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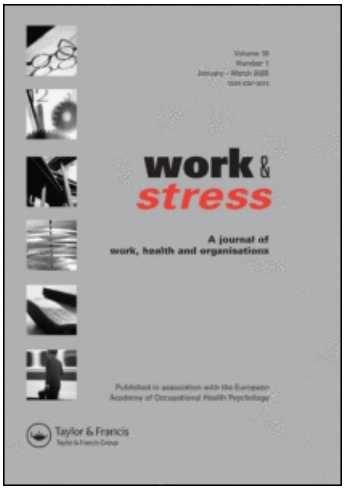

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Workforce size and work-related role stress

Inez Dekker[a]; Julian Barling[a]
[a] School of Business, Queen's University, Kingston, Ontario, Canada

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Workforce size and work-related role stress

INEZ DEKKER and JULIAN BARLING*

School of Business, Queen's University, Kingston, Ontario, Canada K7L 3N6

Keywords: *Workforce size; Role stress; Organizational support.*

This paper examines the relationships between workforce size and four work-role stressors, along with two variables that are proposed here to mediate these relationships: objective organizational support and perceived organizational support. A total of 112 clerical workers in organizations of 1-500 employees participated in the study. Workforce size was positively associated with role ambiguity, role conflict, quantitative and qualitative role overload, and objective organizational support; and it was negatively correlated with perceived organizational support. Partial correlations were then computed between workforce size and role stress, controlling sequentially for objective and perceived support. The relationships between workforce size and the four role stressors remained significant when objective support was controlled. However, the corresponding relationships were non-significant after partialling out the effects of perceived organizational support, which suggests that the effect of workforce size on role stressors is indirect, and a function of perceived organizational support.

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1. Introduction

A large amount of research has been carried out into the nature, antecedents and outcomes of work stress (Straw 1984). One of the primary components of work stress is *role stress*, which has been conceptualized throughout stress research as having three independent dimensions: role ambiguity, role conflict and role overload (Kahn *et al.* 1964). This conceptualization has been shown to have greater statistical and theoretical support than a general role-stress, single-factor model (Fisher and Gitelson 1983, Jackson and Schuler 1985, Kelloway and Barling, 1990). Despite the extensive research that has been conducted to isolate the antecedents of these role-stress dimensions, the effect of organization size as a predictor has been largely ignored. There is a good reason to expect that an employee's experience of work in a small organization will be qualitatively different from his or her experience in a large organization (Jackson *et al.* 1989), and that this difference will be reflected in role stress.

Several studies have investigated the relationship between an organization's size and its structural and contextual characteristics (Agarwal 1979 a, Blau and Schoenherr 1971, Hall *et al* 1967). In general, the results of these studies have been inconclusive and frequently conflicting. This ambiguity may well stem from a failure to differentiate between the several dimensions of organizations that are used to reflect the scale of company operations. Several alternative measures exist, but three in particular (number of employees, total assets and total dollar sales) have been widely accepted as valid indicators of size (Agarwal 1979 a, Kimberly 1976). Overall, 'number of employees' continues to be the measure most often used by researchers who are investigating effects of organization size (Agarwal

*To whom correspondence should be addressed, at: School of Business, Queen's University, Kingston, Ontario, Canada K7L 3N6.

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1979 b, Blau and Schoenherr 1971, Kimberly 1976): it was chosen for the present study as the most appropriate measure in relation to role stressors.

There has been some study of the effects of organization size on psychological outcomes (Hodson 1984, Indik 1963, 1965, Ingham 1967, Payne and Mansfield 1973, Porter and Lawler 1965, Snoek 1966, Talacchi 1960), but only Snoek (1966) was concerned with the relationship between organization size and work-role stressors. He examined the relationships between job-related tension, organization size (as regards number of employees), and role-set diversity in a national sample. Organizations were categorized as 'small' (500 or less employees) or 'large' (more than 500 employees). 'Job tension' was found to be more common in large organizations, and it was concluded that both the level of role-set diversity and the level of supervisory responsibility accounted for this variation. Snoek posited that workers in larger companies experience a greater diversification of role-sets, and that there are 'more supervisors in large than in small companies' (Snoek 1966). However, the dichotomy he used to denote organization size ignores the differential conditions that may be found *within* these groups, and thus the assumption of increased bureaucratization as a characteristic of larger companies has been challenged (Hall *et al* 1967).

