how to fulfil this, the person enjoys the work more and experiences less stress. Having more pleasure in the job and less stress lowers the attractiveness of reporting ill. Therefore, heightening role clarity will lower absenteeism (Goldberg, & Waldman, 2000; Sargent, & Terry, 1998; Sutherland, & Cooper, 1992).

H8: Higher role clarity will lower absenteeism.

Determinants of organizational satisfaction and commitment

Organizational satisfaction and commitment are determined by general aspects of the organization. The first influences are the conditions of employment. These contain the salary, leaves, working hours and rank of the employee and are perceived by the employee as rewards for their efforts. When these meet their expectations, employees will be more satisfied with the organization and heighten their commitment in return (McLain, 1995; Wright, & Boswell, 2002).

H9: Better conditions of employment will heighten organizational satisfaction.

H10: Better conditions of employment will heighten organizational commitment.

The second influence on organizational satisfaction and commitment are career opportunities. When employees have many career opportunities, they will be more satisfied with the organization and heighten their commitment in return (Larsson, Holmqvist, & Sweet, 2001; Mak, & Sockel, 2001).

H11: More career opportunities will heighten organizational satisfaction.

H12: More career opportunities will heighten organizational commitment.

Perceived Organizational Support (POS) is the third influence on organizational satisfaction and commitment. POS stands for the global beliefs employees have concerning the extent to which the organization appreciates the efforts of the employees and cares about their well-being. When employees perceive a lot of organizational support, they will be more satisfied with the organization and more committed to the organization in exchange (Cuskelly, 1995; Eisenberger, Stinglhamber, Vandenberghe, Sucharski, & Rhoades, 2002; Stamper, & Johlke, 2003; Wright, & Boswell, 2002).

H13: Higher POS will heighten organizational satisfaction.

H14: Higher POS will heighten organizational commitment.

The last hypothesized determinant of organizational satisfaction and commitment are the job perceptions of the work itself. Employees develop, dependent on their experiences and capacities, specific perceptions of their tasks and jobs. In this way, a job can be perceived as exiting and meaningful or boring and useless. The organization is considered as the provider of the job and positive perceptions therefore will heighten the satisfaction with the organization. To give something in return, the employee will also heighten the organizational commitment (ten Brink, den Hartog, Koopman, & van Muijen, 1999; Pearson, & Chong, 1997; Podsakoff, MacKenzie, & Bommer, 1996; Vink, Brinkman, Siero, Boonstra, & Maas, 1996).

H15: Positive job perceptions will heighten organizational satisfaction.

H16: Positive job perceptions will heighten organizational commitment.

Determinants of unit satisfaction and commitment

While organizational satisfaction and commitment are determined by general aspects of the organization, unit satisfaction and commitment are influenced by specific work aspects. These contain leadership, work climate and, once again, job perceptions.

Leadership is understood as the actions undertaken by an appointed person to determine the roles and group activities of the unit, as well as the considerations given to the well-being and needs of employees. When a leader pays attention to the well-being of the employee and gives the needed directions, the employee will be more satisfied with the work situation and the unit. In addition, the employee will feel more appreciated and thus more involved in the unit (Fleishman, 1998; Howard, & Frink, 1996; Kammeyer-Mueller, & Wanberg, 2003).

H17: Positive leadership (more directive actions and more emotional support) will heighten unit satisfaction.

H18: Positive leadership will heighten unit commitment.

The second influence on unit satisfaction and commitment is the work climate. Work climate can be seen as the manner in which employees receive support and approval from the colleagues and are involved in the activities of the unit. When employees experience a positive and supportive work climate, they will be more satisfied with the unit and will feel more involved in the work unit (Cuskelly, 1995; Podsakoff, MacMenzie, & Bommer, 1996).

H19: A positive work climate will heighten unit satisfaction.

H20: A positive work climate will heighten unit commitment.

The last influences are the job perceptions of an employee. Even though the organization is perceived as the provider of the job, the unit determines the specific tasks an employee has to fulfil. Therefore, having positive perceptions of the tasks and thus the job in general will heighten unit satisfaction. To express gratitude towards the unit for these pleasant tasks, the employee will heighten the commitment to the unit (ten Brink, den Hartog, Koopman, & van Muijen, 1999; Pearson, & Chong, 1997).

H21: Positive job perceptions will heighten unit satisfaction.

H22: Positive job perceptions will heighten unit commitment.

