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Damien Joseph

Nanyang Technological University, adjoseph@ntu.edu.sg

Soon Ang

Nanyang Technological University, asang@ntu.edu.sg

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Threat of Professional Obsolescence and Mobility Intentions: The Mediating Role of Coping Strategies

Damien Joseph

Nanyang Technological University
adjoseph@ntu.edu.sg

Soon Ang

Nanyang Technological University
asang@ntu.edu.sg

ABSTRACT

This study begins a research program that examines how IT professionals cope with the threat of professional obsolescence. In answering this question, this study draws on theories of occupational stress, in particular the theory of conservation of resources (Hobfoll 2002; Hobfoll and Freedy 1993), to relate the threat of professional obsolescence with IT professionals' coping strategies and their subsequent intentions to turnover and turnaway. Results from a sample of IT professionals are consistent with the theory of conservation of resources in that the threat of professional obsolescence is negatively related to direct action coping and is positively related to emotion focused coping. Extending the theory, we find that direct action coping is negatively related to turnaway intentions as hypothesized but contrary to hypothesis, emotion focused coping is positively related to turnover intentions. We conclude this study with the discussion of these results and propose future research directions.

Keywords

Turnover, Turnaway, Threat of Professional Obsolescence, Coping, IT Professionals, Occupational Work Stress

INTRODUCTION

The threat of professional obsolescence remains an enduring challenge for IT professionals. Unlike in other professions where knowledge and skills remain enduring, the half-life of knowledge and skills in the IT profession is estimated at less than two years (Ang and Slaughter 2000; Dubin 1990). With such a short shelf life, an IT professional's stock of competencies erodes quickly and comes under the continuous threat of professional obsolescence (Tsai et al. 2007). Consequently, IT professionals must remain technologically current and continuously acquire new knowledge and skills to remain productive in the IT profession. If not, IT professionals face the prospect of having their IT careers constrained in terms of available job alternatives (Tsai et al. 2007).

Although IT research has long pointed to professional obsolescence as a critical issue (Lee et al. 1995; Nelson 1991), limited theoretical and empirical research has directly examined the threat of professional obsolescence, its etiology, structure, or consequences. Specifically, little research has empirically examined how IT professionals cope with the threat of professional obsolescence (Pazy 1990; Tsai et al. 2007) or examined the outcomes of coping with such threats (Jex and Yankelevich 2008). Hence, we begin a program of research by asking: how do IT professionals cope with the threat of obsolescence? We draw on and extend theories of occupational work stress (Hobfoll and Freedy 1993; Lazarus and Folkman 1984) to examine the relationship between the threat of professional obsolescence, coping mechanisms that are likely to be adopted and their subsequent mobility behaviors. In doing so, this study contributes to the IT discipline by being the first to empirically test a model of the consequences of IT professionals' responses to the threat of professional obsolescence. This study also contributes to the extant organizational behavior literature by extending theories of occupational work stress to examine the consequences of coping cognitions.

THEORETICAL FOUNDATION AND HYPOTHESES DEVELOPMENT

Threat of Professional Obsolescence and the Consequent Coping Strategies

Professional obsolescence is typically defined as the erosion of professional competencies required for successful performance (e.g., Dubin 1990; Ferdinand 1966; Glass 2000). It is essential that IT professionals possess up-to-date competencies because it affects their employability, career development, and compensation. Therefore, the erosion of their competencies constitutes a potential threat to IT professionals, i.e., the threat of not being up-to-date with the rapidly changing technology environment. Though not universal, it has been argued and shown that the majority of IT professionals

perceive professional obsolescence as a threat (Dubin 1990; Tsai et al. 2007). As a threat, the threat of professional obsolescence is argued to be an occupational work stressor as IT professionals are constantly required to learn and stay up-to-date with the latest technologies in the IT field (Tsai et al. 2007).

