

# Development & Recognition, Empowerment, & Innovative Behaviour

## Development & Recognition as a Moderator for the Relationship of Each Dimension of Psychological Empowerment to Innovative Behaviour

Manjari Singh<sup>a</sup> and Anita Sarkar<sup>b</sup>

<sup>a</sup>Indian Institute of Management, Ahmedabad, India. [manjari@iimahd.ernet.in](mailto:manjari@iimahd.ernet.in)

<sup>b</sup>XLRI School of Business & Human Resources, Jamshedpur, India. [anitasarkar@xlri.ac.in](mailto:anitasarkar@xlri.ac.in)

### Abstract

Innovative behaviour brings forth vibrancy in the workplace and acts as critical factor for organisational sustenance and development. Innovation requires not only motivated individuals, but also organisational support through provision of development & recognition opportunities. The current research is the output of three inter-related ideas. First, the research interest stems from the fact that there are very few studies (e.g., Spreitzer, Kizilos, & Nason, 1997) done on the linkage between individual dimensions of empowerment and outcome. Secondly since innovative behaviour requires individuals to take charge and motivate one-self as well as others it is most likely that the innovative individuals' empowerment would perceptibly be felt by fellow colleagues in the workplace. Also, in order to correct the inherent leniency bias (Church, 1997) in self-perception it is important to consider colleagues' perception of innovative behaviour of individuals, as an outcome of empowerment. Third, in India (the present country context of the study) women primary school teachers outnumber male teachers in the urban areas of all major Indian states (women's representation varying between 50-95%) (UNESCO, 2000). Despite schools being regarded as the basic building block of the society not many studies have explored the linkage of empowerment with innovative behaviour of teachers in the Indian context. Hence we decided to bridge this gap by focusing on connectivity of individual dimension of empowerment with innovative behaviour and effect of development & recognition on this linkage.

### Theoretical Framework

#### Innovative Behaviour

Innovative behaviour has been defined as an employee's ability to promote and seek new ideas, and attempts to build support for implementation of these ideas (Scott & Bruce, 1994). Innovation plays a pivotal role in the long-run survival of organisations (Anconna & Caldwell, 1987). Innovation entails four major tasks, idea generation, coalition building, idea realisation and transfer or diffusion of the ideas at either individual or at group level (Kanter, 1988). It was found that in schools' context teachers were major source of technical ideas and more active than the principal and superintendent in idea generation (Daft, 1978). Examples of within-classroom innovative behaviour of teachers include creative usage of songs, dances, poems, pictures, games, dramas, musical instruments (like harmonium, tambourine, etc.), and hands-on assignments so as to make the learning environment interesting and enjoyable for the students. Outside classroom innovative behaviour of teachers might include celebration of

special festivals, use of religious discourses to communicate and convince community members the importance of sending and retaining their kids in the schools (Chand & Amin-Choudhury, 2006).

### **Dimensions of Psychological Empowerment**

Based on empowerment construct studied by earlier researchers (Conger & Kanungo, 1988; Thomas & Velthouse, 1990; Spreitzer, 1995) psychological empowerment is defined as employee experienced powerfulness. Meaning is an individual's alignment of own value system with the work s/he does. The meaning dimension is different from the sense-making process. It shows the value of goal or purpose, judged in relation to individual's own ideals and standards. Competence is the sense of skillfulness that an individual believes s/he has for carrying out the work, which can be equated with self efficacy notion of Bandura (1977). Competence gets developed through acquisition of social, linguistic, cognitive, and physical skills. Impact is the sense of influence an individual believes s/he has on those who are affected by the work. Self determination is the scope for decision making available to an individual while carrying out the work. Self determination is reflected in individual's participation in the work processes and is the active rather than coerced or pressurised behaviour of an individual (Spreitzer, 1995). Study by Singh & Sarkar (2009) found self determination has two aspects: one is related to employee's ability to exercise authority and take decisions at immediate *job* level and the second is based on employee's decision-making ability at a broader *organisational* level. Control in non-work domain is an additional dimension of empowerment which shows employee's ability to take decisions at household and immediate community level (Singh & Sarkar, 2009). In "community" one includes neighbors, and all significant informal associations of an employee (not related to formal workplace). Schulz, Israel, Zimmerman, & Checkoway (1993) considered this dimension taking into account behavioural and contextual components of empowerment.

