

Field Study

The Effect of Globalization on Employee Psychological Health and Job Satisfaction in Malaysian Workplaces

Mohd Awang IDRIS^{1,2}, Maureen F. DOLLARD¹ and Anthony H. WINEFIELD¹

¹Work and Stress Research Group, Centre for Applied Psychological Research, School of Psychology, University of South Australia, Australia and ²Department Anthropology and Sociology, University of Malaya, Malaysia

Abstract: The Effect of Globalization on Employee Psychological Health and Job Satisfaction in Malaysian Workplaces: Mohd Awang IDRIS, *et al.* Work and Stress Research Group, Centre for Applied Psychological Research, School of Psychology, University of South Australia, Australia—**Objective:** To examine the impact of globalization on employee psychological health and job satisfaction via job characteristics (i.e., job demands and job resources) in an emerging economy, that of Malaysia. As external factors are regarded as influences on the working environment, we hypothesized that global forces (increased pressure and competition) would have an impact on burnout and job satisfaction via increased demands (role conflict, emotional demands) and reduced resources (supervisor support, coworkers support). **Methods:** Data were collected using a population based survey among 308 employees in the state of Selangor, Malaysia. Participants were approached at home during the weekend or on days off from work. Only one participant was selected per household. Structural equation modelling was used to analyse the data. Nearly 54% of respondents agreed that they need to work harder, 25% agreed that their job was not secure and 24% thought they had lost power and control on the job due to global trade competition. **Results:** Consistent with our predictions, demands mediated the globalization to burnout relationship, and resources mediated the globalization to job satisfaction relationship. **Conclusions:** Together, these results support the idea that external factors influence work conditions and in turn employee health and job satisfaction. We conclude that the jobs demands-resources framework is applicable in an Eastern setting and that globalization is a key antecedent of working environments.

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Key words: Burnout, Developing countries, Globalization, Job satisfaction

There is ample evidence that job related stress impacts severely on psychological health, and is also related to job dissatisfaction. However, it is not clear how globalization and other external factors affect working conditions and the health and satisfaction of workers. Although globalization and its relationship to the changing nature of work has been discussed from various perspectives, there is still a lack of empirical evidence exploring the link between globalization and working conditions^{1,2}. Even though there are few studies concerning globalization in non-Western countries, increasingly international reports of the psychological effects of work conditions support the notion of a global phenomenon affecting workers. In Asia alone, statistics show an increasing prevalence of depression, burnout and even fatalities due to work conditions³.

The aim of the current study was to explore the impact of globalization in Malaysia, through its effect on work conditions and job satisfaction. The pressure from globalization in Malaysia can be seen from the adoption of Western and Japanese performance systems, downsizing and mergers that force employees to deal with higher job demands. The introduction of new and advanced technology resulting from the need for business competitiveness also creates increased pressure for employees⁴.

Studies examining directly the impact of globalization on work conditions in developing countries are scarce. Most studies especially in the West have used macroeconomic contexts such as the unemployment rates to assess globalization indirectly. Research has found that increased unemployment reduces life satisfaction and increases stress via changes in work structures, such as low decision latitude and increased job demands⁵. Similarly, Cheng, Chen, Cheng and Chiang *et al.* used job insecurity as an indicator of macro-economic conditions and found relationships between perceived job insecurity

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Correspondence to: M.A. Idris, Centre for Applied Psychological Research, Magill Campus, St Bernards Rd, Adelaide, South Australia 5072, Australia (e-mail: idrma001@mymail.unisa.edu.au)

and poor health⁶).

Other studies have more directly assessed globalization effects. Pelfrene *et al.* in their study of 21,419 respondents in Belgium found that participants who rated themselves as threatened by high world trade impacts were more likely to report poor health status, fatigue, depression and sleep problems⁷. A longitudinal study of Australian dairy farmers, found that over and above the effects of common stressors, globalization factors (for example, deregulation and unpredictable markets) caused psychological distress to rise to extreme levels⁸. Other studies have used job insecurity as an indicator of external factors and found that employees who feel insecure about their jobs are likely to experience job stress⁹.

