RELATIONSHIP BETWEEN STRESS COPING FACTORS WITH STRESS LEVEL DURING PRACTICAL TRAINING AMONG TRAINEE TEACHERS: A PLS-SEM APPROACH

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ABSTRACT

Practicum is a highly stressful situation whereby trainee teachers are subjected to a high quality standard, deals with numerous students' behaviour, adapt with the school climate and so forth. In this stress coping factors comprising of self-efficacy, subjective well-being and emotional intelligence are associated with practicum stress experienced by 137 trainee teachers in the Sabah Teacher Education Institutions (TEIs). Resiliency Scale for Young Adults (RSYA), Teachers' Sense of Efficacy Scale, the Emotional Intelligence Traits, Satisfaction with Life Scale (SWLS) and Rating Pre-Service Teacher Events for Stress Scale were adapted and used in this study. Collected data were analysed using the PLS-SEM approach. The result showed self-efficacy, emotional intelligence, subjective well-being and stress are moderate but resiliency has moderately low level. Self-efficacy and subjective well-being are significant predictors of resilience and stress, however, emotional intelligence is not. It is hoped that this study will provide more understanding about stress and stress coping abilities so that appropriate orientation, content, and practice during practicum can be planned and implemented in an effort to prepare high quality educators.

Keywords: practicum, stress, stress coping factors, resiliency, self-efficacy, emotional intelligence, subjective wellbeing, PLS-SEM.

INTRODUCTION

The practicum is an important aspect of teachers' education (Farrell, 2008;). The practicum becomes the best avenue for them to examine and evaluate their knowledge and skills in actual teaching environment and aligning it to their personal educational philosophy and theories (Kabilan & Raja Izzaham, 2008; Kennedy, 1996; Goh & Matthews, 2011). The positive experience during practicum is related to the reinforcement of their intention to continue with the teaching profession but on the contrary, it may lead to turnover among the trainee teachers. Ong et al. (2004) stated that practicum promotes confidence and this in turn supports learning.

Although practicum seems to provide numerous benefits to the trainee teachers, it may also lead to stress (Caires et al., 2010). There are many studies in the past (Borg, 1990; Wendt & Bain, 1989; Capel, 1997; Morton et al., 1997; Malek & Ajmal, 2010) indicating the phenomenon of practicum stress. When stress is perceived highly, this could result in the teachers to quit the teaching course. Practicum becomes so stressful because there are many factors, internal and external causing teachers to be psychologically challenged. These factors include balancing demands from students, mentoring teachers, school administrators, supervisors and adapting to the new work environment (Klassen & Durksen, 2014).

LITERATURE REVIEW

It became imperative that teacher trainees develop coping ability to deal with the stressful situation during practicum. According to the numerous theoretical models to explain stress such as the Person-Environment Fit Theory (French & Kaplan, 1972; French et al., 1982; French & Kahn, 1962), the Lazarus Transactional Process Model (Lazarus & Folkman, 1984),the Spielberger State-Trait Process Model (Spielberger et al., 2002), the Karasek Demand-Control Model (Karasek & Theorell, 1990) and the National Institute of Occupational Safety and Health (NIOSH) Model (NIOSH, 2002), stress can be overcome by good coping strategies. According to Soave (2014), coping strategies may include resilience, self-efficacy, emotional intelligence and subjective well-being.

A resilient person is able to cope with practicum stress and continue to enjoy a positive and healthy life (Bonanno, 2012). Resilience is an important personal attribute for trainee teachers as it provides protection from stress and ensure that trainee teachers continue with their training program. According to Castro et al. (2010), teachers who are resilient showed greater coping ability.

Self-efficacy refers to an individual's perception and belief about something. In the context of teaching and learning, trainer teachers' self-efficacy refers to their perception and belief about the teaching practicum. Bandura' social cognitive theory (1986) provides the theoretical framework to support

one' behavior to be more effacious than others. According to Wood and Bandura (1989), individual who believes about his ability to become more motivated, to have cognitive resources and actions is more likely to be effacious, thus having more ability to perform a particular task for a period of time in order to attain a desired outcome. Teachers who have high efficacy will have confidence in his or her competency and show greater commitment towards their job, accepting innovation, give more efforts to teach and experience lower risk to burnout as well as being more satisfied with their work (Hoy & Spero, 2005; Skaalvik & Skaalvik, 2010; Tschannen-Moran & Woolfolk-Hoy, 2001).