Although it is widely recognized that management of a small business enterprise involves a different set of experiences, risks and needs to the management of a large organization (Birch 1987, Kao 1984, Ryan 1989), most recent psychological research has neglected to examine the effects of these differences on employee experience in small businesses. Since size predicts a number of basic organizational characteristics (Jackson *et al.* 1989), it should be recognized as a potential marker variable for many facets of work experience. To understand these effects of size difference, research must explicate the organizational processes that form the link between organization size and psychological outcomes. Simply identifying a significant relationship between organization size and role stress would contribute little to an understanding of how structural characteristics are translated into work experience. In the present study, it is first assessed whether a relationship indeed exists between organization size and work-role stressors, and then the two hypotheses that may account for this relationship are tested. Objective organizational support and perceived organizational support are proposed in this paper as variables that mediate the relationship between workforce size and role stress.

The antecedents and characteristics of role stress have already been identified (Fisher and Gitelson 1983, Kahn *et al.* 1964, Schaubroeck *et al* 1989) and using these it was possible to make differential predictions relating to the size of the organization. *Role ambiguity* was originally defined by Kahn (1974, p. 426) as 'the discrepancy between the amount of information that a person has and the amount he needs to perform his role adequately'. This is expressed in the uncertainty felt by employees who are rarely sure if their work performance is satisfactory, because job descriptions and expected performance standards are either not provided, change rapidly, or are too vague to interpret with certainty. To stay competitive, a small business has to display flexibility, and it expects the same from its employees. In these cases, clear divisions and explication of roles and functions are rarely provided. This may contribute to the role ambiguity experienced by employees in small organizations. Thus, organizational size was predicted in the present study to be negatively correlated with ambiguity.

Role overload includes two dimensions (Kahn 1974). First, having a greater amount of work to do at one time than can reasonably be carried out by one person is a classic example of *quantitative overload*. Second, the experience of being inadequately prepared to perform the expected job due to insufficient training or resources, or unreasonably high standards of performance, typifies *qualitative overload*. Small businesses tend to operate

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'close to the line', depending on the flexibility of staff members to cope with periodic extraordinary job demands. The fact that small businesses have inadequate personnel and little 'spare time' means that their training and orientation may be less thorough than in large organizations. It was expected, then, that both quantitative and qualitative role overload would be negatively related to the size of an organization.

Role conflict is experienced when conflicting demands are made upon an individual by two or more persons whose roles are interdependent within the organization (Kahn 1974). The less complex structure that exists in smaller organizations may be expected to produce fewer conflicting demands on the individual worker. The nature of large organizations, on the other hand, predicts that an employee's role will interlink with several other role-sets, thus providing more opportunities for conflict to develop (Kahn *et al.* 1964, Snoek 1966). For these reasons, role conflict was expected to be positively correlated with organization size.

If indeed size is associated with role stress, it would be important to uncover the reason(s) for such a relationship. Larger organizations are generally able to offer more benefits ('benefits' in this context are taken to mean pensions, sick leave and dental plans, and so forth) to their employees (Jackson *et al.* 1989, Miller 1992, Zipp 1991). Smaller businesses lack the numbers of employees to make these benefits feasible, the resources to provide them, or the personnel to administer them. The number of benefits offered to employees and the presence of clearly specified personnel policies can be conceptualized as *objective organizational characteristics* that provide tangible support for employees. For the present study, the number of benefits and 'worker-oriented' policies offered by organizations was expected to be positively correlated with the size of the workforce.

Perceived organizational support is a concept that reflects the extent to which employees perceive their contribution to be valued, and their personal needs considered, by the organization. Perceived organizational support is positively related both to attitudinal and behavioural measures of affective attachment, and to expressed affective and calculative involvement in the organization, as well as to innovation on behalf of the organization (Eisenberger *et al.* 1990). However, little is known regarding the organizational factors that contribute towards perceived support. Eisenberger *et al.* (1990) have suggested that benefits provided by the organization, if perceived as discretionary rather than negotiated or mandatory, may enhance perceived support as they may signify positive regard of the employee by the company. Thus, the authors predicted that objective support characteristics would be positively correlated with perceived support. However, it was also anticipated that this relationship would be moderate since some employees may lack formal benefits whilst still experiencing some level of perceived support due to the organizational climate and personal relationships within the organization.