Determinants of motivation

The factors responsible for the motivation of employees depend in part on employees themselves and in part on factors in the work situation. The factors in the work situation are POS, job perceptions and leadership. When employees have a high POS, they feel supported and respected by the organization. This makes them work even harder to show the received support is justified and will heighten their motivation (Mak, & Sockel, 2001; Stamper, & Johlke, 2003).

H25: Higher POS will heighten motivation.

The second influences on motivation are the job perceptions. When employees have positive job perceptions, they will enjoy fulfilling the tasks and thereby be motivated to do their jobs (Dollard, Winefield, Winefield, & de Jonge, 2000; Ganesan, & Weitz, 1996).

H23: Positive job perceptions will heighten motivation.

The third and last determinant of motivation is leadership. A leader can heighten or lessen the motivation of employees by giving feedback, support and directions. When the leader gives directions

the employee needs and supports his subordinates in times of trouble, their motivation will be heightened (Howard, & Frink, 1996; Koopman, 1992; Mak, & Sockel, 2001).

H24: Positive leadership will heighten motivation.

The present study

In this study, the formulated hypotheses are combined in one theoretical model. This model is tested using data from PICTURE. However, even though it has been assumed the factors in the model are measured with the questionnaire, this has never been confirmed. The first step in this study is therefore to determine the factor structure underlying the data with use of a method called Explorative Factor Analysis. After confirmation of the factors, reliabilities of the factors have to be studied. Only when the factors are confirmed by the factor analysis and reliably measured, it is possible to test the hypothesized model. This is done using the programme AMOS 4.1. Because the sample is very large, it is possible to split up the sample in two groups. When the test of the model shows adjustments have to be made, the adjusted model can be tested on the second sample.

After the model is examined and adjusted where necessary, a last question remains to be tested. The final model is tested and approved on base of data of the whole organization. However, it is possible that some aspects are important to some units, while the same aspects are insignificant to other units. Because both the administration and the report in the PICTURE project are on unit level, it is important to know whether the model applies equally to all units. This last question is also tested within AMOS 4.1 with the help of a test for significant differences between units.

Method

Participants

The sample in this study consisted of 1404 employees from ten units of the Royal Netherlands Army who filled in the questionnaire between September 2003 and January 2004. Of these, 1294 were men and 110 were women with ages ranging from 17 years to 65 years old. 1109 participants were military with a lifetime contract, 7 military had a short-term contract and 286 participants were civilian personnel. These participants were randomly divided in two samples of approximately 700 participants. This made it possible to test the model on the first sample, make adjustments when necessary and retest the model on the second sample.

Measures

To assess the factors in the model, the PICTURE questionnaire developed by psychologists of the Dutch Behavioural Science Service Unit was used. This questionnaire consists of 108 items about the factors in the theoretical model and some issues considering undesired behaviour, autonomy, work load, performance reviews, life on a barrack and demographic characteristics.

All factors of the theoretical model were measured with five point Likert type questions. The answers ranged from 'never' to 'always' or 'strongly disagree' till 'strongly agree', depending on the way the proposition was stated.

Conditions of employment are questioned with 5 items considering leave, working hours, rank and salary. An illustration is 'I can obtain permission whenever it suits me'.

Career opportunities. Surveyed with 6 items about education, career and development possibilities within the organization. An example is: 'The Royal Netherlands Army gives me sufficient education possibilities for my work'.

POS (Perceived Organizational Support). 8 Items about the perceived support and recognition by the organization and about the given opportunities by the organization to express ideas and participate in decision-making and within the organization. One item is: 'I am satisfied about the manner in which the unit treats me personally'.

Job perceptions. The perceptions were measured with 4 items about the excitement, variety, pleasantness and meaningfulness of the job. An illustration: 'I have variation in my work'.

Leadership. 10 self-report items about the behaviour of the commander in the unit, considering expertise, respect, openness and information. An example is: 'My direct leader is receptive to my ideas'.

Work climate. This was measured with 5 items considering the behaviour of colleagues, team work and new workers, for instance: 'Within our work unit we work well together to get the work done'.

Role clarity. 4 items about the information received to fulfil the tasks. One illustration is 'It is clear what is expected of me in my job'.

Motivation. The rating of motivation of the employee was based on a single item questioned, 'I am at this moment motivated to do my job'.

Satisfaction. Employees rated their satisfaction using two items, 1 item about the general satisfaction with the organization and 1 item about the general satisfaction with the unit. This was questioned with the next proposition: 'All things considered, I am as an employee satisfied about working for the Royal Netherlands Army (my unit)'.

