The Relationships Among Locus Of Control, Perceptions Of Stress, And Performance

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Abstract

This study examines the relationship among locus of control (Rotter, 1966), perceived stress, and performance of 206 newly-hired juniors (106 males and 100 females) from two Big-Six accounting firms. The data indicate that the more internal the individual's locus of control, the more that individual perceived stress as leading to higher achievements. Positive perceptions of stress were also related to higher grade point averages.

Introduction

The ability to function in an environment of stress and pressure "may be a prerequisite to a long career" in public accounting (Kelley and Seiler, 1982, p. 32). While locus of control (Rotter, 1966) has been considered in participative budgeting (Murray, 1990; Licata, et al., 1986; Brownell, 1981, 1982), there is research in psychology that links locus of control to stress. This study expands the prior research by considering locus of control in the context of the stress and achievement experienced in college.

Carcello et al. (1991) find that stress ranks third as a response to what auditors liked least about public accounting and as a reason for leaving public accounting. Kelley and Seiler (1982, 32) found that "ex-public accountants

perceived higher levels of time-budget pressure . . . than did those who stayed." Research (Ivancevich and Matteson, 1980) suggests that stress and locus of control are related.

To the extent that an individual judges himself/[herself] to have control or mastery in a situation, the probability is that he/[she] will be less likely to perceive the situation as threatening or stress-inducing (Chan, 1977, p. 93)

In a meta-analysis of participation-in-work studies, Spector (1986, 1015) suggests that "perceived control [can] lead to greater satisfaction, commitment, involvement, motivation and performance, and lower physical and emotional distress, role stress, and withdrawal." Although stress can lead to frustration and increase the likelihood of an individual quitting, research indicates that these effects should be tempered by locus of control, since internal-locus-of-control

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individuals react more constructively to frustration (Anderson, 1977). However, while there has been considerable research on stress and locus of control outside of accounting, this area is untouched in accounting research.

This research used a modified version of Hendrix et al.'s (1985) and Snead and Harrell's (1991) stress questionnaire that asked newly-hired juniors their perceptions of the stress they experienced during college and in general life. It examines the proposed influence of locus of control on perceived stress and personal competence (Bernardi, forthcoming) for a group of 206 newly-hired juniors employed by Big-6 accounting firms. If the perceptions of stress for these newly-hired juniors are related to their locus of control, then one could gain a valuable insight into the factors associated with stress and provide an input to the accounting profession.

Relevant Literature

As a personality factor, locus of control represents an individual's beliefs concerning his or her control over their environment (Lefcourt, 1982). These beliefs range from weak or no personal control (external locus of control) to strong personal control (internal locus of control). Internal-locus-of-control individuals believe that "reinforcements are contingent upon their own behavior, capacities, or attributes" (Rotter, 1966, 618). External-locus-of-control individuals believe that "reinforcements are not under their personal control but rather are under the control of powerful others, luck, chance, fate, etc." (Rotter, 1966, 618). Since internal-locus-of-control individuals believe they can directly influence the events in their lives, they also recognize that experiences are related and accept responsibility for events (Davis and Davis, 1972). In contrast, external-locus-of-control individuals blame their environment for failures (Phares, et al., 1971). This is because external-locus-of-control individuals believe outcomes are not related to their actions (Rotter, 1966).¹

It seems that there are individuals who thrive in stressful environments or are not affected by stress. Research finds correlations between stress and locus of control; externality (i.e., more fate, chance, luck, or powerful others oriented) is positively correlated with stress (Evans and Coman, 1991; Jennings, 1990) and the burnout dimensions of Emotional Exhaustion Frequency and Intensity (Lunenburg and Cadavid, 1992; St.-Yves, et al., 1989). Externality is also negatively related to Personal Accomplishment Frequency and Intensity (Lunenburg and Cadavid). In contrast to the stronger correlations among external locus of control, distress, and stressor frequency for students (Grannis, 1992), internal locus of control has been shown to be positively associated with lower perceived stress and correspondingly higher job satisfaction (Rees and Cooper, 1992; Schafer and McKenna, 1991). Internals may be more satisfied and perceive less emotional exhaustion because they believe they have some control over their environment (Whitebook, et al., 1982). If these findings are robust, then internal-locus-of-control individuals should experience less stress than external-locus-control individuals (all hypotheses stated in their alternate form).