The theory of conservation of resources (Hobfoll 2002; Hobfoll and Freedy 1993) explains how individuals cope with an occupational work stressor. The theory of conservation of resources proposes that individuals are motivated to conserve physical, cognitive and emotional resources in their work lives. Having to cope with stressors is a resource depleting activity. As such, individuals cope with occupational work stress in ways that deplete the least amount of limited physical, cognitive and emotional resources. There are two separate, but concurrent, coping strategies in response to occupational work stress: direct action focused coping strategy and emotion focused coping strategy (Davey 1993; Folkman and Lazarus 1988; Jex and Yankelevich 2008). A direct action coping strategy is primarily a task-oriented cognition in which individuals intend to “do something” to alter the threat by dealing directly with it (Davey 1993, p. 535). Empirical research indicates that direct action coping typically leads more positive outcomes (Herman and Tetrick 2009; Shiloh et al. 1997). In the IT context, a direct action coping strategy involves updating technical competencies (Tsai et al. 2007). In comparison, an emotion focused coping strategy is “aimed at managing the stress” by implicit or explicit acceptance of the occupational stress (Davey 1993, p. 535). Converse to direct action coping, emotion focused coping has been shown to lead to negative outcomes (Herman and Tetrick 2009; Shiloh et al. 1997). In the IT context, a emotion focused coping strategy involves implicit or explicit acceptance of professional obsolescence (Tsai et al. 2007).

The theory of conservation of resources goes on to predict that direct action focused coping strategies are less likely to be used because of the high resource demands it requires. On the other hand, emotion focused coping is more likely to be used because it requires fewer resources compared to direct action coping strategies (Jex and Yankelevich 2008). In a small sample qualitative study of IT professionals’ coping strategies in the face of a threat to professional obsolescence, IT professionals were more likely to use more emotion focused coping strategies, especially when “they believe that nothing constructive can be done about the stressor and that the problem is something that they must endure” (Tsai et al. 2007, p. 403). Hence,

Hypothesis 1a: The threat of professional obsolescence is negatively related to direct action coping.

Hypothesis 1b: The threat of professional obsolescence is positively related to emotion focused coping.

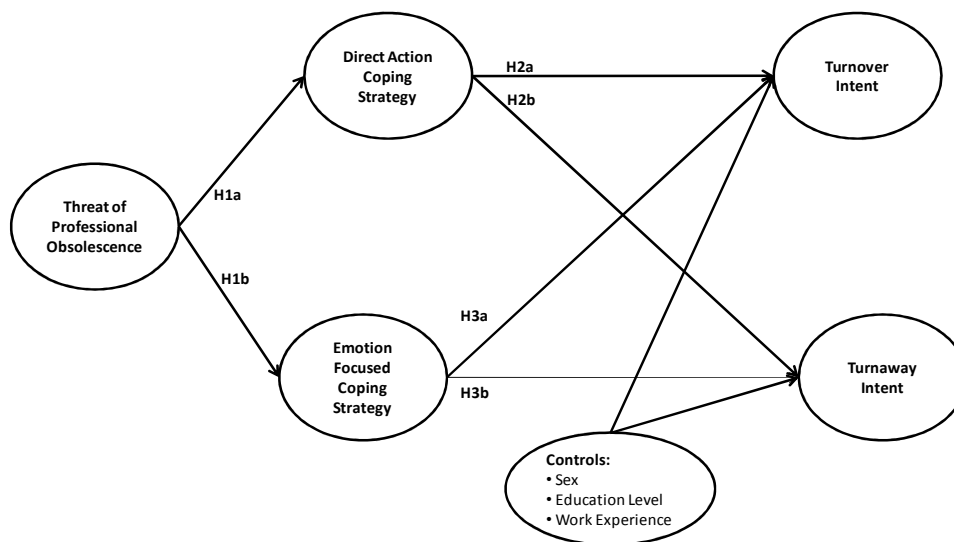


Figure 1. Research Model

Coping Strategies and its Consequent Mobility Intentions

There is limited research applying theory of conservation of resources to the consequences of direct action and emotion focused coping strategies (Jex and Yankelevich 2008; Lee and Ashforth 1996; Pazy 1990). Therefore, this study provides us the opportunity to contribute to the extant research on occupational work stress theories by linking coping strategies that IT professionals are likely to adopt with their subsequent mobility behaviors. The mobility behaviors examined in this study are turnover intent, defined as individuals’ intentions of holding the same or similar jobs in different organizations (March and

Simon 1958; Zabusky and Barley 1996) and turnaway intent, defined as individuals' intentions of changing one's profession or occupation (Rhodes and Doering 1993).