Assuming that globalization is important in influencing elements related to job characteristics, we formulated our research framework based on the idea that external factors influence working conditions. Research in this area is generally guided by job stress theories that focus heavily on individual and/or immediate working conditions and are limited in their explanation of the role of external factors¹⁰. Therefore we extended the Job Demand-Resources (JD-R) framework to model the effects of globalization. Our framework also builds on Sauter and Murphy's multi-level Work Organization Model that includes the external context (i.e. globalization), organizational factors (e.g. supervisory practises) and work context factors (job characteristics) that influence employees' psychosocial health¹¹. We assume that conditions are indirectly created by forces from outside of work¹¹. By integrating the assumptions of the Work Organization Model and the JD-R model, we hope to be able to explain how globalization as a precursor to workplace environments could in turn be related indirectly to worker psychological health and job satisfaction. Although the former model was specifically developed to assess the impact of external factors, we chose to apply the JD-R model as it is more flexible in accessing variables relating to job characteristics¹².

In general, the JD-R model postulates that working conditions, job demands and job resources affect employees' well being (burnout) and motivation (engagement). Job demands have been defined as any "physical, psychological, social or organizational aspects of the job that require sustained physical and/or physical effort¹³". Job resources refer to those aspects of work that reduce job demands, and function to achieve work goals. Many studies have been conducted using the JD-R model and provide support for its main assumptions. Studies reveal that employees who are exposed to high job demands are likely to experience burnout, while job resources are mainly linked to motivational outcomes such as work engagement and job satisfaction^{13, 14}.

With globalization, employees are exposed to more psychological threats as organizations concentrate more

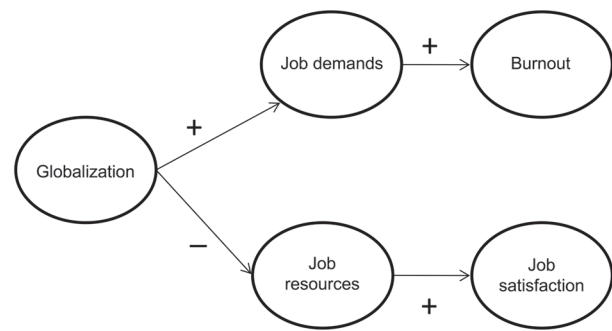


Fig. 1. Relationship between globalization and burnout and job satisfaction through job demands and job resources.

on profit and survival¹⁵). Employees are expected to work harder, deal with increasing emotional demands, and may suffer from various psychological health problems, and even mortality due to high job demands. Cheng *et al.*, found that due to globalization and recession, employees are likely to be faced with higher job demands⁶. As a result of globalization, employees are confronted with interdependency with other people, and employees are likely to suffer from emotional demands. Meanwhile, the changing nature of work also requires greater flexibility of human resources—with the expectation by employers that employees will perform multiple tasks^{1, 16}. This situation may lead to increased feelings of confusion (e.g., role conflict), along with increased emotional and psychological demands. We extend the health erosion hypothesis of the JD-R model and propose:

Hypothesis 1: *Globalization is positively related to burnout through its positive relationship with job demands (e.g. psychological demands, emotional demands and role conflict) (Fig. 1).* In other words, job demands will mediate the relationship between globalization and burnout.

While globalization is expected to increase job demands, it will also decrease organizations' commitment to invest in job resources. In accord with JD-R theory, resources are related to outcomes like job satisfaction via a motivational pathway. We expect that globalization will be adversely related to employees' job satisfaction through low decision authority, low supervisor support and low co-worker support. Although there is no research that examines directly the relationship between globalization and job satisfaction through working conditions, there is related empirical evidence suggesting that globalization minimises employees' job control^{8, 10}. Other studies have reported that downsizing and restructuring lead to low supervisory support, low control and decreased social support⁶.

Although job control is important for employee learning and development, external demands (e.g. globalization) could diminish employee job control. Recent studies in

Table 1. Means, standard deviations and percentage of employees' responses to a global stress items questionnaire

	Very untrue %	Untrue %	True %	Very true %	Mean	Standard deviation	N
1. Is your job insecure because of competition from world trade?	15.3	58.4	21.8	2.6	2.12	0.68	302
2. Do you have to work harder because of competition from world trade?	7.5	36.7	47.7	6.5	2.54	0.73	303
3. Do you lose power and influence over the way things go at your workplace because of competition from world trade?	11.7	61.7	21.4	2.9	2.16	0.66	301

N=308.