Employees who enjoy a comprehensive benefit package, or feel that the organization for which they work takes their personal needs into consideration (perceived support), would be less likely to experience role ambiguity or quantitative or qualitative role overload. Therefore, it is proposed here that workforce size exerts an indirect influence on these role stressors through perceived organizational support and objective organizational support, which were predicted to be negatively correlated with role ambiguity and quantitative and qualitative role overload. Since role conflict is more closely related to the structure of the organization itself rather than to individual job characteristics, it was not expected that either perceived or objective organizational support of the individual would be related to role conflict.

In summary, the present study examines the relationship between organization size (as designated by the number of employees) and four role-stress dimensions (ambiguity, quantitative overload, qualitative overload and conflict). In addition, the possibility that

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this relationship is mediated by objective organizational support and perceived organizational support is also examined.

2. Method

2.1. *Subjects*

A total of 334 questionnaires were distributed to full-time, non-unionized, clerical employees of 69 independent business organizations. The organizations included wholesale and retail firms, manufacturing and service organizations, professional offices, hospitals and newspapers. Of these, 108 usable questionnaires were returned (32% response rate); 91% of the respondents were female, and 70% were married. The respondents' mean age was 35 years (SD = 9), they had been working for their organization for an average of 7 years (SD = 7), and their average number of years spent in education was 14 (SD = 2).

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2.2. *Measures*

Intercorrelations of the study variables are given in Table 1.

Organizational size was determined by the number of employees, as reported by the respondents. Since all organizations in the study were independent (that is, they were not branch offices or outlets for larger companies), the size variable refers to both plant and company size. The distribution of respondents by size of organization was skewed towards smaller companies, with one-third of respondents working for businesses of less than 10 employees, one-third working for organizations of 10–150 employees and the remainder working for businesses of 151–500 employees.

Objective organizational support was measured using a list of 17 questions relating to possible benefits and services. The questionnaire had been compiled for this study to reflect the variety of resources provided by organizations, and covered the general areas of opportunities for advancement ('Do you have the opportunity for promotion within your company?'); benefits offered ('Does your employer offer you a pension plan?'); and items that directly benefit only some of the employees ('Does your employer offer confidential access to a substance-abuse programme?') The full list of questions relating to objective resources was as follows:

Does your employer have a personnel or human resources department?
Do you have the opportunity for promotion within the company?
Are conditions for promotion clearly specified?
Does your employer offer you a pension plan?
Does your employer have a sick-leave policy?
Does your employer offer a dental policy?
Does your employer offer or subsidize child-care?
Does your employer offer personal-leave days?
Does your employment allow a flexible work schedule?
Do you have a written job description?
Does your employer have a formal grievance procedure?
Does your company have a formal harassment policy?
Does your place of work have a designated employee lounge and/or lunchroom?
Does your employer promote opportunities for you to upgrade your skills through training?

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Table 1. Intercorrelations and descriptive statistics on the study variables[a]

		M	SD	Alpha	1	2	3	4	5	6	Size/ objective[b]	Size/ perceived[c]
1.	Organization size	132	175·00	—								
2.	Objective support	34·05	7·87	0·84	58**							
3.	Perceived support	72·31	22·09	0·95	−31**	12						
4.	Ambiguity	13·99	0·89	0·81	31**	−06	−58**			0·37**	0·16	
5.	Conflict	27·36	11·80	0·87	25*	11	52**	39**		0·17*	0·11	
6.	Quantitative overload	20·90	10·02	0·88	31**	01	−44**	44**	65**		0·35**	0·20
7.	Qualitative overload	11·72	4·81	0·57	23**	04	−60**	52**	58**	59**	0·22*	0·06

[a] Decimal points omitted from correlation matrix.
[b] Partial correlation controlling for objective support.
[c] Partial correlation controlling for subjective support.
* $p < 0·05$; ** $p < 0·01$.