As the direct action coping strategy is primarily task-oriented (Davey 1993), "updating is the most direct way of coping with the (professional) obsolescence threat, as it literally reduces (subsequent professional) obsolescence" (Pazy 1996, p. 261). IT professionals may intend to update using informal techniques, such as utilizing the Internet (Tsai et al. 2007), or via formal mechanisms such as certifications. Either way, direct action coping strategy is aimed at maintaining IT professionals' currency of technical competencies. In addition, direct action coping strategies have been shown to be positively associated with job satisfaction (Jex and Yankelevich 2008). With job satisfaction, there is less likelihood that IT professionals will intend to turnover (Joseph et al. 2007) or turnaway. Hence,

Hypothesis 2a: Direct action coping is negatively related to turnover intentions.

Hypothesis 2b: Direct action coping is negatively related to turnaway intentions.

Given that, an emotion focused coping strategy is "aimed at managing the stress" by implicit or explicit acceptance of the occupational stress (Davey 1993), we would expect that the lack of up-to-date technical competencies would narrow the range of job alternatives within the IT profession (Pazy 1996; Tsai et al. 2007). In a qualitative study of IT professionals' assessment of coping strategies in the face of professional obsolescence, the professionals interviewed claimed that with higher professional obsolescence, "the range of job alternatives was likely to be reduced, and freedom of movement in the occupational world was likely to be limited" (Pazy 1996, p. 259). As such, we believe that emotion focused coping would be associated with lower intentions to turnover. As alternative jobs within IT become limited, IT professionals may seek a career change as an alternative option in response to the threat of professional obsolescence (Pazy 1990; Tsai et al. 2007). A career change reduces subsequent professional obsolescence as occupation specific competencies in other occupations are relatively more enduring and less influenced by technological changes compared to the IT profession (Pazy 1996). Hence,

Hypothesis 3a: Emotion focused coping is negatively related to turnover intentions.

Hypothesis 3b: Emotion focused coping is positively related to turnaway intentions.

METHOD

Data Collection

The approach taken to empirically test the hypotheses was a field study using a survey methodology for data collection. We collected data from 181 IT professionals using a snowballing approach (Babbie 1992; Lopes 1996). Twenty-nine (29) participants enrolled in a part-time MBA program were asked to distribute the questionnaire to 10 IT professionals in their respective organizations. Of the 290 questionnaires distributed, we achieved a response rate of 62.41% with 181 usable questionnaires returned.

Sample

The respondents were on average 30.3 years old with an average working experience of 6.5 years. Their average organization tenure was 3.1 years. The sample comprised 76.2% males and 23.8% females. Of the 181 IT professionals in the sample, 16.6% were non-graduates, 71.8% attained a bachelors degree and the remaining 11.6% possessed a post-graduate degree. The IT professionals surveyed held job roles in both systems development (e.g., applications development managers, systems analyst, and programmers) as well as IT infrastructure (e.g., data center managers, network managers, and database administrators).

Measures

The questionnaire completed by the respondents contained multiple measurement items relating to each of the constructs in the research model. Wherever possible, we used scales validated in previous studies. For the remaining constructs, we used sets of items generated based on reviews of prior relevant literature. For all items, respondents were asked to indicate the extent to which they agreed or disagreed with the statements on a seven-point Likert-type scale, anchored by "1" = "Strongly disagree" and "7" = "Strongly agree."