China for example found that job task structures are designed by high ranking authorities, and employees are expected to follow instructions¹⁷. As organizations strive to achieve the global competition agenda we expect that employees will be confronted with reduced supervisory support. In one study among organizations dealing closely with global market activities, employees reported that they were supervised strictly by supervisors¹⁸. This situation is expected given the fact that supervisors play a middle role for their organization's agendas, and need to fulfil the organization's goals as part of their job requirements. Supervisors need to plan and schedule employees' work, and may even neglect their welfare¹⁹. Furthermore, highly competitive conditions, also create working conditions with more interpersonal conflict and less co-worker support. Every employee is expected to invest their maximum energy for productivity. Under these conditions, globalization is likely to decrease supervisor and co-worker support, and decision authority. We extend the motivation pathway of the JD-R model and propose:

Hypothesis 2: *Globalization is negatively related to job satisfaction through its negative relationship with job resources (supervisor support, co-worker support, and decision authority)*. In other words, job resources will mediate the relationship between globalization and job satisfaction.

Method

Participants and procedure

A survey was conducted among 308 participants (53% response rate) in all 9 districts in Selangor, Malaysia using a population-based strategy. In general, a sample greater than 200 is considered to provide enough power to conduct maximum likelihood estimation using Structural Equation Modelling²⁰. We used two-stage stratified sampling (urban vs. rural) map provided by the Malaysian Statistical Department. Our respondents were approached by research assistants at their homes during the weekend and off-work days, and their participation in this study was voluntary. Only employed participants were selected, and one participant was selected from each residence. The

distribution of industry sectors within our sample was very similar to that indicated in national population data reports. Comparing our sample with the national Labour Force Survey Report 2007 respectively, most participants work in services sector (49.6% / 54.4%), manufacturing (12.6% / 18.5%), agricultural and forestry (11.6% / 13.6%), construction (3.2% / 8.5%), and mining (0.6% / 0.4%)²¹.

The research participants included 147 males (47.7%) and 137 females (44.3%), and 24 who did not indicate their gender; 170 (55.2%) lived in urban areas, most were of Malay ethnicity (N=214, 69.5%) and were aged between 20 to 65 yr old. The majority of respondents (N=258, 84%) were aged between 20 and 49. Furthermore the vast majority of participants were Malaysian citizens (N=294, 95.5%). The level of education was mostly secondary school (N=139, 45.1%) and 179 respondents (58%) worked for private organizations.

Instruments

The instruments used in this study were translated into Malay using back-to-back translation.

1) Globalization competition

Globalization competition was assessed using the 3-item global demands questions scale from the Job Content Questionnaire (JCQ)^{22, 23}. The scale is shown in Table 1. A sample question is "Do you have to work harder because of competition from world trade?" The reliability of this scale was $\alpha=0.71$. The response scale ranged from 1 (very untrue) to 4 (very true).

2) Job demands

Job demands were assessed using psychological demands, emotional demands and role conflict. Psychological demands were assessed by using two items from the psychological demands scale of the JCQ for example "Some demands I face at work are in conflict with other demands at work" and "I have to work through my breaks and lunch/dinner in order to catch up at work"²³. We omitted "my job requires working very hard" and "my job requires working very fast" because of low reliability. The inter-item correlation was $r=0.44$. Both emotional demands ($\alpha=0.85$) and role conflict ($\alpha=0.85$)

Table 2. Means (M), standard deviations (SD) and intercorrelations between the study variables