Emotional intelligence has also been reported to help cope with stress. Weisenger (2000) explained emotional intelligence as the ability to sense, understand and apply forces behind emotions in daily practice. Emotion is used to deal with problems as individuals identify emotional mearning and comprehend them before attempting to solve problem (Salovey & Mayer, 1990). By employing emotion, a person can shape his or her behaviour and thinking processes to deal with stressful situation. Since trainee teachers faced stressful situation during practicum, emotional intelligence knowledge and practice can help them to overcome these challenges (Tan, Abd Aziz & Mahani, 2010).

Subjective well-being refers to happiness or satisfaction with life (Diener, 1984). Being happy is an armour against stress as it provides the individual with the ability to adapt to the changes in his or her life (Windle et al., 2010). Subjective well-being can strengthen resilience towards stress. Therefore, it is also regarded as a coping ability to manage the impacts of practicum stress.

Research Objectives

The research objectives are:
i.   To determine the level of resilience, self-efficacy, emotional intelligence, subjective wellbeing and stress among the trainee teachers;
ii.   To determine the relationships between resilience, self-efficacy, emotional intelligence and subjective wellbeing with teachers' stress during practicum.

METHODOLOGY

Research Design

The methodology uses PLS-SEM to examine the inter-relationships of numerous factors affecting trainee teachers' stress level during practicum training. These variables are inter-related and gives effect to the dependent variable or endogenous variable in the PLS-SEM context, namely: stress during practicum training.

Population and Sampling Procedures

The research population involves trainee teachers undergoing teaching course in four teacher education institutes in Sabah. The sampling method is purposive based on the name list of trainee teachers undergoing practicum training. For this study, the sample size is 137, adequate to represent all trainee teachers in the teacher education institutes in Sabah. The determination of the sample is based on Cohen's principle of sample size adequacy (Ringle, Sarstedt, & Straub, 2012).

Research Instruments

The main research instrument is questionnaire. Practicum stress is measured using Cohen's (1988) Perceived Stress Scale which comprises of 10 items, popularly known as PSS-10. The Scale showed good reliability with Cronbach Alpha between 0.78 to 0.91 and reliability coefficient for test-retest between 0.55 and 0.85 (Cohen, Kamarck & Mermelstein, 1983). The 25-item Resiliency Scale is used to assess trainee teachers' resilience (Wagnild & Young, 1990, 1993). Tschannen-Moran and Hoy's (2001) Teachers' Sense of Efficacy Scale consisting of 12 items is used to measure the trainee teachers' sef-efficacy. Besided that, the Emotional Intelligence Traits Questionnaire is used to determine the trainee teachers' emotional intelligence (Biggart, Corr, O'Brien & Cooper, 2010; Cooper & Petrides, 2010) whereas the Satisfaction with Life Scale (SWLS) is used to measure current satisfaction with life among the trainee teachers. This scale was developed by Diener, Emmons, Larsen & Griffin (1985).

Data Collection Procedures

Data collection was carried out after getting written approval from the State Education Department to ensure ethical procedures in research implementation are adhered to. The questionnaires were distributed and collected after three weeks, then checked to ensure that all have been filled in completely.

Data Analyses Procedures

Data analyses use statistical software like IBM SPSS 21.0 and PLS-SEM 3.0. Descriptive statistical analysis determines the demographic profiles of the respondents. It is also used to determine the levels of variables using mean. Covariance analyses using PLS-SEM determine the relationship between variables.

RESULTS

Demographic Profiles of the Respondents

The respondents comprised of 137 trainee teachers with 68.6% females and 31.4% males. Majority of the respondents (96.4%) are between 25 and 30 years old and only 3.7% are above 30 years old. The trainee teachers major in Mathematics (51.8%), TESL (15.4%) and other subjects (32.8%).

Descriptive Result of the Research Variables

Table 1 below shows the level of self-efficacy, subjective well-being, emotional intelligence, resilience and stress. The result showed moderate levels of self-efficacy, subjective well-being, emotional intelligence,and stress whereas resiliency is moderately low.