The dependent variables of *Turnover Intent* and *Turnaway Intent* were measured with five items each adapted from Rusbult et al. (1988). Examples of items measuring *Turnover Intent* include: "I have spent some time looking for another IT job" and "I will probably look for a new IT job outside my current company." Examples of items measuring *Turnaway Intent* include:

“I have spent some time looking for another *non-IT* job” and “I am considering quitting my current job for another *non-IT* job.”

The independent variables in the model are Threat of Professional Obsolescence, Direction Action Coping and Emotion Focused Coping. The *Threat of Professional Obsolescence* was measured with five items based on research by Pazy’s (1990; 1994; 1996). Examples of items measuring this construct include: “I feel the threat of professional obsolescence” and “I fear of technical obsolescence”.

We developed the measures of *Direct Action* and *Emotion Focused Coping* from Pazy’s (Pazy 1990) qualitative study on cognitive coping schemata of professional obsolescence. Examples of items measuring *Direct Action Coping* include: “Updating is not tiring” and “Updating gives me tremendous pleasure”. Examples of items measuring Emotion Focused Coping include: “I feel that updating is not necessary unless it is relevant to my current job requirements” and “I am not at all concerned with updating unless developments are in my area of specialization.”

The covariates in the model were Sex, Educational Level and Work Experience. *Sex* was measured with a dichotomous variable indicate Male as “0” and Female as “1”. *Educational Level* was measured with a four level ordinal variable with “1” indicating High School Diploma, “2” indicating Bachelors degree and “3” indicating Postgraduate Degree. Finally, *Work Experience* was measured with a continuous variable indicating the total labor force experience held by an individual.

Data Analysis

We use partial least squares (PLS) to analyze the measurement and structural models. PLS is suited for this study because it combines principal component analysis, path analysis, and regression to simultaneously evaluate theory and data (Chin 1998; Hulland 1999). Data analysis with PLS begins with the assessment of the measurement model followed by the assessment of the structural model. In assessing the measurement model, we examine the construct validity in terms of convergent and discriminant validities. The measurement model is evaluated by examining the predictive and explanatory powers of the model (Gefen et al. 2000). Finally, a bootstrapping test was conducted to compute estimates of standard errors for testing the statistical significance of path coefficients using t-tests.

RESULTS

Measurement Model

The acceptability of the measurement model is assessed by internal consistency between items and the model’s convergent and discriminant validity. The composite reliability values of all of the constructs were close to or above 0.90, indicating high internal consistency (Bagozzi and Yi 1988). Convergent and discriminant validities are assessed with the following criteria: (1) the square root of the average variance extracted (AVE) by a construct from its indicators should be at least 0.707, i.e. AVE itself should be greater than 0.5; (2) The square root of the AVE should be greater than the variance shared between the construct and other constructs in the model; and (3) standardized item loadings should be greater than 0.70 (Fornell and Larcker 1981). As shown in Table 1 and 2, convergent and discriminant validity was confirmed. The square root of AVE for each construct was greater than 0.707, all constructs share more variance with their own indicators than with those of other constructs and that the items load highly, based on established guidelines (Hair et al. 1995), on respective constructs are above 0.80 and are statistically significant at the 0.001 level.

	N											
	Mean	SD	Items	CR ¹	AVE ²	1 ³	2	3	4	5	6	7
1 Turnover Intent	3.441	1.439	4	0.894	0.631	0.794						
2 Turnaway Intent	2.872	1.524	4	0.937	0.750	0.381 ***	0.866					
3 Threat of Professional Obsolescence	3.961	1.567	3	0.927	0.808	0.267 ***	0.132	0.899				
4 Direct Action Coping Strategy	2.751	1.370	3	0.905	0.761	0.109	0.109	0.184 *	0.872			
5 Emotion Focused Coping Strategy	4.343	1.312	4	0.915	0.730	0.071	-0.358 ***	-0.229 **	-0.268 ***	0.854		
6 Sex	1.238	0.427	1			-0.083	0.096	-0.042	-0.031	-0.032		
7 Education Level	2.939	0.559	1			0.001	0.023	0.004	-0.046	-0.074	-0.125	
8 Work Experience	6.465	4.339	1			-0.151 *	-0.021	-0.068	0.059	-0.030	-0.055	-0.127