### **Development & Recognition**

Development is defined as employee's skill enhancement opportunity. Recognition is defined as the system of appreciation, where employees can see their effort and appreciation connectivity. Kanter (1977) under "personal growth" construct considered training opportunity as a dimension of structural empowerment. In the context of primary schools, outstanding teachers' recognition, peer learning system, in-service training centre are critical and can play significant supportive roles in ensuring teachers' initiative (Chand & Shukla, 1995; Vasavi, Chand, & Shukla, 1997).

## **Hypotheses**

### **Effect of Dimensions of Empowerment on Innovative Behaviour.**

Researchers (Redmond, Mumford & Teach, 1993; Bass, 1985) found employees with high meaningfulness in their tasks were innovative. Highly competent employees are more likely to suggest new ways of doing thing. Singh & Sarkar (2008) found meaning, competence, & impact to be significant determinants of innovative behaviour. Self determination allows employees to be confident of exploring new opportunities. Hence, we hypothesise that,

*H1. Employees perceiving greater meaning in their work exhibit more innovative behaviour.*

*H2. Employees perceiving greater competence in their work exhibit more innovative behaviour.*

*H3. Employees perceiving greater impact through their work exhibit more innovative behaviour.*

*H4. Employees perceiving greater self-determination in their job context exhibit more innovative behaviour.*

*H5. Employees perceiving greater self-determination in organisational context exhibit more innovative behaviour.*

*H6. Employees perceiving greater control over non-work domain exhibit more innovative behaviour.*

### **Development & Recognition as Moderator**

Though in very few studies (e.g., Zembylas, & Papanastasiou, 2005) development & recognition has been considered as an antecedent to empowerment yet no study has so far explored the moderating role of development & recognition. Importance of studying effect of moderation in empirical research has been well established. For example, Matheieu, DeShon & Bergh (2008) argued that the research without an understanding of underlying processes involved in the findings lacks its requisite rigour. It is expected that for employees with high prospects of development & recognition, more meaningfulness, competence, impact, and self-determination (in both job and organisation context) are likely to lead to innovative behaviour at the workplace.

*H7. Development & Recognition moderates the relationship between meaning and innovative behaviour. Specifically, employees having better prospects of development and recognition exhibit more innovative behaviour when they perceive greater meaning in their work.*

*H8. Employees having better prospects of development and recognition exhibit more innovative behaviour when they perceive greater competence in their work.*

*H9. Employees having better prospects of development and recognition exhibit more innovative behaviour when they perceive greater impact through their work.*

*H10. Employees having better prospects of development and recognition exhibit more innovative behaviour when they perceive greater self-determination in their job context.*

*H11. Employees having better prospects of development and recognition exhibit more innovative behaviour when they perceive greater self-determination in organisational context.*

Based on compensation theory (Champoux, 1978) and spillover theory (Staines, 1980), we can say that less support and opportunities at the workplace needs to be compensated through greater control in non-work domain for exhibiting more innovative behaviour.

*H12. Employees having lower prospects of development and recognition exhibit more innovative behaviour when they perceive greater control over non-work domain.*

## **Method**

### **Sample**

The hypotheses developed above are tested on a sample of women primary school teachers in India. This is regarded as one of the stereotypical jobs for women. In the urban areas of all major states in India 50-95% primary school teachers are women (UNESCO, 2000). Two key features of primary education in India are its large size and the important role played by the state in funding and management of the school system (Chand & Amin-Choudhury, 2006). The general qualification of primary school teachers in India is low (Kaushik, Shah, Chavan, Dyer, Ramachandran & Sharma, 2009) and they are not expected to specialise in a particular subject or pedagogy. They are in-charge of a section/class and teach all regular subjects like languages, mathematics, science, environmental studies, etc at elementary level. This makes monitoring of their work difficult and so it is imperative that they become self-driven and committed. Their job involvement is very important in developing the future human resources of the country.

After pre-testing the instrument in a pilot survey of 288 respondents, the data for the main study was collected during July to December 2008. The main study was done for 401 teachers from 54 schools located in the state of West Bengal in India. Each of the 401 teachers rated their psychological empowerment individually. 54 superiors rated the development & recognition opportunities provided to individual teachers in their respective schools. Innovative behaviour was rated by the teachers' colleagues. Two to three colleagues responded, which resulted in total 1026 colleague responses. Thus data is collected from three different rater groups to minimise common method bias.