Commitment. This included a three-item organizational commitment scale and a three-item unit commitment scale. An example is: 'I am glad I chose for the Royal Netherlands Army and not for another organization'.

Turnover. This was measured with 2 items, namely 'Are you lately considering looking for another job outside the Royal Netherlands Army?' and 'Did you apply the past year for another job outside the Royal Netherlands Army?'. The answer possibilities were 'yes' and 'no'.

Absenteeism. Employees were asked about their absenteeism the past twelve months with 2 items. These were 'How often have you reported ill the past twelve months?' and 'Have you been ill for a

period of at least two weeks during the past twelve months?'. The answer possibilities for the last question were 'yes' and 'no'.

There were no outliers or missing values present in the sample. Skewness and kurtosis measures showed all items were normally divided with skewness < 3.00 and kurtosis < 5.00 and therefore included in further analyses.

Explorative Factor Analysis with Varimax rotation was performed on 57 items assumed to measure the factors in the theoretical model. Eleven factors were extracted with an eigenvalue greater than 1.00. With a cut of .40 for inclusion of a variable in the interpretation of a factor, the eleven assumed factors were confirmed, with exception of motivation since this factor was measured with a single item. The distinction between satisfaction and commitment, however, was not found. Instead, factor analysis clearly showed one factor containing organizational satisfaction and commitment and another factor containing unit satisfaction and commitment. These two factors were further used in analyses, with organizational bond indicating organizational satisfaction and commitment and unit bond indicating unit satisfaction and commitment. All factors were formed using the Bartlett method in Explorative Factor analysis. Reliabilities of the factors are seen in table 1.

Name Factor	Number of items	Cronbach's Alpha
Conditions of employment	5	.6928
Career opportunities	6	.8768
POS	8	.9060
Job perception	4	.8260
Leader	10	.9202
Work climate	5	.8161
Role clarity	4	.7135
Organizational bond	4	.8371
Unit bond	4	.8800
Turnover	2	.5493
Absenteeism	2	.3722

Table 1. Cronbach's Alpha for every factor measured with PICTURE. A Cronbach's Alpha = .700 indicates a reliable scale.

As seen in table 1, turnover and absenteeism were not reliably measured. Absenteeism was therefore measured with a single item concerning the total number of absences the last twelve months. The unreliability of turnover caused by the nominal measurement level of the two items could not be improved and was therefore taken as a weakness of the model.

Procedure

The PICTURE survey can be completed by computer on the workplace of the participant. A psychologist from the Dutch Behavioural Sciences Service Unit first contacts a commander from a specific unit and explains what PICTURE is and how it works. The psychologist and the commander together determine when to start the questioning. Then the commander contacts all the employees from that unit and explains them how and when to fill out the questionnaire. The employees receive an email with a direct intranet link to the online survey so that they can simply click on the link to complete the survey. The commander makes sure every person completes the questionnaire by reminding them of the survey. This is supported by the psychologist through repeating to the commander after a week how many persons have answered the survey, so that he or she can urge employees to fill it out.

Data analysis

To test the theoretical model and all of the hypotheses simultaneously, structural equation modeling with a path analysis technique was used. All analyses were run by analyzing the correlation matrix using the maximum likelihood method in AMOS 4.1. The conventional means of assessing model fit in AMOS is the chi-square goodness of fit test, in which the null hypothesis is that the model fits the data. A significant probability value thus indicates poor model fit. However, using this test with large samples will lead to rejection of the model, as trivial deviations of the model from the data can be easily detected. Thus, when making decisions about model fit, the chi-square statistic was not used. Instead, model fit was measured using a variety of fit indices. The fit indices used included the

goodness-of-fit index (GFI), the adjusted goodness-of-fit index (AGFI), the comparative fit index (CFI), the Tucker-Lewis index (TLI) and the root mean square error of approximation (RMSEA). The GFI is a measure of the relative amount of variances and covariances in the original covariance matrix accounted for by the theoretical model. The AGFI adjusts the GFI for the degrees of freedom used in the chi-square test. The CFI and the TLI both compare the χ^2 of the theoretical model with a baseline model. The RMSEA takes into account the error of approximation in the population and determines how well the theoretical model with unknown parameter estimates fits the population covariance matrix if it was available. For the GFI, CFI and TLI, values above .900 are seen as indicative of a good model fit. For AGFI, a value above .850 and for RMSEA, a value under .08 indicate a good fit.