¹ Composite Reliability; ² Average Variance Explained; ³ Emboldened numbers on the diagonal are the square root of AVE shared between the constructs and their measures. Off-diagonal elements are correlations among constructs. To assess discriminant validity, values should be larger than corresponding off-diagonal values. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 1. Descriptives, Inter-construct Correlations and Results of Convergent and Discriminant Validities

Construct	Item	Loadings	t-statistic
Turnover Intent	toi1	0.815	14.655 ***
	toi2	0.886	25.507 ***
	toi3	0.834	14.481 ***
	toi4	0.813	14.136 ***
Turnaway Intent	tai1	0.835	21.980 ***
	tai2	0.897	37.428 ***
	tai3	0.901	48.111 ***
	tai4	0.891	50.573 ***
Threat of Professional Obsolescence	thrtobs	0.855	19.396 ***
	thrtobs	0.891	20.985 ***
	thrtobs	0.948	59.260 ***
Maladaptive Coping	coping1	0.913	35.558 ***
	coping2	0.837	11.987 ***
	coping3	0.867	17.058 ***
Adaptive Coping	update1	0.837	24.908 ***
	update2	0.869	33.724 ***
	update6	0.887	39.474 ***
	update7	0.824	17.399 ***

*** $p < 0.001$.

Table 2. Item Loadings and t-statistics

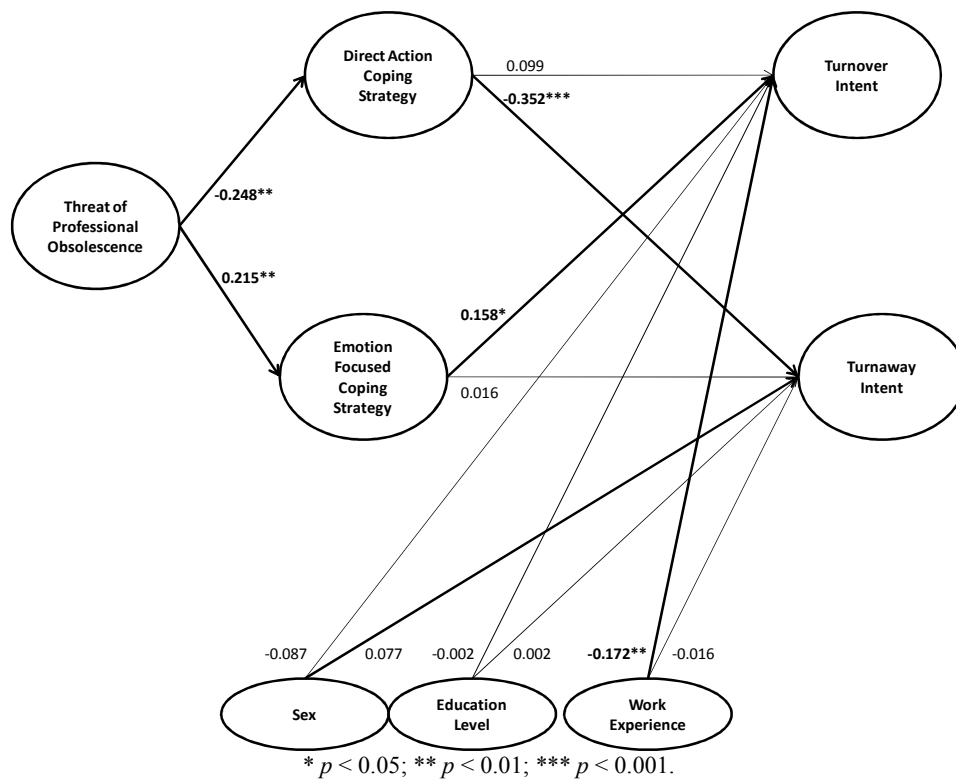


Figure 2. Results

Analysis of the Structural Model

Figure 2 presents the results of the hypothesized structural model. The results, i.e. the path coefficients, from a PLS structural model, paths can be interpreted as standardized betas. In addition, the predictive strength of a hypothesized model can be assessed with its total explained variance. The model explained 6.04% of the total variance in turnover intentions and 13.49% of the total variance in turnaway intentions. In turn, the threat of professional obsolescence explained 5.67% of the total variance in adaptive coping mechanism and 4.63% of the total variance in maladaptive coping mechanism.