Does your employer provide confidential access to a substance-abuse treatment programme?
Does your employer provide access an Employee Assistance Programme?
Do you receive more than 10 paid-leave days per year (excluding statutory holidays)?

The total number of items checked from this group provide an indicator of objective organizational support. Subjects responded to these items with a 'yes' (scored 3), 'don't know' (2) or 'no' (1) answer. One item ('Does your employer offer or subsidize child care?') was removed from the analysis because this benefit was not offered to any of the respondents at their present jobs.

In a supplementary sample ($n=20$), the above scale was found to be a valid indicator of employee benefits when self-report responses were compared with the same information supplied by a company official ($r=0{\cdot}74$, $p<0{\cdot}01$).

Perceived organizational support was reflected using Eisenberger *et al.*'s (1986) 16-item scale, which measures the extent to which employees feel their efforts are appreciated and valued by their employer. Respondents were required to answer on a seven-point scale, from (1) 'strongly agree' to (7) 'strongly disagree'. This scale has been shown to be a unidimensional measure of perceived organizational support (Shore and Tetrick 1991).

Role ambiguity was assessed using the six-item scale developed by Rizzo *et al.* (1970). Answers were given on a seven-point scale, from (1) 'strongly agree' to (7) 'strongly disagree', with a high mean score indicating high role ambiguity. Role conflict was assessed using Rizzo *et al.*'s (1970) eight-item scale. Answers were given on the same seven-point scale as used for the role ambiguity scale, with a high mean score indicating high role conflict.

Role overload has been assessed in past research using a variety of scales; these scales frequently had few items and only poor to moderate reliability (Beehr *et al.* 1976, Kelloway and Barling 1990). In addition, whilst past research has noted the theoretical distinction between the quantitative and qualitative dimensions of overload, little effort has been made to develop an overload scale that fully investigates both dimensions. The scale created for the present study had 10 items and included: the three-item scale developed by Beehr *et al.* (1976), two items from Schaubroeck *et al.* (1989), and five items developed especially for this study. Answers were given on a seven-point scale, from (1) 'strongly agree' to (7) 'strongly disagree', with a high mean score indicating high role overload. Exploratory factor analysis of the items revealed two distinct factors that corresponded with the dimensions of quantitative overload (six items) and qualitative overload (four items) (see Table 2). Given the theoretical and statistical support for two separate factors (Kahn 1974), these dimensions were treated as such in the subsequent analysis.

3. Results

Workforce size was correlated with role ambiguity ($r=0{\cdot}31$, $p<0{\cdot}01$), role conflict ($r=0{\cdot}25$, $p<0{\cdot}05$), and both quantitative ($r=0{\cdot}31$, $p<0{\cdot}01$) and qualitative ($r=0{\cdot}23$, $p=0{\cdot}05$) role overload. Workforce size showed a substantial positive correlation with objective support ($r=0{\cdot}58$, $p<0{\cdot}001$), but a significant negative correlation with the subjective perception of organizational support ($r=0{\cdot}31$, $p<0{\cdot}01$).

To ascertain the possible mediating roles of both objective and perceived organizational support in the relationship between organization size and role stressors, each of these two variables was sequentially partialled out of the workforce size–role stressor relationship. If the previously significant relationships are found to be not significant, then the mediating role of the partialled variable is suggested. After partialling out the effects of the objective

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Table 2. Rotated factor matrix for role overload scales

Items	Factor 1	Factor 2	h^2
Quantitative scale			
I often have to arrive early or stay late to get my work done	0·08	0·15	0·80
I often have to work through my breaks to complete my assigned workload	0·85	0·12	0·73
It often seems like I have too much work for one person to do	0·75	0·08	0·57
I sometimes have to take work home with me to complete my assigned workload	0·75	0·35	0·68
I am given enough time to do what is expected of me on my job	0·61	0·49	0·61
I have too much to do to do everything well	0·58	0·52	0·61
Qualitative scale			
I have received adequate training to perform my job properly	−0·10	0·76	0·59
The amount of work I have to do is fair	0·23	0·75	0·62
The performance standards on my job are too high	0·35	0·53	0·40
People who I work with are given less work to do than I am	0·29	0·35	0·20

characteristics, all four correlations were still significant. In contrast, none of the relationships between workforce size and role stressors was significant after partialling out the effects of perceived organizational support (see Table 1).