	M	SD	1	2	3	4	5	6	7	8	9
1. Globalization	5.37	1.33									
2. Psychological demands	3.80	1.02	0.20**								
3. Emotional demands	1.19	0.85	0.31**	0.40**							
4. Role conflict	1.46	0.84	0.18**	0.31**	0.48**						
5. Supervisory support	3.08	0.72	-0.08	-0.13*	-0.14*	-0.20**					
6. Coworkers support	3.11	0.54	-0.18**	-0.04	-0.10	-0.07	0.41**				
7. Decision authority	2.64	0.62	0.02	0.14*	0.01	-0.01	0.07	0.13*			
8. Exhaustion	2.80	1.41	0.22**	0.24**	0.35**	0.18**	-0.07	-0.03	0.02		
9. Cynicism	2.14	1.14	0.18**	0.21**	0.28**	0.15**	-0.13*	-0.04	-0.05	0.44**	
10. Job satisfaction	3.90	0.76	-0.14*	-0.01	-0.17**	-0.10	0.24**	0.33**	0.25**	-0.20**	-0.25**

N=308 employees. * $p < 0.05$; ** $p < 0.01$.

were assessed using four items each from the Copenhagen Psychosocial Questionnaire²⁴. Answers were rated: 1 (not agree) to 4 (strongly agree). A sample question for emotional demand is: “Does your work put you in emotionally disturbing situations?” A sample question regarding role conflict is “Are contradictory demands placed on you at work?”

3) Resources

Job resources were examined using three subscales: *decision authority*, *supervisor support* and *co-workers' support* from the JCQ²³. We used two items from the decision authority scale ($\alpha=0.66$), “I have a lot of say about what happens on my job” and “My job allows me to make a lot of decisions on my own” from the original three-item scale. We omitted a reverse item, “On my job, I have very little freedom to decide how I do my work” due to low reliability of this item. *Supervisor support* ($\alpha=0.91$) was assessed using 5 items from the original 6 items scale, for example: “My supervisor/manager is concerned about the welfare of those under him/her”. We omitted the reverse items in the current study. The responses range from 1 (strongly disagree) to 4 (strongly agree). *Co-workers' support* ($\alpha=0.87$) was assessed using six items from the original 7-item scale for example: “People I work with are competent in doing their jobs”. A reverse item “I am exposed to hostility or conflict from the people I work with” was omitted from the analysis as it reduced the scale reliability. The responses ranged from 1 (strongly disagree) to 4 (strongly agree).

4) Job satisfaction

We measured job satisfaction by using a 3-item measure of overall satisfaction, which assesses the extent to which employees like or dislike their jobs²⁵. Items include “In general, I don't like my job” (reverse-scored), “All in all I am satisfied with my job” and “In general I like working here”. The responses ranged from 1 (strongly disagree) to 5 (strongly agree) ($\alpha=0.79$).

Analysis strategy

First, we conducted descriptive analyses to examine frequencies (Table 1), and inter-correlations between all variables (Table 2). Second, due to the cross-sectional nature of the study we conducted Harman's one factor test commonly used in cross-sectional research to assess the potential influence of common method effects²⁶. We entered all the items of the 10 variables (as illustrated in Fig. 2) into an exploratory factor analysis, that yielded 10 factors as expected accounting for 65% of the variance, with factor 1 accounting for 19% of the variance. Given that a single factor did not appear, and that a general factor did not account for most of the variance, common method bias is not considered a significant problem in our study²⁶.

Second, we used structural equation modelling (SEM) and AMOS 17 to evaluate how well the research model fit the data. We evaluated our model by using five absolute fit indices, χ^2 goodness-of-fit statistics, Goodness-of-Fit Index (GFI), Comparative Fit Index (CFI), Tucker-Lewis Fit Index (TLI), and the Root Mean Square Error of Approximation (RMSEA). For GFI, CFI and TLI, values greater than 0.90 and for RMSEA values smaller than 0.08 are acceptable²⁷.

We first assessed the null hypothesis model (M0). Then we tested the proposed full mediation model (M1) as shown in Fig. 1. Next, we tested a partial mediation model (M2) with the following paths: globalization \rightarrow job demands \rightarrow burnout, globalization \rightarrow job resources \rightarrow job satisfaction, and included a direct path between globalization to the distal variables, globalization \rightarrow burnout and globalization \rightarrow job satisfaction.

Further, we tested an alternative model that only included direct effects of globalization to distal variables (M3), with the following paths: globalization \rightarrow burnout and globalization \rightarrow job satisfaction. One-tailed significance levels are reported given that the hypotheses were directional.