The average age of the teachers in the main study was 41.47 years (s.d.=10 years), with average total teaching experience of 13.56 years (s.d.=10.58 years), and average experience at current school of 10.91 years (s.d.=9 years). 13.9% of these teachers were under-graduate, 66.9% were graduates, and 19.2% held masters' degree. 75.6% of them were married.

### **Variables**

We have used standard scales to analyse the moderating effect of job involvement on the relationship between social support and each dimension of empowerment.

**Dependent.** For innovative behaviour we used the scale given in Singh and Sarkar (2009). This scale had total six items. Sample items include "*She searches out new processes, techniques, and/or new ideas for her classes*", "*She tries to implement new ideas in the school*".

**Control.** There are three control variables in this study: Total experience, education, and marital status. Total experience is the actual teaching experience in months spanning her entire career. Education is a coded variable where 0 is for education attainment up to higher secondary school level, 1 for graduation level, and 2 for post-graduation or higher level. Marital status is coded as a dichotomous variable, 0 for single and 1 for married.

**Independent.** Psychological empowerment is a second-order latent variable having six first-order dimensions. Since our study focuses on the six dimensions, all the dependent variables are first-order latent variables. The following scales measure the six dimensions of psychological empowerment (Singh & Sarkar, 2009).

1. **Meaning:** The three items in this scale are "*My life's value matches with the teaching activity that I perform in this school*", "*This job helps me to become what I want to become*".
2. **Competence:** The six-item scale includes "*I am excellent in planning, organising and structuring my instruction*", "*I have mastery over the subject(s) that I teach*".
3. **Impact:** This scale has four items, which includes "*My impact on student's learning is large*", "*I have great impact on influencing values in my students*".
4. **Job Level Self-Determination:** This three items in this scale are "*I exercise my judgment with respect to lesson scheduling*", "*I give major inputs on selection of textbooks and other instructional materials*".
5. **Organisation Level Self-Determination:** This scale has the following three items "*Whenever any changes occur in the school policy (e.g., school timing, student's strength I actively participate in discussions and give my inputs)*", "*I exercise authority in deciding how and when I would perform administrative work (not related to teaching)*".
6. **Non-Work Domain Control:** This five-item scale includes "*I influence decisions that affect others (e.g. members of my family, neighbours, locals) around me*", "*I can formulate and implement most of the decisions in my life*".

**Moderator.** Development & Recognition is measured by the scale given in Singh and Sarkar (2009). This scale had total four items. Sample items include "*She has enough opportunities for professional growth in her role here*", "*She gets appreciation whenever she does a good work*".

For the dependent, independent, and the moderator variables, raters were requested to assess on a seven point scale, 1 indicating complete disagreement and 7 indicating complete agreement with the items given in the questionnaire. Prior to aggregating colleagues' responses, we checked the inter-rater agreement (IRA) via  $r_{wg}$ , average deviation (AD), inter-rater reliability (IRR) and intra-class correlation coefficients (ICCs).

We analysed convergent and discriminant validities of all the multi-item first-order latent variables in the study. For convergent validity we checked the values of Cronbach alpha, construct reliability, and average variance extracted of all multi-item variables. All values were above the desired cut-off, 0.7 in case of Cronbach alpha and construct reliability and 0.5 in case of average variance extracted (Fornell & Larcker, 1981). Fornell & Larcker (1981) suggested that for discriminant validity all squared correlations of first order latent variables should be less than average variance extracted so that the items share more common variance with their respective constructs. All variables in our study met this condition.

### Analyses

We used multiple regression analysis to test our hypotheses. In model 1, we used the following equation:

$$\text{innovative behaviour}_i = \alpha_i + \beta_{1i} \text{total experience}_i + \beta_{2i} \text{education}_i + \beta_{3i} \text{marital status}_i + \beta_{4i} \text{meaning}_i + \beta_{5i} \text{competence}_i + \beta_{6i} \text{impact}_i + \beta_{7i} \text{job level self-determination}_i + \beta_{8i} \text{organisation level self-determination}_i + \beta_{9i} \text{non-work domain control}_i + \varepsilon_i$$

where  $\alpha$  is the constant term,  $\beta$ s are the coefficient terms, and  $\varepsilon$  is the error term.