Table 1: Self-Efficacy, Subjective Well-Being, Emotional Intelligence, Resilience and Stress Levels among the Respondents

Variables	Scale Range	Mean ± Std. Dev.	Level
Self-efficacy	1 – 9	5.822 ± 1.078	Moderate
Subjective well-being	1 – 7	4.856 ± 0.848	Moderate
Emotional Intelligence	1 – 7	4.876 ± 0.556	Moderate
Resilience	25 – 175	123.891 ± 18.807	Moderate Low
Stress	0 – 4	2.109 ± 0.574	Moderate

Use of PLS-SEM to Construct the Structural Model

Table 2 presents a summary of the values for reflective model measurement. Although all variable showed good internal consistency, only self-efficacy and subjective wellbeing have satisfactory indicator reliability. There are weak and moderate outer oadings in Resilience, emotional intelligence and stress indicators. The value of AVE for all latent variables showed acceptable values except for emotional intelligence with AVE < 0.05. Heterotrait Monotrait (HTMT) test showed that all values are less than 0.85, indicating acceptable discriminant validity. Overall, the assessment of the reflective measurement models showed satisfactory result for self-efficacy and subjective wellbeing with minor adjustment of indicators for resilience, emotional intelligence and stress.

Table 2: Assessment of the Reflective Measurement Model

Latent Variables	Internal Consistency (CR)	Indicator Reliability (Outer Loadings)	Convergent Validity (AVE)	Discriminant Validity (HTMT)
Resilience	0.962	An item (DT11, OL = 0.376) is deleted, 7 items retained (OL = <0.708)	0.506	Yes
Emotional Intelligence	0.950	25 items revised ((OL = <0.708).	0.392	Yes
Self-Efficacy	0.969	All 12 items have outer loading > 0.708	0.722	Yes
Subjective Wellbeing	0.938	All 5 items have outer loading > 0.708	0.751	Yes
Stress	0.937	9 items have outer loading >0.708. Only one item has OL < 0.708) (S8, OL= 0.675) which was retained	0.598	Yes

The reflective measure model is assessed based on the convergent validity which is given by its average variance extracted (AVE). Additionally, significance and relevance of the outer weights and the collinearity among the indicators are also referred to. It is shown that the convergent validity indicated satisfactory values of both composite reliability and AVE for resilience, self-efficacy, subjective well-being and stress whereas for emotional intelligence, the composite reliability is not supported with an acceptable AVE (< 0.5).

The significance and relevance of the outer weights was determined through bootstrapping analysis. Table 3 presents the bootstrapping analysis result. Emotional intelligence is shown as an insignificant predictor of resilience and stress. Resilience is also not a significant predictor of stress. However, self-efficacy is a significant predictor of emotional intelligence, resilience, stress and subjective wellbeing. Furthermore, subjective wellbeing is a significant predictor of emotional intelligence, resilience and stress.

Table 3: Path Coefficient Result from Bootstrapping Analysis

Latent Variables	Original Sample (O)	Sample Mean (M)	Standard Errors (STERR)	T-statistics	P Values
EI → RESI	0.193	0.217	0.110	1.759	0.079
EI → STR	0.170	0.167	0.184	0.924	0.356
RESI → STR	0.180	0.175	0.160	1.126	0.261
SE → EI	0.405	0.406	0.090	4.481	0.000
SE → RESI	0.474	0.462	0.109	4.362	0.000
SE → STR	-0.344	-0.354	0.134	2.574	0.010
SE → SWB	0.451	0.456	0.083	5.462	0.000
SWB → EI	0.369	0.376	0.089	4.165	0.000
SWB → RESI	0.273	0.264	0.078	3.517	0.000
SWB → STR	-0.264	-0.261	0.130	2.030	0.043

The structural model is also assessed to determine the inter-relationship between the constructs. Collinearity among the indicators were assessed based on the Variance Inflation Factor (VIF) values which must be below five (VIF < 5). In Table 4 below, it is indicated that all values of VIF are below 5, thus concluding that there is no multi-collinearity among the indicators.