H1: Internal locus of control individuals will perceive the same stress as external locus of control individuals.

An individual's perceptions of stress may also be affected by how that individual naturally copes with the stress in his/her life. Since internal-locus-of-control individuals seem to experience lower anxiety (Toerstand, et al., 1989; Jones and Page, 1986), internal locus of control could function as a stress filter (Daniels and Guppy, 1992). This could explain why, even though externals are more likely to be threatened by stressors, internals are challenged by stressors (Vitaliano, et al., 1987). If these findings on job-related stress apply to college stress, then internal-locus-of-control individuals should perceive lower college stress, which would suggest a relationship between perceptions of stress in college and on the job.

Snead and Harrell (1991) found that undesirable work-and-life stress were significant in determining an individual's job satisfaction. Their model indicates that individuals who perceive stress as being associated with higher performance are more satisfied with their jobs. Furthermore, increased job satisfaction positively influences an individual's willingness to work longer hours, and both job satisfaction and the willingness to work longer hours were associated with higher career intentions. Since internal-locus-of-control individuals believe they can control their environment, their perceptions of stress as a positive factor should be higher than for external-locus-of-control individuals.

H2: Perceptions of stress (either positive or negative) will not be associated with and individual's locus of control.

If the level of perceived stress is influenced by one's locus of control (Bernardi, forthcoming; Pilisuk, et al., 1993; Schafer and McKenna, 1991), then reduced perceptions of stress and increased effectiveness should be correlated with internal locus of control (Sadowski, et al., 1986). While the performance of external-locus-of-control students decreased when distractions were present during an academic task, internal-locus-of-control students were able to work through distractions (Wolk and Bloom, 1978). Since internals can continue despite distractions that could otherwise cause stress, students who report lower levels of stress should have higher grade point averages (Grannis, 1992).

H3: Positive perceptions of stress will not be associated with increased performance (grade point averages).

Research indicates that gender could play a role in the perceptions of stress. Jones and Page (1986), Linder (1986), and Doherty and Baldwin (1985) report that in general women are more external in their locus of control. However, prior research also finds that accountants' cognitive style may differ considerably from the

norms for the general population. For instance, while Rest (1986) notes that on average females' level of moral development is only slightly higher than males, most research in accounting indicates that females score significantly higher than males (Bernardi and Arnold, forthcoming; Bernardi, 1995; Etherington and Schulting, 1995; Sweeney, 1995; Shaub, 1994; Lampe and Finn, 1992). High moral development is associated with internal locus of control (Bernardi, 1991; Ross, 1977; Bloomberg and Soneson, 1976). These contradictory findings suggest that gender should be controlled for in the analysis.

Subjects and Measures

Since prior research in accounting dealing with perceptions of stress (Snead and Harrell, 1991) examined only a small group of experienced auditors, this research studied the perceptions of newly-hired juniors to develop a baseline for future research. The sample includes 206 newly-hired juniors. The study used a three-part questionnaire with a return envelope, which was given to the subjects during the first two weeks of their initial training. The response rate for the questionnaire was 63.7 percent. Table 1 shows the subjects' demographic characteristics.