Results

The theoretical model to be tested stated that multiple work aspects determined satisfaction, motivation and commitment, which in turn determined turnover and absenteeism. However, factor analysis showed a distinction between satisfaction and commitment has to be replaced with organizational bond (considering organizational satisfaction and commitment) and unit bond (considering unit satisfaction and commitment). Therefore, the model to be tested has to be adjusted with conditions of employment, career opportunities, POS and job perceptions determining organizational bond and leadership, work climate and job perceptions influencing unit bond. Organizational bond is hypothesized to influence, together with the motivation of the employee and career opportunities the turnover of employees. Absenteeism is hypothesized to be caused by unit bond, motivation and role clarity. This model is presented in figure 2.

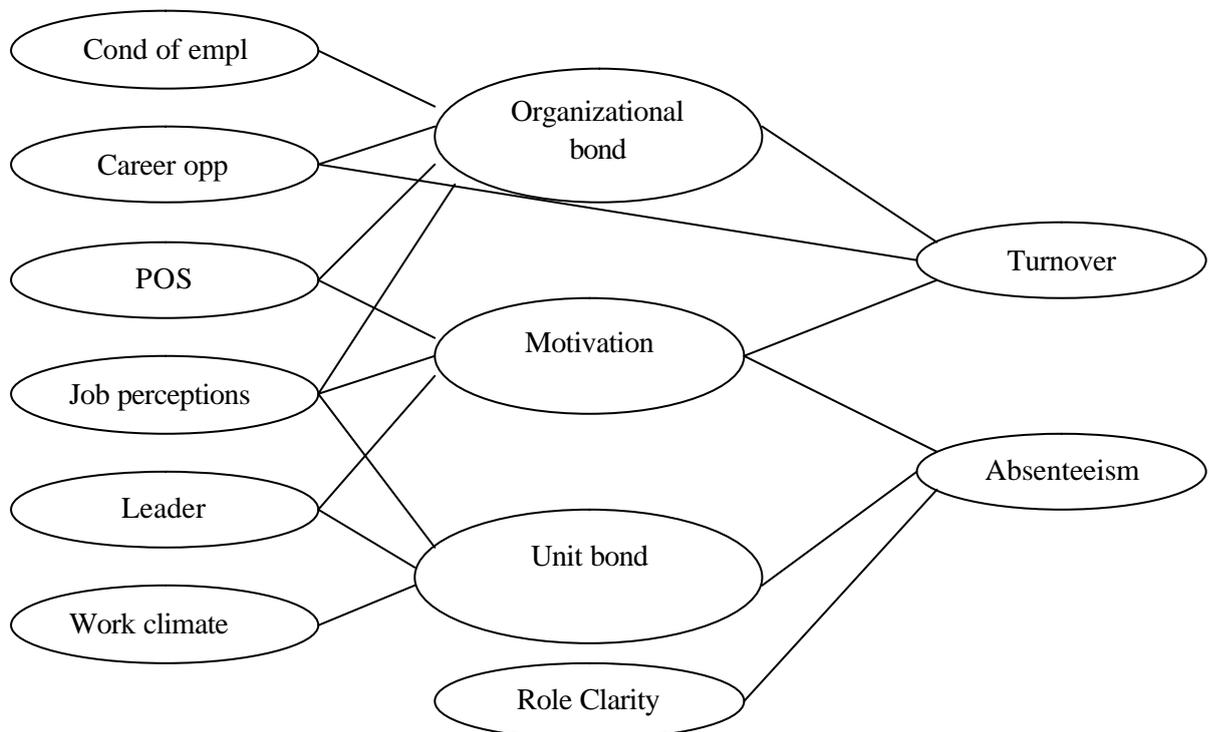


Figure 2. The hypothetical model after Explorative Factor Analysis

The chi-square test for this model was significant, $\chi^2(29, N = 683) = 357.400, p < .001$, and the fit indices for the model indicated a moderate fit (GFI = .932, AGFI = .817, CFI = .871, TLI = .706,

RMSEA = .129). Modification indices and standardized residual covariances indicated the model had to be adjusted by adding a relationship between POS and unit bond, a relationship between organizational bond and unit bond and a relationship between job perceptions and turnover. Figure 3 shows the standardized regression coefficients of the model found in sample 1.

As shown in the figure, supporting hypotheses 1 till 7, organizational bond, motivation and career opportunities significantly predicted turnover. Unit bond and motivation significantly influenced absenteeism, whereas the influence of role clarity on absenteeism was nonsignificant. Supporting hypotheses 9 till 25, conditions of employment, career opportunities, POS and job perceptions significantly predicted organizational bond, while POS, job perceptions and leadership significantly influenced motivation. Unit bond was significantly determined by leadership, work climate and job perceptions. In conclusion, results provided support for the hypothesized relations in the model with the exception of the relationship between role clarity and absenteeism.