Hypothesis 1a posited that the threat of professional obsolescence is negatively related to direct action coping and Hypothesis 1b posited that the threat of professional obsolescence is positively related to emotion focused coping. We find that the threat of professional obsolescence is negatively related to direct action coping ($\beta = -0.248, t = 2.685, p < 0.01$). In addition, the threat of professional obsolescence is positively related to emotion focused coping ($\beta = 0.215, t = 3.021, p < 0.01$). As such Hypotheses 1a and 1b are supported. Additional analysis of the difference between the estimated path coefficients of direction action coping and emotion focused coping indicates that IT professionals favor emotion focused coping over direct action coping in response to the threat of professional obsolescence ($t = -26.034, df = 179, p < 0.001$).

Hypothesis 2a and 2b posit that direct action coping is negatively related to both turnover intent and turnaway intent respectively. We find that direct action coping is negatively related to turnaway intent ($\beta = -0.352, t = 4.367, p < 0.001$). However, we find that direct action coping is not significantly related to turnover intent ($\beta = 0.099, t = 0.926, p > 0.10$).

Hypothesis 3a posits that emotion focused coping is negatively related to turnover intent while Hypothesis 3b posits that emotion focus coping is positively related to turnaway intent. Contrary to hypothesis, we find that emotion focused coping is positively related to turnover intent ($\beta = 0.158, t = 2.032, p < 0.05$). We find that emotion focused coping is not significantly related to turnaway intent ($\beta = 0.016, t = 0.184, p > 0.10$).

DISCUSSION AND CONCLUSION

We undertook this study to examine the broad research question of how IT professionals cope with the threat of professional obsolescence. In doing so, this study contributes to the IT discipline by being the first to empirically test a model of the consequences of IT professionals' responses to the threat of professional obsolescence. This study also contributes to the extant organizational behavior literature by extending theories of work stress to examine the consequences of coping cognitions. As noted above, little research to date has empirically examined how IT professionals cope with the threat of professional obsolescence (Pazy 1990; Tsai et al. 2007) or examined the outcomes of coping with such threats (Jex and Yankelevich 2008). Drawing on the theory of conservation of resources (Hobfoll 2002; Hobfoll and Freedy 1993), we find that IT professionals cope with the threat of professional obsolescence by favoring emotion focused coping strategies over direct action coping strategies. Consistent with our hypotheses, we find that direct action coping is negatively related to turnaway intent.

It may not be surprising that we find no significant relationship between direct action coping and turnover intent. As IT professionals who favor this task oriented cognition, they indicate willingness to deplete their resources to keep up-to-date. As their current employers invest in the latest information technologies, IT professionals who are willing to learn these new technologies may be better placed within their current employers rather than with alternative employers which may or may not possess these new technologies (Tsai et al. 2007) or even value these latest IT competencies (Mithas and Krishnan 2008). Hence, there is little motivation to turnover and possibly little premium (if any) awaiting IT professionals with up-to-date IT competencies in other firms. We call for future research to examine this thesis and to specifically examine the moderating role of rewards in the relationship between direct action coping and turnover intentions.

Unexpectedly and contrary to our hypothesis, we find that emotion focused coping is positively related to turnover intent and not related to turnaway intentions. A reason for these unexpected findings could be that IT professionals may intend to turnover to organizations that value general human capital over up-to-date IT competencies. It has been shown that while prospective employers value IT experience, these prospective employers value general competencies significantly more (Mithas and Krishnan 2008). As such, conserving one's resources and attaining equal or increased pay by turning over to employers that value general competencies more than up-to-date IT competencies might be the path of least resistance. This strategy contrast sharply with that of depleting their limited physical, cognitive and emotional resources updating IT competencies with little expected returns to updating. That IT professionals weigh the wisdom of conserving or depleting limited resources vis-à-vis potential rewards is and choosing the path of least resistance is consistent with the principle that resource loss is more salient than resource gain (Luria and Torjman 2009).