Table 4: Collinearity among Indicators in the Latent Variables

Latent Variables	Emotional Intelligence	Resilience	Self-Efficacy	Stress	Subjective Wellbeing
Emotional Intelligence		1.771		1.868	
Resilience				2.608	
Self-efficacy	1.256	1.546		2.133	1.000
Stress					
Subjective wellbeing	1.256	1.498		1.693	

The predictive capabilities of the structual model is determined based on the R square (R^2) and the effect size (f^2). In Figure 2, the R^2 values are indicated. It shows that self efficacy explains 20.4% of variance in subjective wellbeing and 43.5% of variance in emotional intelligence. Also, self-efficacy, emotional intelligence and subjective wellbeing contribute 61.7% to the variance in resilience. However, the combination of self-efficacy, emotional intelligence, subjective wellbeing and resilience only contributed 10.8% to the variance in stress. Based on the path coefficient, self-efficacy is moderately related to emotional intelligence ($\beta = 0.405$), resilience ($\beta = 0.474$) and subjective wellbeing ($\beta = 0.451$).
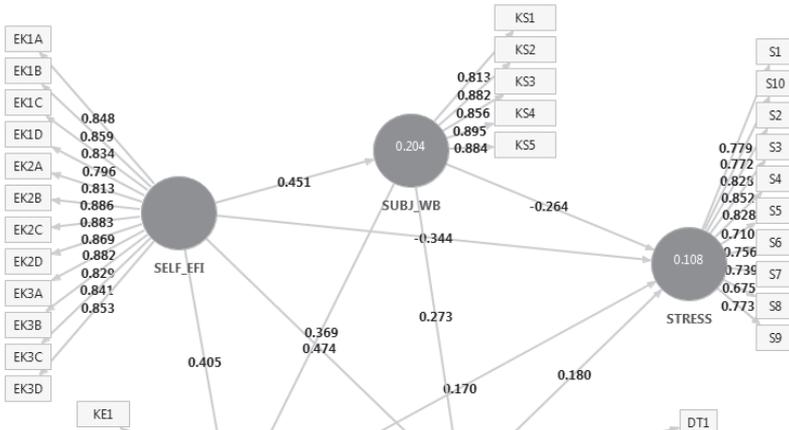
Figure 1: PLS Algortihm Indicating the R^2 values

Table 5 shows the effect size, f^2 which indicates the relative effect of each variables. Emotional intelligence has a greater effect on resilience compared to stress. Likewise, self-efficacy aslo has a greater impact on resilience than subjective wellbeing and emotional intelligence but least of all on stress. Subjective wellbeing has a greater impact on emotional intelligence than in resilience and stress. Overall, self-efficacy and subjective wellbeing give greater effect on resilience and stress compared to emotional intelligence.

Table 5: The Effect Size, f^2

Latent Variables	Emotional Intelligence	Resilience	Self-Efficacy	Stress	Subjective Wellbeing
Emotional Intelligence		0.055		0.017	
Resilience				0.014	
Self-efficacy	0.231	0.379		0.062	0.256
Stress					
Subjective wellbeing	0.192	0.130		0.046	

DISCUSSION

This study shows that resilience is moderately low while self-efficacy, emotional intelligence, subjective wellbeing and stress are all moderate. The trainee teachers' resilience, self-efficacy, emotional intelligence and subjective wellbeing may have been the combination of past personal experience before going into the teaching education course. Therefore, there is a mixture of trainee teachers with most of them having moderate levels.

This research is based on theoretical concepts that identifies a high possibility of inter-relationships between resilience, self-efficacy, emotional intelligence and emotional wellbeing and effect on stress. PLS-SEM as a statistical tool measured and determined the relevance of the structural model. The result showed that emotional intelligence is not a good predictor of stress as it yielded unfavourable outer loadings although AVE was good. However, self-efficacy and subjective wellbeing are better predictors of resilience and stress.

Overall, the result showed that self-efficacy is a strong exogenous latent variables to predict emotional intelligence, subjective wellbeing, resilience and stress. Subjective wellbeing can predict emotional intelligence, resilience and stress. In this study, emotional intelligence does not contribute significantly to resilience and stress. Further to that, the low resiliency among the trainee teachers do not have any significant impact on their stress.