The variables were entered into the regression equation in three steps. In the first step, we entered the control variables and the independent variable shown in the equation above. Then we added the moderator variable (i.e., *development & recognition*) in the next step, and finally we added the interaction terms obtained by multiplying the moderator variable by the independent variables (for example, *meaning \* development & recognition*).

Aiken and West (1991) suggested using centering procedure for regression analysis using interaction terms. We used this method and found that variance inflation factors in all the equations were well within desirable limit. To test the moderation effects we also used the macro "simple-2way.sps" available with the statistical package SPSS 17. Along with the significance of the interaction terms, the output also provided information regarding the simple slopes of the dependent variable on the independent variable for three values of moderator, i.e., high, mean, and low. The high value was taken as mean + 1 standard deviation and the low value was mean - 1 standard deviation. On this basis graphical plots of the three lines were drawn for each final equation. In these graphical plots, the extreme points for the independent variables were taken by adding and subtracting 2 standard deviations from the mean value.

## Results

Correlation results showed that the dependent variable, innovative behaviour, is not correlated with total experience and marital status. There is a negative correlation between innovative behaviour and level of education ( $r = -0.102$  at  $p \leq 0.05$ ). All the six dimensions of psychological empowerment are significantly correlated with the dependent variable and also with each other. The correlations of dependent variable with the six dimensions of empowerment are in the range of 0.159 to 0.272 (at  $p \leq 0.001$ ), thus supporting hypotheses 1 to 6. Among the six dimensions, correlations are in the range of 0.165 to 0.549. Also the bivariate correlation coefficients of the moderator variable, development & recognition, with the independent and control variables are low as desired.

### Controls & Main Effects

Table 1 presents the results of the hierarchical regression analysis. The Model 1 of Table 1 gives the standardised  $\beta$  coefficients of control variables and all six dimensions of empowerment on innovative behaviour. None of the control variables significantly affected the dependent variable. The three dimensions of empowerment significant at  $p \leq 0.01$  are meaning, self determination at job level, and control in non-work domain (standardised  $\beta = 0.159, 0.193,$  and  $0.154$  respectively). Explanatory power of this model is 11.7%.

### **Development & Recognition as Moderator**

Results for models 2 to 7 (in Table 1) show that there is support for hypotheses 10 and 12.  $\beta$  coefficients for the interactive terms are significant at  $p \leq 0.05$  with standardised  $\beta = 0.102$  and  $-0.102$  respectively for job level self-determination and non-work domain control. Also, the interactive term explained a significant amount of variance at  $p \leq 0.05$  when entered last after the control variables, independent variables, and moderator variable were entered into the hierarchical regression equation in the previous steps (change in  $R^2$  is 1% in both cases). But there was no support for hypotheses 7, 8, 9, and 11 (standardised  $\beta = -0.007, 0.078, 0.053,$  and  $0.016$  respectively, all insignificant at  $p \leq 0.1$ ). This means that when there is high development and recognition prospects, employees exhibit more innovative behaviour when they perceive higher level of self-determination in job context. On the other hand, with low development and recognition prospects, employees exhibit more innovative behaviour when they perceive higher control in non-work domain. Employees' prospects of development and recognition have no effect on the relationship of meaning, competence, impact, and self-determination in organisational context with innovative behaviour.

Simple regression lines of the effects of dimensions of empowerment on innovative behaviour at low, mean, and high levels of development & recognition were considered. Results showed that when development & recognition is low, meaning and non-work domain control has the strongest effect (unstandardised  $\beta = 0.244$  and  $0.274$  respectively at  $p \leq 0.001$ ) on innovative behaviour. On the other hand, when development & recognition is high, competence and job level self-determination (unstandardised  $\beta = 0.211$  and  $0.242$  respectively at  $p \leq 0.001$ ) strongly effect innovative behaviour. For mean value of development and recognition,  $\beta$  coefficients are significant at  $p \leq 0.001$  for all dimensions of empowerment except impact where it is significant at  $p \leq 0.01$ . Figures showing the graphical representations of the effects of the six dimensions of empowerment on innovative behaviour at low, mean, and high development & recognition are available with the authors.