As our finding that emotion focused coping is not related to turnaway intentions is a first for the IS discipline, we call for future research to examine this thesis as it is contrary to current theories of mobility in response to the threat of professional obsolescence (Pazy 1990; Tsai et al. 2007). Current theories of IT mobility expect diminished mobility within the profession and increased mobility to occupations with more enduring knowledge bases. Finally, another line of inquiry could be to examine whether there are differential outcomes with varying magnitudes of threat of professional obsolescence (Pazy 1990). As noted by Pazy, if the threat is too high, IT professionals may escape, withdraw or adopt rigid responses. One possible withdrawal or escape route could be turnaway. If the threat is too low, it may have a numbing effect on IT professionals who are unlikely to be motivated to update their IT competencies. Thus, future research could adopt an experimental approach to study the relationship between the magnitudes of threat and their consequences.

REFERENCES

1. Ang, S., and Slaughter, S. 2000. "The Missing Context of Information Technology Personnel: A Review and Future Directions for Research," in: *Framing the Domains of IT Management: Projecting the Future through the Past*, R.W. Zmud (ed.). Cincinnati, Ohio: Pinnaflex Educational Resources, pp. 305-327.
2. Babbie, E. 1992. *The Practice of Social Research*, (6th ed.). Belmont, CA: Wadsworth, Inc.
3. Bagozzi, R.P., and Yi, Y. 1988. "On the Evaluation of Structural Equation Models," *Journal of the Academy of Marketing Science* (16:1 (Spring)), pp. 74-94.
4. Chin, W.W. 1998. "Issues and Opinion on Structural Equation Modeling," *MIS Quarterly* (22:1), March, pp. VII-XVI.
5. Davey, G.C.L. 1993. "A Comparison of 3 Cognitive Appraisal Strategies - the Role of Threat Devaluation in Problem-Focused Coping," *Personality and Individual Differences* (14:4), April, pp. 535-546.
6. Dubin, S.S. 1990. "Maintaining Competence through Updating," in: *Maintaining Professional Competence*, S.L. Willis and S.S. Dubin (eds.). San Francisco: Jossey-Bass, pp. 44-48.
7. Folkman, S., and Lazarus, R.S. 1988. "Coping as a Mediator of Emotion," *Journal of Personality and Social Psychology* (54:3), pp. 466-475.
8. Fornell, C., and Larcker, D.F. 1981. "Evaluating Structural Equation Models with Observable Variables and Measurement Error," *Journal of Marketing Research* (18), pp. 39-50.
9. Gefen, D., Straub, D., and Boudreau, M.-C. 2000. "Structural Equation Modeling and Regression: Guidelines for Research Practice," *Communications of the Association for Information Systems* (4:October), p. .
10. Hair, J.F., Jr., Anderson, R.E., Tatham, R.L., and Black, W.C. 1995. *Multivariate Data Analysis with Readings*, (4th ed.). Englewood Cliffs, NJ: Prentice Hall.
11. Herman, J.L., and Tetrick, L.E. 2009. "Problem-Focused Versus Emotion-Focused Coping Strategies and Repatriation Adjustment," *Human Resource Management* (48:1), Jan-Feb, pp. 69-88.
12. Hobfoll, S. 2002. "Social and Psychological Resources and Adaptations," *Review of General Psychology* (6), pp. 302-324.
13. Hobfoll, S.E., and Freedy, J. 1993. "Conservation of Resources - a General Stress Theory Applied to Burnout," in: *Professional Burnout : Recent Developments in Theory and Research*, W.B. Schaufeli, C. Maslach and T. Marek (eds.). pp. 115-129.
14. Hulland, J. 1999. "Use of Partial Least Squares (PLS) in Strategic Management Research: A Review of Four Recent Studies," *Strategic Management Journal* (20), pp. 195-204.
15. Jex, S.M., and Yankelevich, M. 2008. "Work Stress," in: *The Sage Handbook of Organizational Behavior*, J. Barling and C.L. Cooper (eds.). Thousand Oaks, CA.: SAGE Publications, pp. 498-518.
16. Joseph, D., Ng, K.M., Koh, S.K.C., and Ang, S. 2007. "Turnover of Information Technology Professionals: A Narrative Review, Meta-Analytic Structural Equation Modeling, and Model Development," *MIS Quarterly* (31:3), pp. 547-577.
17. Lazarus, R.S., and Folkman, S. 1984. *Stress, Appraisal, and Coping*. New York, NY.: Springer.
18. Lee, D.M.S., Trauth, E.M., and Farwell, D. 1995. "Critical Skills and Knowledge Requirements of IS Professionals - a Joint Academic-Industry Investigation," *MIS Quarterly* (19:3), Sep, pp. 313-340.
19. Lee, R.T., and Ashforth, B.E. 1996. "A Meta-Analytic Examination of the Correlates of the Three Dimensions of Job Burnout," *Journal of Applied Psychology* (81:2), Apr, pp. 123-133.
20. Lopes, L.L. 1996. "When Time Is of the Essence: Averaging, Aspiration, and the Short Run," *Organizational Behavior and Human Decision Processes* (65:3), Mar, pp. 179-189.
21. Luria, G., and Torjman, A. 2009. "Resources and Coping with Stressful Events," *Journal of Organizational Behavior* (30:6), Aug, pp. 685-707.
22. March, J., and Simon, H.A. 1958. *Organizations*. New York: Wiley.