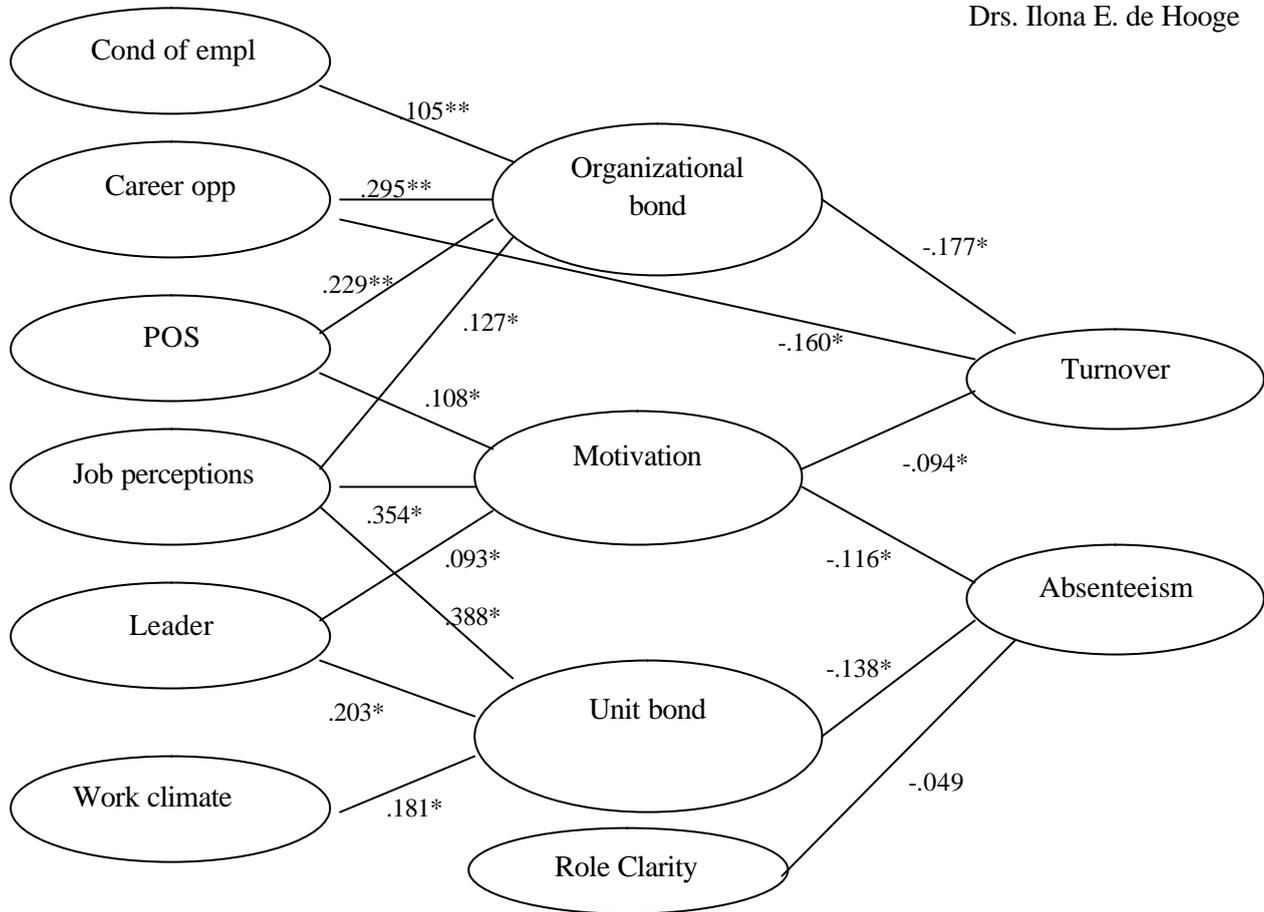


Figure 3. The tested model with standardized regression coefficients. The marked regression coefficients indicate a significant relationship (* $p < .05$; ** $p < .01$; # $p < .001$).

Adjusted model

On the basis of these results, a second model was tested, dropping the nonsignificant link between role clarity and absenteeism and adding direct paths from POS to unit bond, from organizational bond to unit bond and from job perceptions to turnover. The results of the test on de second sample suggested that this model fits the data well, $\chi^2(22, N = 721) = 60.044, p < .001, GFI = .985, AGFI = .956, CFI = .985, TLI = .962, RMSEA = .049$. The chi-square value was large, but because the sample was large and the other fit indices were very good, the model was accepted. The relationships with the standardized regression coefficients for sample 2 are found in figure 4.