Table 1
Demographic Characteristics

Characteristic		Males	Females
Average age	(yr)	22.6	22.5
Sample	(n)	106	100
Education:			
Bachelor's	(%)	100.0	100.0
Master's	(%)	6.6	7.0
GPA:*			
4.00-3.50	(%)	46.2	53.0
3.49-3.00	(%)	43.4	41.0
2.99-2.50	(%)	3.8	0.0
Not reported	(%)	6.6	6.0

* Overall Undergraduate GPA

The second part of the data gathering was the Internal-External Scale Test (Locus of Control Test, Rotter, 1966). Rotter's Locus of Control Test has no time limitation and consists of 29 questions. Of these 29 questions, six serve as a diversion from the test's intent, and are not part of an individual's test score. An individual's score on the locus of control test is the number of external responses chosen by the subject. Locus of control scores range from 0 (most internal) to 23 (most external); so that, lower scores indicate internal locus of control.

Snead and Harrell found that subjects' responses to four questions on work-and-general-life stress were associated with job satisfaction, willingness to work longer hours, and career intentions. The third part of the questionnaire asked four questions on college-and-life stress (Appendix) that were adapted from Hendrix et al.'s (1985) and Snead and Harrell's (1991) questionnaires. These questions were used to measure stress in college and general life stress. The first two questions substituted the term 'college' for 'job' in Snead and Harrell's questions. The first and third questions dealt with the level of perceived stress in college and in life in general. The second and fourth questions dealt with how that stress was perceived (e.g., positively or negatively) in college and in life in general. The dependent variables examined in the research hypotheses (Hx) are: STRESS1: The level of perceived stress in college (H1). STRESS2: Whether or not the stress experienced in college was perceived as positive or negative (H2). STRESS3: The level of perceived stress in general life (H1). STRESS4: Whether or not the stress experienced in general life was perceived as positive or negative (H2). GPA: Student's cumulative grade point average in college (H3).

Data Analysis

Table 2 presents the juniors' average locus of control and their mean responses to the four stress questions (Appendix). The data indicate that, except for locus of control and STRESS1, males and females had similar per-

ceptions of stress. On average, the newly-hired males were more internal in their locus of control ($p = .02$) than newly-hired females.² The data indicate that a subject's locus of control was not related to either the level of stress experienced in college (STRESS1, $p = .92$) or in their personal lives (STRESS3, $p = .80$). Although male juniors rated the stress they experienced in college (STRESS1) lower than female juniors ($p < .005$), gender was not a factor ($p = .58$) for the level of stress juniors experienced in their personal lives (STRESS3).

Table 2
Survey Data by Gender

	Males	Females
LOC	10.4	11.8
STRESS1	5.0	5.9
STRESS2	6.5	6.4
STRESS3	4.6	4.7
STRESS4	5.2	5.4

Definitions of stress are in the Appendix.

Juniors' responses to the two research instruments suggest a relationship between perceptions of stress and locus of control test (Table 3). As locus of control becomes more internal, stress is perceived as being positive (i.e., leads to higher achievement) for both the stress experienced in college (STRESS2, $p = .0001$) and the stress experienced in their personal lives (STRESS4, $p = .0021$). However, while both males and females had approximately equal perceptions of stress being positive factor (Table 2) in college (STRESS2), locus of control explained 22.3% of the variation for males but was not a factor for females. Interestingly, the opposite was true for perceptions of stress in general life (STRESS4); locus of control explained twice the variation for females and was only marginally significant for males.

Individuals who perceived stress (STRESS2) as a positive factor had higher GPAs

(Table 4); this was true for both males ($p = .0003$) and females ($p = .0090$). However, perceptions of stress as a positive factor (STRESS2) explained nearly twice the amount of variation for newly-hired males as for newly-hired females.

Table 3
The Relationship Between Perceptions of Stress and Locus of Control

	R2	Estimate	Prob
STRESS2			
Overall Sample	.081	-0.12	.0001
All Males	.223	-0.19	.0001
All Females	.004	-0.03	.5483
STRESS4			
Overall Sample	.049	-0.11	.0021
All Males	.033	-0.09	.0613
All Females	.064	-0.13	.0109

STRESSx was the dependent variable and LOC was the independent variable.