CONCLUSION

Overall, the result in this study highlighted the relationships among the variables: between self efficacy and resilience, subjective wellbeing and stress. It has also shown that both self efficacy as well as subjective well-being are significant contributor to resilience and stress. However, emotional intelligence is an insignificant predictor of resilience and stress. Furthermore, the assessment in the reflective measurement model and the formative measurement model suggest that emotional intelligence does not have a good fit in the structural model. The path coefficient indicated that the inter-relationships between the latent variables do exist but the beta coefficients do not show strong relationship among these contructs. One of the limitations of this study could be contributed by the small sample size and therefore require more data collection to validate this initial finding. However, it has been shown through this study that both self-efficacy and subjective well-being play significant roles to explain resilience and stress. Therefore, it provides merits to include promotion of self-efficacy and subjective wellbeing in the teacher education curriculum as this can help to improve their resiliency and consequently manage stress effectively. Further to that, other theoretical supports of about other variables' contribution to stress such as school climate, workloads, etc should be explored.

REFERENCES

Bandura, A. (1986). *Social foundations of thought and action– A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.

Biggart, L., Corr, P., O'Brien, M. and Cooper, N. (2010). "Trait emotional intelligence and work– family conflict in fathers", *Personality and Individual Differences*, Vol. 48(8),: 911-6.

Bonanno, G. (2012). "Uses and abuses of resilience construct: Loss, trauma, and healthrelated adversities", *Social Science and Medicine*, Vol. 74: 53-6.

Borg, M. (1990). "Occupational stress in British educational settings", *A review. Educational Psychology*, 10: 103-126

Caires, S., Almeida, L. S. and Martins, C. (2010). "The Socioemotional Experiences of Student Teachers During Practicum: A Case of Reality Shock?", *The Journal of Educational Research*, Vol. 103(1): 17-27.

Capel, S. A. (1997). "Changes in students' anxieties and concerns after their first and second teaching practices", *Educational Research*, 39:211-228.

Castro, A., Kelly, J. and Shih, M. (2010). "Resilience strategies for teachers in high-needs areas", *Teaching and Teacher Education*, Vol. 26: 622-629.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.

Cohen, S., Kamarck, T. and Mermelstein, R. (1983). "A Global Measure of Perceived Stress", *Journal of Health and Social Behavior*, Vol. 24: 385-396

Cooper, A. and Petrides, K. V. (2010). "A psychometric analysis of the Trait Emotional Intelligence Questionnaire–Short Form (TEIQue–SF) using item response theory", *Journal of Personality Assessment*, Vol. 92(5): 449-457.

Diener, E. (1984). "Subjective Well-Being', *Psychological Bulletin*, Vol. 95: 542-575.

Diener, E., Emmons, R. A., Larsen, R. J. and Griffin, S. (1985). "The Satisfaction With Life Scale", *Journal of Personality and Assessment*, Vol. 49: 71-75.

Farrell, T. (2008). "Here's the book, go teach the class", ELT practicum support. *RELC*, Vol. 39(2): 226-241

Fives, H. (2003). "Exploring the relationships of teachers' efficacy, knowledge, and pedagogical beliefs: A multimethod study". *Unpublished Ph.D.,* University of Maryland, College Park, Maryland, United States.

French, J.R.P., Jr. and R.L.Kahn 1962. "A programmatic approach to studying the industrial environment and mental health", *Journal of Social Issues*, 18(3): 1–47.

French, J.R.P. and Caplan, R.D. (1972). "Occupational stress and individual strain", in A.J. Marrow (ed.), *The Failure of Success*, New York: Amacom, 30–66.

French, J. R. P., Caplan, R. D. and Harrison, R.V. (1982). *The Mechanisms of Job Stress and Strain*, London: Wiley.

French, J.R.P.. and Kahn, R.L. (1962). "A programmatic approach to studying the industrial environment and mental health", *Journal of Social Issues*, Vol. 18(3): 1–47.

Goh, P. S. and Matthews, B. (2011). "Listening To the Concerns of Student Teachers In Malaysia During TeachingPractice", *Australian Journal of Teacher Education*, Vol. 36(Iss. 3): Article 3.

Hoy A. W. and Spero, R. B. (2005). "Changes in teacher efficacy during the early years of teaching: a comparison of four measures", *Teaching and Teacher Education*, Vol. 21: 343-356.

Kabilan, M. K. and Raja Izzaham, R. I. (2008). "Challenges faced and strategies adopted by a Malaysian English language teacher during teaching practice", *English Language Teaching,* Vol. 1, June: 87-96.