As shown in figure 4, all hypothesized relationships are significant, with the exception of the relationship between leadership and unit bond. Supporting hypotheses 9 till 16, conditions of employment, career opportunities, POS and job perceptions together determine organizational bond.

Motivation is influenced by POS, job perceptions and leadership, while work climate, job perceptions, POS and organizational bond determine unit bond. These significant relationships support hypotheses 19 till 25. Supporting hypotheses 1 till 7, organizational bond, together with motivation, career opportunities and job perceptions, influence turnover and unit bond and motivation determine absenteeism.

The results show that more variance is explained in unit bond than in other dependent factors ($R^2 = .599$). Low-to-moderate levels of variance are explained in organizational bond ($R^2 = .346$) and motivation ($R^2 = .237$), whereas low levels of variance are explained in turnover ($R^2 = .135$) and absenteeism ($R^2 = .060$).

This final model suggests that the relationship between leadership and unit bond is nonsignificant and therefore should be dropped from the model. This remains to be tested in further studies. When testing the final model for all units separately, this relationship is not dropped from the model.

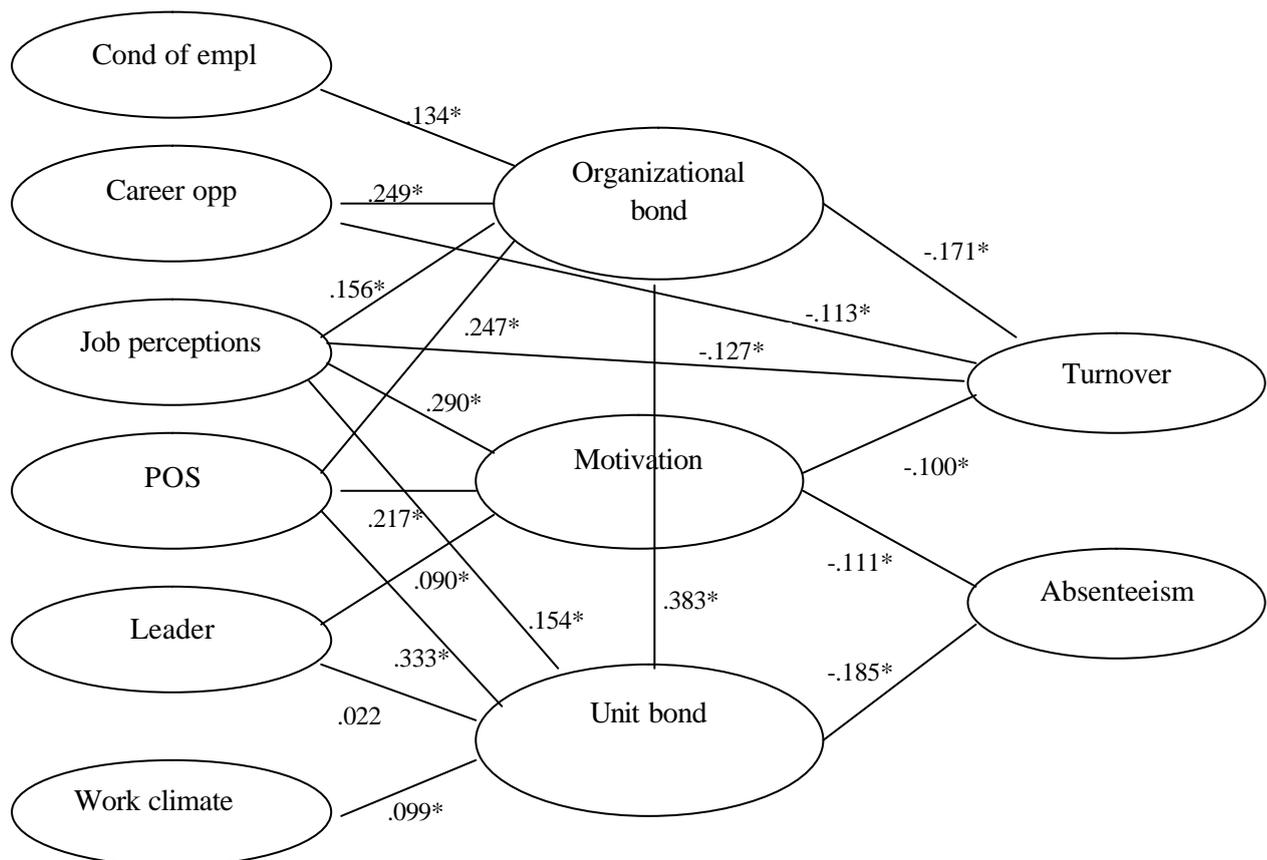


Figure 4. The adjusted model with standardized regression coefficients. The marked regression coefficients indicate a significant relationship (* $p < .05$; ** $p < .01$; # $p < .001$).