Table 4
Relationship Between STRESS2 and GPA

	R2	Estimate	Prob
Overall Sample	.096	0.05	.0001
All Males	.128	0.06	.0003
All Females	.072	0.04	.0090

GPA was the dependent variable and STRESS2 the independent variable.

Given the gender differences in locus of control and perceived stress, the data were analyzed using Snead and Harrell's (1991) definition of undesirable stress. That is, each junior's perception of the level of stress experienced was subtracted from their perception of stress as a positive factor.

Undesirable College Stress = STRESS2 - STRESS1

Undesirable General-Life Stress = STRESS4 - STRESS3

Although there was no gender difference in undesirable general-life stress (i.e., STRESS4 - STRESS3), males perceived less undesirable stress than females in college (i.e., STRESS2 - STRESS1) than females ($p = .02$). These results agree with Snead and Harrell's findings for undesirable general-life stress. However, while Snead and Harrell found no gender difference in undesirable work stress for a group of experienced accountants, this research notes a significant gender difference in undesirable college stress for a group of newly-hired juniors.

Discussion

This research provides some interesting results. First, although males rated the stress they experienced in college lower than females, there was no difference in perceptions for general life stress. Second, while locus of control explained nearly one quarter of the variation perceptions of college stress (STRESS2) for males and none for females, it explained twice the variation in perceptions of general life stress (STRESS4) for females. Finally, perceptions of stress as a positive factor (STRESS2) explained twice the amount of variation in college GPA for males.

Individuals who left or intended to leave public accounting perceived more pressure (Kelley and Seiler, 1982) and were less satisfied with their jobs (Snead and Harrell, 1991). If the perceptions of stress are carried from college into public accounting, the differences noted could have significant implications. Since Bernardi (1997) found only a marginal ($p < .10$) gender difference in locus of control at the senior and manager levels, the difference in juniors may indicate that differential attrition is occurring or that females' locus of control is becoming more internal with experience.

Prior research outside of accounting finds that external-locus-of-control individuals were more affected by stress, less satisfied with their jobs, and more likely to quit. Henderson et al. (1992) suggest that stress management workshops can result in better coping skills, increased confidence, and taking responsibility for one's achievements. This could reduce the perceived negative effects of stress and reduce departures from our profession. When the author inquired into the use of such programs by large public accounting firms, representatives of these firms indicated that it was "probably something they ought to consider in the future."

Suggestions for Future Research

There are at least two limitations inherent in this research and its design that should be addressed in future research. The first limitation is that the theory development section relies heavily on prior research that is either outside of accounting or did not use auditors. Second, the samples came from national accounting firms and may not represent the entire accounting profession.

Future research should also expand the findings of this research. An important extension of this research is to determine whether or not one can intervene and increase auditors' tendency towards internal locus of control. A second area of research would be to examine why locus of control is not correlated to females' perceptions of stress as a positive factor. The data indicate that further research is necessary to determine the associations among locus of control, stress, and career intentions in a longitudinal study. This research should also investigate whether or not differential attrition is occurring or whether females' locus of control becomes more internal with promotion.

Footnotes

1. Internal (external)-locus-of-control individuals are also referred to as internals (externals).

2. The General Linear Model (GLM) was used because "there are unequal number of observations for the different combinations of class variables [gender and degree] specified in the model statement" (SAS Institute, 1985, p. 437). One-sided tests were used to evaluate locus of control differences between males and females.