## **Discussion**

In this study we have considered the moderating role of development and recognition in the link between each dimension of psychological empowerment and innovative behaviour in the context of women primary school teachers in India. Based on a sample of 401 women primary school teachers in India, we found that when employees perceive greater meaning in their work, better opinion of their competence, more impact of their work, higher level of self-determination in job and organisational context, and more control in non-work domain, they exhibit more innovative behaviour. The study shows each individual dimensions of empowerment has potential to impact creativity exhibited by individuals in the workplace. Thus the study supports the perspectives of those practitioners and action researchers who promote "human factor" as a vital element while deliberating any change initiative in the workplace. Administrators targeting to bring forth creative genre of employees in the workplace are required to make the work more meaningful, enjoyable, and aligned with individual's self interest. Employees need to be given encouragement for gaining self confidence in their skill level. More authority and responsibility in both job and organisational contexts are called for so that employees can voice their opinions and initiate

changes. Organisations that are able to show employees the importance and influence of their work on customers and immediate workplace are likely to put forth conducive environment where employees are more creative. The interesting aspect of this study is that it shows that those individuals who enjoy non-work domain control act as idea generator and implementer in the workplace. Thus clearly establishing the perspective put forth by current researchers (e.g., Ashforth, Kreiner & Fugate, 2000) that the boundary between work and non-work domain is gradually diminishing. Organisations targeting to engage employees with their full creative potentials need to provide support through family friendly policies so that satisfied employees in their non-work domain can in turn bring forth positive energy in the workplace.

The present study also investigated the role of development & recognition as moderator between individual psychological dimensions and innovative behaviour. The findings of the study indicates that when there is high development and recognition prospects, employees exhibit more innovative behaviour when they perceive higher level of self-determination in job context. This is an interesting finding since this clearly shows the “knowing”-“doing” connectivity in the workplace. Unless the immediate job context gives employees opportunities to utilise the prospective training skill, it is unlikely that employees would be able to exhibit their creativity in the workplace. The empirical implication of the current research justifies that training and development opportunity, and recognition are essential for employees to think and execute new ideas at their immediate job level. Reality remains that, primary schools in India do not provide enough training opportunities for the teachers to upgrade their skills (Dyer, 1996; Ramachandran, Pal, Jain, Shekhar, & Sharma, 2005). Also many of the teachers are not paid good remunerations (Kaushik et al., 2009) and they are often denied any appreciation for their exemplary contributions. Only when any major change occurs in the primary education system, teachers attend training camps essentially for meeting training mandates of the government. Keeping in mind long term developmental perspective of the school, it is highly recommended to ensure enough growth potentials for the teachers through training and development. Particularly, regular need-based training programmes which will be beneficial to the school in future might be initiated. We found that in many schools in spite of availability of computers, teachers (other than computer teachers) do not possess adequate computer awareness and do not possess the ability to utilise computers for effective pedagogy. Earlier studies (e.g., Banerjee, Cole, Duflo & Linden, 2005) also found that teachers lack familiarity with the computers even when computers are available. Aktay (2008) found that internet access in primary schools has high positive impact on the work of students, teachers, and school managers.

Another interesting finding is that with low development & recognition prospects, employees exhibit more innovative behaviour when they perceive higher control in non-work domain. Development & recognition system (selection of trainees, training modules, promotion opportunities etc.) in majority of the cases for primary school teachers in India is not standardised and so they cannot depend on formalised development & recognition system in order to exhibit creativity in the workplace. Rather in this context powerfulness emanating from non-work domain control helps them to become innovative in the workplace. This finding is a significant contributor to the existing theoretical development and practical application in the field of empowerment. Theoretically it shows the connectivity of non-work domain control in work-domain creativity. Given that not much study has taken into account intra-individual sense of powerfulness that comes from non-work domain this study sets direction for future researchers to further explore the linkage of both the domains. This dimension is of particular relevance in the present country context amongst women since they place lot of importance in their roles as homemaker (Kanungo & Misra, 1988; Rajadhyaksha & Smita, 2004).

Future studies might like to test whether the same moderating relationship holds across gender between dimensions of empowerment and innovative behaviour. It might not be unjustified to project this result to other women dominated stereotypical contexts and mention that the presence of proper development & recognition opportunities provided by administrators and concerned authorities might help in connecting individual's psychology with workplace creativity.