Subgroup analysis

To explore the validity of the model for separate units in the Royal Netherlands Army, seven units of the sample were used. These units were randomly distributed across the Royal Netherlands Army and contained between 107 and 226 participants. To test the hypothesis that the model applies to all units, the hypothesis is tested that the factor loadings of the model are equal across units. This model constraining factor loadings to be equal across all samples produced a χ^2 (262, N = totaal pp) = 407.559, $p < .001$, GFI = .943 , AGFI = .899 , CFI = .960, TLI = .942 , RMSEA = .022. Therefore, one can preserve the hypothesis that the factor loadings are invariant, and thus can conclude that the model can be generalised across samples. Results of all three tests are seen in table 2.

Model	DF	χ^2	GFI	AGFI	CFI	TLI	RMSEA
Proposed (sample 1)	29	357.400	.932	.817	.871	.706	.129
Adjusted (sample 2)	22	60.044	.985	.956	.985	.962	.049
Across samples	262	407.559	.943	.899	.960	.942	.022

Table 2. Fit indices for proposed and adjusted sample, with row three containing the results of the model test across samples.

Discussion

The results of this study show that the theoretical model underlying PICTURE is generally supported. The model shows that organizational bond, determined by conditions of employment, career opportunities, POS and job perceptions, influences together with career opportunities and job perceptions turnover. Motivation, influenced by POS, job perceptions and leadership, has a relationship with both turnover and absenteeism. Unit bond, finally, is determined by organizational bond, job perceptions, POS, leadership and work climate. This factor also has a relationship with absenteeism.

A disappointing finding involved the relationship of role clarity to absenteeism. Even though earlier research found a significant influence of role clarity on absenteeism (Goldberg, & Waldman, 2000; Sargent, & Terry, 1998; Sutherland, & Cooper, 1992; Taris, Feij, Taris, & Claes, 1998), this study did not find a significant relationship. A possible explanation is that the difference in measurement level prevents a clear relationship between role clarity and absenteeism. While absenteeism was measured with only one question about the number of absences in the past twelve months, role clarity consisted of information received in every day experiences. Besides that, to have a significant effect on absenteeism, role ambiguity must be very high. As this seldom occurs in organizations, chances of finding such a significant influence on absenteeism will be very small. Therefore, finding a direct relationship between role clarity and absenteeism is difficult.

The tests of the model presented in figure 1 revealed three notable findings. First, job perceptions directly influence turnover. When job perceptions are positive, the employee will enjoy work and not consider leaving the organization. In contrast, when the job is not fulfilling the expectations of the employee and the worker has negative perceptions of the job, the person will start looking for another, more interesting job and thus leave the organization.

Second, it was also discovered that POS is a direct determinant of unit bond and thereby removes the influence of leadership on unit bond. The perceived organizational support makes employees feel respected and appreciated by the organization. This directly influences the organizational bond of the employee with the organization. However, POS is usually communicated by the persons representing the organization. For employees, this is mostly their leader. Thus, the support employees perceive from their leader is seen as support from their organization as well as support from their unit. In this way, it is possible for POS to influence organizational bond as well as unit bond. This was also found in a study of Eisenberger, Stinglhamber, Vandenberghe, Sucharski and Rhoades (2002). Here, a distinction was made between perceived supervisor support (PSS) and perceived organizational support (POS). PSS implied the degree to which supervisors valued the contributions of the employee and cared about the well-being of the employee. POS was the same behaviour showed by the organization. The results showed PSS positively influenced POS and this influence was larger when supervisors had higher perceived organizational status. That is, the more supervisors reflect the organization according to the employee (reflected by the perceived organizational status of the supervisor), the more difficult it is to disentangle PSS and POS. Therefore, it is important to make a clear distinction between supervisor support and organizational support to study the influence on organizational bond and unit bond. Since organizational factors determine organizational bond and specific work factors determine unit bond, it is hypothesized that POS will influence organizational bond while PSS will influence unit bond. Further research is needed to support this presumption.