23. Mithas, S., and Krishnan, M.S. 2008. "Human Capital and Institutional Effects in the Compensation of Information Technology Professionals in the United States," *Management Science* (54:3), Mar, pp. 415-428.
24. Nelson, R.R. 1991. "Educational Needs as Perceived by IS and End-User Personnel: A Survey of Knowledge and Skill Requirements," *MIS Quarterly* (15:4), pp. 503-525.
25. Pazy, A. 1990. "The Threat of Professional Obsolescence - How Do Professionals at Different Career Stages Experience IT and Cope with IT," *Human Resource Management* (29:3), Fal, pp. 251-269.
26. Pazy, A. 1994. "Cognitive Schemata of Professional Obsolescence," *Human Relations* (47), pp. 1167-1199.
27. Pazy, A. 1996. "Concept and Career-Stage Differentiation in Obsolescence Research," *Journal of Organizational Behavior* (17:1), Jan, pp. 59-78.
28. Rhodes, S., and Doering, M. 1993. "Intention to Change Careers: Determinants and Process," *Career Development Quarterly* (42), pp. 76-92.
29. Rusbult, C.E., Farrell, D., Rogers, G., and Mainouss, A.G. 1988. "Impact of Exchange Variables on Exit, Voice, Loyalty, and Neglect: An Integrative Model of Responses to Declining Job Satisfaction," *Academy of management Journal* (31:3), pp. 589-599.
30. Shiloh, S., Berkenstadt, M., Meiran, N., BatMiriamKatznelson, M., and Goldman, B. 1997. "Mediating Effects of Perceived Personal Control in Coping with a Health Threat: The Case of Genetic Counseling," *Journal of Applied Social Psychology* (27:13), Jul, pp. 1146-1174.
31. Tsai, H.Y., Compeau, D., and Haggerty, N. 2007. "Of Races to Run and Battles to Be Won: Technical Skill Updating, Stress, and Coping of It Professionals," *Human Resource Management* (46:3), Fal, pp. 395-409.
32. Zabusky, S., and Barley, S.R. 1996. "Redefining Success Ethnographic Observations on the Careers of Technicians," in: *Broken Ladders: Managerial Careers in the New Economy*, P. Osterman (ed.). New York: Oxford University Press, pp. 185-214.