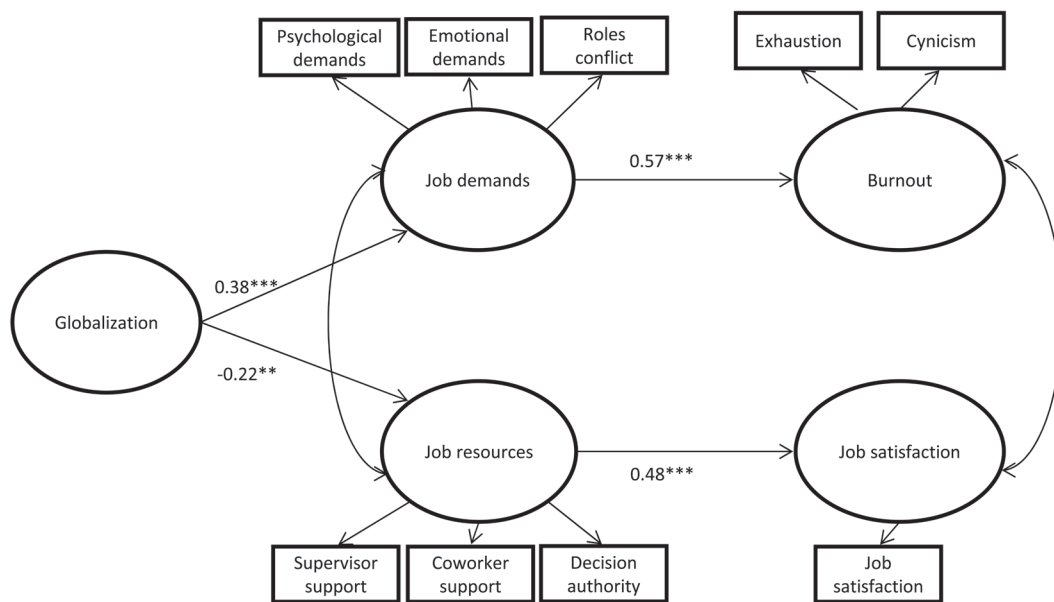


Fig. 2. Globalization as a precursor to job demands and job resources and its impact on burnout and job satisfaction. N=308, *** $p < 0.001$, ** $p < 0.01$.

We also applied some additional tests for mediation following Shrout and Bolger's²⁸⁾ approach: (1) that the independent measure (globalization) is related to the outcomes (burnout and satisfaction); (2) that the independent measure is related to the mediators (demands, resources); (3) that the mediators are related to the outcome measures after controlling for the independent measure; and (4) for full mediation, that the relationship between the independent measure and the outcome, should not be significant with the mediators in the model. If both effects (mediators and independent measure) are significant, then partial mediation is confirmed. Finally we confirmed the mediation directly using bootstrapping as suggested by Hayes²⁹⁾ and Preacher, Rucker and Hayes³⁰⁾.

Results

Descriptive statistics (Table 1) showed that 54.2% agreed that they have to work harder due to global trade. Nearly 25% thought their job was no longer secure due to global trade and nearly 24% thought they had lost power and control due to global trade competition. The only benchmark sample we had was of Australian dairy farmers⁸⁾. We conducted a *t*-test between both groups (N=339 for Australian sample) for item 2 (Do you have to work harder because of competition from world trade?) and item 3 (Do you lose power and influence over the way things go at your workplace because of competition from world trade?). We found that for each item there was a significant difference between the groups for item 2, *t*

(64)=14.0, $p < 0.001$, and for item 3, *t* (64)=7.96, $p < 0.001$, with the Australian sample (item 2, M=2.98, SD=0.85; item 3 M=2.64, SD=0.84), reporting considerably higher levels of global competitive effects.