The third and last notable finding is the influence of organizational bond on unit bond. Clearly, the satisfaction with and commitment to the organization positively influences the satisfaction with and commitment to the unit. This result is consistent with positive relationships found between organizational satisfaction and commitment and satisfaction and commitment to the unit in earlier research (Cuskelly, 1995; Dipboye, Smith, & Howell, 1994; Forsyth, 1999; Robbins, 2003). Cuskelly (1995), for example, found a positive influence of group cohesion on organizational commitment. The more volunteers of a sports committee felt commitment to the work group, the higher their organizational commitment.

Thus, attitudes towards the organization and the unit are not completely unrelated. However, the direction of influence is still under discussion. Where Cuskelly found a direct influence of group commitment on organizational commitment, in this study organizational bond of the employee determines unit bond. When employees have a positive attitude towards the organization as a whole, this spreads towards the unit bond so that employees will feel more committed and satisfied with the unit. Consequently, for organizations to improve the work attitudes and turnover and absenteeism of their employees, more research is needed on the direction of the relation between organizational bond and unit bond.

Suggestions for future research

Next to the aspects considered above, results of this study suggest more research is needed considering extensive models and the distinction between organizational factors and unit factors. Concerning extensive models, there is a need in organizational research to develop and study models with multiple relationships. Not only is it possible to explain more variance of, for example, turnover and absenteeism, studying large models also shows what influences are modified or nonsignificant with other factors present. This, for example, shows that the influence of leadership on unit bond disappears when POS is added to the model. When multiple relationships are studied in a single model, interactions and homoscedasticity emerge and a full picture of all important factors becomes visible. Second, this study also shows that there is a need for future research to split up organizational factors and unit factors. Not only have organizational bond and organizational factors different causes than unit bond and unit factors, the factors also differ in their consequences. While organizational factors influence relative large and important decisions for the employee, like turnover, unit factors determine relative small decisions like absenteeism. In order to determine the causes and influences of these and other factors, future research needs to make the distinction between organization and unit and study the different consequences of these factors.

Implications for practice

The findings of this study are relevant to several areas of practice. First, the results support the use of PICTURE as a tool for personnel management. The PICTURE project and the actions undertaken to improve work situations are based on the theoretical model. This study justifies the use of the model and with that the use of PICTURE by organizational psychologists of the Dutch Behavioural Science Service Unit to measure the work situation.

Second, the study suggests a means through which employers can reduce turnover and absenteeism. By giving attention to the organizational factors, motivation, career opportunities and job perceptions, employers can reduce turnover. Improvements of unit factors and the motivation of employees by means of job perceptions, POS and unit factors will lower absenteeism. Even though this is easier said than done, this study gives a first direction to employers wanting to lower turnover and absenteeism.

Limitations

Several factors could limit the generalizability of the results. These include the characteristics of the sample and features of the study. Concerning the characteristics of the sample, all participants were employees of the Royal Netherlands Army. It is possible that this sample diverts from employees in other organizations on factors measured. For example, it is possible that the influence of POS on organizational bond, motivation and unit bond is a specific characteristic of the hierarchical structure of the army and the importance of the organization to the military. It is therefore not possible to generalize findings to all organizations in and outside the Netherlands.

The major drawback concerning the features of the study was that all factors were measured at the same point in time with a self-report questionnaire. This clearly limits the degree to which it is possible to make causal inferences. Besides that, this measurement method also makes common method variance possible. When data is taken from a single source, one often expects to find inflated relationships among the factors. It is thus possible that method variance inflated the found relationships between the factors. For these two reasons, a longitudinal research with appropriate time

lags and measuring actual turnover and absenteeism is needed to support the model found in this study.

Conclusion

In conclusion, the findings in this study are consistent with the findings of the separate influences of turnover and absenteeism. Next to individual influences on both turnover and absenteeism, this study showed that organizational factors largely determine turnover, while unit factors mostly determine absenteeism. Overall, it appears that the model provides valid and useful insights into the way turnover decisions and absenteeism decisions are made.

The results of this study have important implications for both researchers and practitioners. With respect to organizational researchers, it appears that multiple influences on turnover and absenteeism must be combined to develop the full picture. Only then is it possible to determine which factors influence the turnover and absenteeism decisions of employees. With that, one needs to take into account the distinction between organizational factors and unit factors, which exert different influences. With respect to practitioners, the results suggest using the PICTURE questionnaire is a good manner to inventory the work aspects. In that way, it is possible to point out the problems within units, improve the work situation and thereby reduce turnover and absenteeism.

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