4. Discussion

Despite the fact that several of the correlations were counter to those predicted, the results nevertheless support the consideration of size as an important predictor of role stress. All four role-stress measures (ambiguity, quantitative overload, qualitative overload and conflict) were positively correlated with the size of the organization. The correlation between organization size and role conflict supports the role-set model of Kahn *et al.* (1964), in which potential for conflict increases with the number of role-sets an employee must deal with in the course of his or her work. The unanticipated positive relationship of workforce size to role ambiguity and quantitative and qualitative role overload suggests that the organization size–role stress relationship is mediated by factors other than the availability of tangible rewards (benefits): this is a possibility that should be investigated in future research.

The positive relationship found between workforce size and objective support is consistent with the observed capabilities of businesses to provide incentives to their employees (Jackson *et al.* 1989, Miller 1992, Zipp 1991). Larger organizations offer more benefits, in order to increase efficiency and in the hope of securing the loyalty and commitment of their members. However, the lack of a significant relationship between the provision of benefits and the perception of organizational support suggests that employees do not generally regard such company-wide policies as indications that the organization values their individual efforts. Eisenberger *et al.* (1990) suggested that discretionary benefits that address individual needs, and which are not perceived as mandatory, would enhance perceived support. This hypothesis was not supported in the present results. Nevertheless, the enhancement of perceived support is clearly a desirable outcome, but is apparently not

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achieved through increases in benefits. Whether or not organizational conditions will enhance this perception is an empirical question that awaits further investigation.

Of particular interest is the negative relationship found between workforce size and perceived organizational support. Persons working in larger companies feel less valued than those working in smaller companies. Although it is tempting to explain this relationship in simplistic terms as alienation and/or depersonalization, this approach may not help future research.

The results of the correlational analyses, in which perceived organizational support was partialled out, provide strong evidence for the mediating role of this type of support. In other words, workforce size is a marker for employees' perception of being individually valued in the company, which is itself associated with lower levels of experienced work stress. However, caution must be used in the interpretation of these results as the relationship could conceivably be bidirectional. It canot be determined from this study whether perception of support is influenced by role stress, or if the experience of role stress is moderated by the perception of support. It could be that both measures are influenced by a third, unidentified organizational variable: explication of this relationship awaits further research efforts.

The main focus for future research into the relationships between workforce size and role stressors must be the explication of the organizational processes that mediate these relationships. The present study has examined the contributions of objective organizational support and perceived organizational support to these processes, and the results suggest that company benefits and worker-oriented company policies do not mediate this relationship. Instead, the role of perceived organizational support in transmitting the influence of workforce's size on role stressors is identified.

Research in this area could benefit from further consideration of the indirect relationships that exist between organization size and work experience, as well as from a multidimensional approach to the concept of size. Additional independent measures representing scale of operations (such as total assets, total sales or output, physical capacity, and technological or capital intensity) should be incorporated. This latter suggestion is not to detract from 'number of employees' as an index of organizational size; instead, it recognizes that this is one of several dimensions that should be considered and theoretically justified in future research. Also, the notion of viewing role overload as bidimensional was supported by the factor analyses, and future research should assess these two overload aspects separately.

Since the present study included only clerical workers, future investigations should examine the possible effects of organization size on different groups of workers (for example, management or sub-managerial groups; Porter and Lawler 1965). Gender differences should also be considered; this was not done in the present study due to the preponderance of female subjects. The restricted size range in the present study also limits the generalizability of the findings. To understand the effects of organizational size on work-role stress it will be necessary to include a fully representative sample of organization size.

Finally, the authors wish to emphasize the importance of further study relating to workers' experience in small organizations. The North American 'love affair' with big business has influenced organizational research to the extent that the term 'organization' is now taken to mean 'large organization'. The present study has demonstrated that the processes affecting the experience of work-role stressors vary with the size of the companies (ranging here from 1 to 500 employees). This can be seen as the first step in an exploration of the effects of company size on employee experience of role stress. Finally,

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future research should look into the organizational and psychological processes that mediate the relationship between organization size and other psychological outcomes.

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