References

1. Anderson, C. R., *Stress: A New Positive Approach*. Sterling, New York, 1977.
2. Bernardi, R. A., "A Theoretical Model for the Relationship among: Stress, Locus of Control, and Auditor Longevity," *Business Forum*, (forthcoming).
3. _____, "Locus of Control as a Factor in Auditor Longevity: An Exploratory Study," Working paper State University of New York at Plattsburgh, 1997.
4. _____, "Ethics Research in Accounting: A Note on Using the Defining Issues Test," *Accounting Educators' Journal*, 2, pp. 1-16, 1995.
5. _____, "Fraud Detection: An Experiment Testing Differences in Perceived Client Integrity and Competence, Individual Auditor Cognitive Style and Experience, and Accounting Firms." Ph.D. diss., Union College of Union University, Schenectady, NY, 1991.
6. _____, and Arnold, D. F., "An Examination of Moral Development within Public Accounting by Gender, Staff Level, and Firm," *Contemporary Accounting Research*, (forthcoming).
7. Brownwell, P., "Participation in Budgeting, Locus of Control, and Organizational Effectiveness," *The Accounting Review*, October, pp. 844-860, 1981.
8. _____, "A Field Study Examination of Budgeting Participation and Locus of Control," *The Accounting Review*, October, pp. 766-777, 1982.
9. Carcello, J. V., J. E. Copeland, R. H. Hermanson, and D. H. Turner, "A Public Accounting Career: The Gap between Stu-

- dent Expectations and Accounting Staff Experiences," *Accounting Horizons*, September, pp. 1-11, 1991.
10. Chan, K. B., "Individual Differences in Reactions to Stress and their Personality and Situational Determinants," *Social Science and Medicine*, 11, pp. 89-103, 1977.
 11. Daniels, K., and A. Guppy, "Control, Information-Seeking Preferences, Occupational Stressors, and Psychological Well-Being," *Work and Stress*, October-December, pp. 347-353, 1992.
 12. Davis, W. L., and D. E. Davis, "Internal-External Control and Attribution of Responsibility for Success or Failure," *Journal of Personality*, 40, pp. 123-136, 1972.
 13. Etherington, L. D., and L. Shulting, "Ethical Development of Accountants," *Research on Accounting Ethics*, 1, pp. 235-251, 1995.
 14. Evans, B. J., and G. J. Coman, "General versus Specific Measures of Occupational Stress: An Australian Police Survey," *Stress Medicine*, January, pp. 11-20, 1993.
 15. Grannis, J. C., "Students' Stress, Distress, and Achievement in an Urban Intermediate School," *Journal of Early Adolescence*, February, pp. 4-27, 1992.
 16. Henderson, P. A., T. J. Kelbey, and K. M. Engebretson, "Effects of a Stress-Control Program on Children's Locus of Control, Self-Concept, and Coping Behavior," *The School Counselor*, November, pp. 125-130, 1992.
 17. Hendrix, W., N. Ovalle, and R. Troxler, "Behavioral and Psychological Consequences of Stress and its Antecedent Factors," *Journal of Applied Psychology*, 70 (1), pp. 188-201, 1985.
 18. Ivancevich, J. M., and M. T. Matteson, *Stress and Work: A Managerial Perspective*, Scott, Foresman, and Co., Glenview, IL, 1980.
 19. Jennings, B. M., "Stress, Locus of Control, Social Support, and Psychological Symptoms among Head Nurses," *Research in Nursing and Health*, December, pp. 393-401, 1990.
 20. Jones, C., and S. Page, "Locus of Control, Assertiveness, and Anxiety as Personality Variables in Stress-Related Headaches," *Headache*, July, pp. 369-374, 1986.
 21. Kelley, T., and R. Seiler, "Auditor Stress and Time Budgets," *CPA Journal*, pp. 24-32, 1982.
 22. Lampe, J. C., and D. W. Finn, "Reply," *Auditing: A Journal of Practice and Theory*, 11 (Supplement), pp. 68-73, 1992.
 23. Lefcourt, H., *Locus of control: Current Trends in Theory and Research*, 2nd ed., Lawrence Erlbaum, Hillsdale, NJ, 1982.
 24. Licata, M. P., R. H. Strawser, and R. B. Welker, "A Note on Participation in Budgeting and Locus of Control," *The Accounting Review*, Fall, pp. 112-117, 1986.
 25. Murray, D., "The Performance Effects of Participative Budgeting: An Integration of Intervening and Moderating Variables," *Behavioral Research in Accounting*, 2, pp. 104-123, 1990.
 26. Phares, E. J., K. G. Wilson, and N. W. Klyver, "Internal-External Control and the Attribution of Blame under Neutral and Distractive Conditions," *Journal of Personality and Social Psychology*, 18, pp. 285-288, 1971.
 27. Pilisuk, M., M. B. Montgomery, S. H. Parks, and C. Acredolo, "Locus of Control, Life Stress, and Social Networks: Gender Differences in the Health Status of the Elderly," *Sex Roles*, February, pp. 147-166, 1993.
 28. Rotter, J. B., "Generalized Expectancies for Internal versus External Control of Reinforcement," *Psychological Monographs* 80, 1966.
 29. Sadowski, C. J., M. W. Blackwell, and J. L. Willard, "Assessing Locus of Control, Perceived Stress, and Performance of Student Teachers," *Education*, Spring, pp. 352-353, 1986.
 30. SAS Institute, "The GLM procedure," In *SAS User's Guide: Statistics*, 5th ed., SAS Institute, Cary, NC, pp. 433-506, 1985.
 31. Shaub, M., "An Analysis of the Association of Traditional Demographic Variables