Karasek, R. A. and Theorell, T. (1990). *Healthy work: Stress, productivity and the reconstruction of working life*. New York: Basic Books.

Kennedy, J. (1996). Meeting the needs of teacher trainees on teaching practice. In Tricia Hedge & Norman Whitney (Eds.), *Power, pedagogy & practice*. Oxford: Oxford University Press, 171-181.

Klassen, R. M. and Durksen, T. L. (2014). "Weekly self-efficacy and work stress during the teaching practicum: a mixed method study", *Learning and Instruction*, Vol. 33: 158-160.

Lazarus, R. S. and Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.

Malik, S. and Ajmal, F. (2010). "Levels, causes and coping strategies of stress during teaching practice", *Journal of Law and Psychology*, September: 17-25.

Mapfumo, J. S., Chitsiko, N. and Chireshe, R. (2012). "Teaching practice generated stressors and coping mechanisms among student teachers in Zimbabwe", *South African Journal of Education*, Vol. 32: 155-166.

Marshall, J. and Cooper, C. (1979). "Work experiences of middle and senior managers: the pressure and satisfaction", *International Management Review*, Vol. 19: 81–96.

Morton, L. L., Vesco, R., Williams, N. H. And Awender, M. A. (1997). "Student teachees anxieties related to class management, pedagogy, evaluation, and staff relations', *British Journal of Educational Psychology*, 67: 69-89.

NIOSH (2002), (URL), *Stress Definition*, available at: www.cdc.gov/niosh/stresswk.htm.

Ong, S. K., Ros, Amisha, S., Azlian, A. A., Sharnti, K. and Ho, L. C. (2004). "Trainee teachers' perceptions of the school practicum", *Proceedings of the National Seminar on English Language Teaching,* Bangi: Faculty of Education, UKM., 84-89.

Ringle, C. M., Sarstedt, M. and Straub, D.W. (2012). "A critical look at the use of PLS-SEM in MIS quarterly", *MIS Q*, Vol. 36: iii-xiv.

Salovey, P. and J. Mayer. (1990). "Emotional intelligence", *Imagination Cognition and Personality,* Vol. 9: 185–211.

Skaalvik, E. M.and Skaalvik, S. (2010). "Teacher self-efficacy and teacher burnout: A study of relations", *Teaching and Teacher Education*, Vol. 26: 1059-1069.

Soave, A. E. (2014). "Examining the relationship of variables associated with pre-service teachers' coping during their practicum experience", *University of Western Ontario – Electronic Thesis and Dissertation Repository Paper,* 1958.

Spielberger, C.D., Vagg, P.R. and Wasala, C.F. (2002). "Occupational stress: job pressures and lack of support", in J.C. Quick and L. Tetrick (eds), *Handbook of Occupational Health Psychology*,Washington, DC: American Psychological Association, 185–200.

Tan, A. L., Abd Aziz Abd Shukor and Mahani Razali. (2012). "Emotional intelligence and subject major specialization as predictor for practicum performance", *Scottish Journal of Arts, Social Sciences and Scientific Studies*, Volume 5, Issue II, November: 41-51.

Tschannen-Moran, M. and Woolfolk Hoy, A. (2001). "Teacher efficacy: Capturing and elusive construct", *Teaching and Teacher Education*, Vol. 17: 783-805.

Wagnild, G. M. and Young, H. M. (1990). "Resilience among older women", *Image: Journal of Nursing Scholarship,* Vo. 22: 252-255.

Wagnild, G. M. and Young, H. M. (1993). "Development and psychometric evaluation of the resilience scale", *Journal of Nursing Measurement*, Vol. 1, No. 2: 165-178.

Weisenger, H. (2000). *Emotional intelligence at work*. San Francisco: Jossey-Bass.

Wendt J.C and Bain L.L. (1989). "Concerns of preservice and inservice physical educators", *Journal of Teaching in Physical Education*, 8:177-180.

Windle, G., Woods, R. T. and Markland, D. A. (2010). "Living with ill-health in older age: the role of a resilient personality", *Journal of Happiness Studies*, Vol. 11: 763-777.

Wood, R. and Bandura, A. (1989). Social cognitive theory of organizational management. *Academy of Management Review*, Vol. 14, 361-384.