Next we assessed the mediation hypotheses using a multi-step approach. The summary of model comparison fit indices is shown in Table 3. We analyzed the proposed mediation model (M1) which represented the following paths: globalization → job demands → burnout, and globalization → job resources → job satisfaction. The model M1, χ^2 (31)=49.33 fitted the data very well as indicated by the fit indices: GFI=0.97, CFI=0.96, TLI=0.94, and RMSEA=0.04. Next we examined the partial mediation model (M2), globalization → job demands → burnout, and globalization → job resources → job satisfaction, with paths between globalization to burnout and job satisfaction also included. The M2 model fitted the data well, where χ^2 (29)=46.60, GFI=0.97, CFI=0.96, TLI=0.94, and RMSEA=0.04. To see whether the partial mediation model (M2) was better than M1, we conducted a chi square test. We found that the fit of the M2 model did not significantly improve upon the M1 model. Next, we tested the alternative direct effect (M3) model with a path between globalization → burnout, and globalization → job satisfaction. The M3 did not fit the data well, with, χ^2 (33)=156.54, GFI=0.91, CFI=0.71, TLI=0.61, and RMSEA=0.11. Since the M1 model fit was very good and fitted the data better than M2 and significantly better than the M3 model, we used M1 model (as illustrated in Fig. 2) to evaluate our hypotheses.

Table 3. Fit indices and comparisons of alternative models

	χ^2	df	GFI	CFI	TLI	RMSEA	$\Delta\chi^2$ (df) sig	Comparison
M0. Null model	478.363	45	0.71	0.00	0.00	0.177		
M1. Proposed mediation model	49.33	31	0.97	0.96	0.94	0.04		
M2. Full mediation model	46.60	29	0.97	0.96	0.94	0.04	2.73 (2) (ns)	M2–M1
M3. Alternative direct effects model	156.54	33	0.91	0.71	0.61	0.11	107.21 (2)***	M3–M1

N=308, * $p<0.05$, ** $p<0.01$; ***, $p<0.001$; χ^2 goodness-of-fit statistic; GFI=Goodness of Fit Index; CFI=Comparative Fit Index; TLI=Tucker-Lewis Index; RMSEA=Root Mean Square Error of Approximation.

Hypothesis 1 predicted that globalization is positively related to burnout through its positive relationship with job demands. We found that the path between globalization and job demands was significant and positive ($\beta=0.38$, $p<0.001$) and between job demands to burnout was significant and positive ($\beta=0.57$, $p<0.001$). To confirm the full mediating effects, we conducted bootstrapping tests. Our 1,000 samples bootstrapping test confirmed the effect of job demands as the mediator between the globalization and burnout (indirect effect=0.16, 95% Confidence Interval (CI), lower CI=0.13, upper CI=0.31, $p<0.01$), and thus provided support for Hypothesis 1.

Hypothesis 2 predicted that globalization is negatively related to job satisfaction through its negative relationship to job resources (H2). In M1 the results indicate that there is a negative relationship between globalization and job resources ($\beta=-0.22$, $p<0.01$), and a positive relationship between job resources and job satisfaction ($\beta=0.48$, $p<0.001$). Again, a 1,000 sample bootstrapping analysis confirmed the mediation process between globalization and job satisfaction via resources (indirect effect=-0.06, 95% CI, lower CI=-0.12, upper CI=-0.02, $p<0.01$). This result supports Hypothesis 2.

Additional tests following Schrouf and Bolger's recommendation supported the full mediation hypotheses²⁸. First, the coefficients for the direct paths were significant; globalization \rightarrow burnout ($\beta=0.30$, $p<0.001$) and globalization \rightarrow job satisfaction ($\beta=-0.14$, $p<0.01$). There was also a significant relationship between globalization and the mediators (job demands and job resources) when the other paths were set to zero, $\beta=0.37$, $p<0.001$ and $\beta=-0.22$, $p<0.01$ respectively. The mediator (job demands) was also related to burnout ($\beta=0.51$, $p<0.001$) and job resources was related to job satisfaction ($\beta=0.48$, $p<0.001$) when the independent variable was included in the model. The relationship between the independent variable and the outcome variables was not related when we added the mediator into the model; globalization \rightarrow burnout ($\beta=0.12$, ns) and globalization \rightarrow job satisfaction ($\beta=-0.04$, ns). Together the results confirm fully mediated paths and the impact of globalization on burnout through job demands, and the impact of globalization on job satisfaction through job resources.