- with Moral Reasoning of Auditing Students and Auditors," *Journal of Accounting Education*, 1 (Winter), pp. 1-26, 1994.
32. St. Yves, A., M. H. Freeston, F. Godbout, and L. Poulin, "Externality and Burnout Among Dentists," *Psychological Reports*, December, pp. 755-758, 1989.
 33. Schafer, W. E., and J. F. McKenna, "Perceived Energy and Stress Resistance: A Study of City Managers," *Journal of Social Behavior and Personality*, June, pp. 271-282, 1991.
 34. Snead, K., and A. Harrell, "The Impact of Psychological Factors on the Job Satisfaction of Senior Auditors," *Behavioral Research in Accounting*, 3, pp. 85-96, 1991.
 35. Spector, P. E., "Perceived Control by Employees: A Meta-Analysis of Studies Concerning Autonomy and Participation at Work," *Human Relations*, November, pp. 1005-1016, 1986.
 36. Sweeney, J., "The Moral Expertise of Auditors: An Exploratory Analysis," *Research on Accounting Ethics*, 1, pp. 213-234, 1995.
 37. Vitaliano, P. P., J. Russo, and R. D. Maiuro, "Locus of Control, Type of Stressor, and Appraisal within a Cognitive-Phenomenological Model of Stress," *Journal of Research in Personality*, June, pp. 224-237, 1987.
 38. Whitebook, M., C. Howes, R. Darrah, and J. Friedman, "Caring for the Caregivers: Staff Burnout in Child Care," In L. Katz (ed.), *Current Topics in Early Childhood Education*, Ablex Publishing, Norwood, NJ, 1982.
 39. Wolk, S., and D. Bloom, "The Interactive Effects of Locus of Control and Situational Stress upon Performance Accuracy and Time," *Journal of Personality*, 46, pp. 279-298, 1978.

Appendix

Stress Questionnaire

1. Overall, I experienced a great deal of stress in college.

1	2	3	4	5	6	7	8	9
Strongly								Strongly
Disagree								Agree

2. The stress I experienced in college was usually good stress because it led to higher achievement.

1	2	3	4	5	6	7	8	9
Strongly								Strongly
Disagree								Agree

3. Overall, I experience a great deal of stress in my personal life (when I am not at work).

1	2	3	4	5	6	7	8	9
Strongly								Strongly
Disagree								Agree

4. The stress I experience in my personal life (when I am not at work) is usually good stress because it led to higher personal growth.

1	2	3	4	5	6	7	8	9
Strongly								Strongly
Disagree								Agree

Adapted from Snead and Harrell, 1991