Discussion

The results provide evidence that globalization affects burnout and influences employees' job satisfaction via demands and resources. Our finding is consistent with Cheng *et al.*, who found that macro-economic changes led to higher job demands that in turn were related to poor employee health⁶. In the current study, we found that globalization competition increased job demands (i.e., task related pressure, emotional demands, role conflict) in organizations. Indirectly, increasing job demands led to employees' exhaustion and cynicism in their jobs. Pressure from globalization competition not only increased job demands, but also reduced much needed organizational job resources, relating to decision authority, supervisory support and co-workers' support. In turn a lack of resources was related to decreased satisfaction. Importantly work conditions, i.e., demands and resources, respectively mediated the effects of globalization on employees' burnout, and job satisfaction, supporting both of our hypotheses.

The descriptive results (Table 1) showed that Malaysian employees reported that they needed to work harder as a result of external global competition. The results were expected since the pressure of economic liberalization is becoming more commonplace in Malaysian organizations⁴. However, the impact of globalization on Malaysian employees is considerably lower than in a sample of Australian dairy farmers⁸. This is not really surprising because the dairy farmers were experiencing significant deregulation in the industry and unpredictable market prices. Relative to other Australian industries this particular industry would be highly affected by globalization. The findings are also consistent with the assumption that global factors affect work environments and indirectly influence employees' well being and satisfaction⁵. Our results suggest the importance of job resources in creating healthy working environments and improving employees' satisfaction. Organizations have the responsibility for ensuring that job demands are fair and equitable, so that employees' job satisfaction is maintained.

The emergence of globalization is thought to have wide

ranging effects internationally and our study has confirmed it is a phenomenon that has negative impacts related to adverse psychological conditions in developing, as well as developed countries, giving weight to its global impact. It is evident that psychological ill-health and burnout in developing countries is increasing. The pressures emanating from global factors with their effects on demands and resources in Malaysia's public and private sectors may be the main source of the problem.

Theoretical and practical implications

The current study found that globalization not only affected employees' health and job satisfaction, but was also a precursor for working conditions. We also found an indirect effect of globalization and the mechanism of influence on employees well being was through job characteristics (job demands and job resources). So far, the literature reports how globalization creates a negative impact on employee health and safety³¹. Accordingly, researchers have been aware that globalization is a growing risk factor for working conditions. Karasek *et al.* first proposed globalization competition scales in the JCQ²². Theoretically, our findings are coherent with the argument from the Work Organization Model which proposed that external factors could change working conditions and indirectly have major psychological health effects among employees¹¹.

Since globalization is becoming a new force driving change in work conditions in most modern organizations, theoretically scholars should give more attention to the impact of globalization on employees' health^{1,2}. Issues related to macro-economy and job security are now becoming a crucial threat to modern employees³². As indicated by Grant *et al.*, changes in societal and economic structures have influenced job design, so scholars should rethink traditional models of job design³³. Working conditions are not only reflected by job characteristics, but are likely influenced by various external factors. Thus, we see globalization could be modelled as a precursor to job design, and integrated as a higher level influence on lower level job entities in work stress models.

Practically, we found that globalization is now not only a threat in developed countries, but is also salient in developing countries. Greater attention to creating more healthy working conditions with the social coordination and initiatives of high level multi-stakeholder decision makers in organizations may provide a necessary buffer against the negative impact of globalization³⁴. Around the world, with the changing nature of work resulting from a highly competitive agenda and neo-liberalist economy, employees are now confronted with various health and safety issues¹⁵. Since globalization is likely to create more problems for employees in developing countries as developed countries have more advanced preventive strategies, the research agenda regarding the impact of

globalization should focus on developing countries^{35,36}.

Conclusion

This study provides strong empirical support for Sauter and Murphy's proposition that emphasised the link between external factors and working conditions¹¹. Expanding the JD-R framework enabled us to show that globalization does create increased demands and reduced resources in the workplace with both worker and organizational consequences. A globalization "throw-away" worker is not only rhetoric, but clearly part of a modern threat for every employee³⁷. In summary, the current study provides an explanation of how globalization is associated with poor working conditions, and importantly to employees' health and dissatisfaction. A preventive social policy agenda to avoid the negative side of globalization should be a priority for developing countries.

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