## Conclusion

Innovation is essential for organisation's development and survival. This paper integrates employee's innovative behaviour – individual empowerment dimensions with development & recognition prospects. In the context of organisational development and change it is imperative to address both the psyche of the individual as well as the existing development opportunities prevalent in the organisation. The study has three important practical implications. First, for ensuring individual's creativity and innovation, it is essential for organisations to help individuals to be associated with meaningful jobs, encourage individuals to gain confidence in their skill level and provide opportunity to be able to exercise authority at the immediate job and organisational level. Second, importance of helping employees to grow since individuals with high prospects of development & recognition and increased perception regarding self-determination in job context can bring forth change initiatives in the workplace. Third, ensure overall connectivity of non-work domain control and work domain creativity, through provision of family supportive programmes. Given that in the Indian context a large number of women are associated with the job of primary school teaching, the study has clear implications for securing psychologically empowered women employees who can bring the much needed creative energy in the workplace.

## References

- Aiken, L.S., & West, S.G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Aktay, S. (2008). The effect of the internet on the quality of education in primary schools. *International Journal of Learning*, 15 (4), 81-87.
- Anconna, D., & Caldwell, D. (1987). Management issues facing new product teams in high technology companies. In D. Lewin, D. Lipsky, & D. Sokel (Eds.), *Advances in Industrial and Labor Relations*, 4, 199-221. Greenwich, CT: JAI Press.
- Ashforth, B.E., Kreiner, G.E., & Fugate, M. (2000). All in a day's work: boundaries and micro role transitions. *Academy of Management Review*, 25(3), 471-491.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191-215.
- Banerjee, A., Cole, S., Duflo, E., Linden, L. (2005). *Remedying Education: Evidence from two randomized experiments in India* (NBER Working paper 11904). Retrieved October 30, 2008, from <http://www.nber.org/papers/w11904>.
- Bass, B.M. (1985). *Leadership and performance beyond expectations*. New York: Free Press.
- Champoux, J. 1978. A reexamination of the compensatory and spillover models. *Sociology of Work and Occupations*, 5(4): 402-422.
- Chand, V.S., & Amin-Choudhury, G. (2006). Teachers and socio-educational entrepreneurship: Competence as a consequence. *Journal of Entrepreneurship*, 15(2), 97-114.

- Chand, V.S.P.G., & Shukla, S.R. (1995). *From Inspection Systems to Peer Learning: Teacher Development in Primary Education*, IIMA Working Papers 1243, Indian Institute of Management Ahmedabad, Research and Publication Department.
- Church, A.H. (1997). Do you see what I see? An exploration of congruence in ratings from multiple perspectives. *Journal of Applied Psychology*, 27(11), 983-1020.
- Conger, J.A., & Kanungo, R.N. (1988). The empowerment process: Integrating theory and practice. *Academy of Management Review*, 13(3), 471-482.
- Daft, R.L. (1978). A dual-core model of organizational innovation. *Academy of Management Journal*, 21(2), 193-210.
- Dyer, C. (1996). Primary teachers and policy innovation in India: Some neglected issues. *International Journal of Educational Development*, 16(1), 27-40.
- Fornell, C. & Larcker, D.F. (1981). Evaluating structural equation models with unobserved variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.
- Kanter R.M. (1988). When a thousand flowers bloom: structural, collective, and social conditions for innovation in organisation. *Research in Organisational Behaviour*, 10, 169-211.
- Kanter, R.M. (1977). *Men and women of the corporation*. New York: Basic Books Inc.
- Kanungo, R.N. & Misra, S. (1988). The bases of involvement in work and family context. *International Journal of Psychology*, 23, 267-282.
- Kaushik, A., Shah, P. J., Chavan, M., Dyer, C., Ramachandran, V., & Sharma, R. (2009). Primary education in India: Current status and future challenges. *Vikalpa: The Journal for Decision Makers*, 34 (2), 61-90.
- Matheieu, J.E., Deshon, R.P., & Bergh, D.D. (2008). Mediation interferences in organizational research: Then, now, and beyond. *Organizational Research Methods*, 11(2), 203-223.
- Rajadhyaksha, U. & Smita, S. (2004). Tracing a timeline for work and family research in India. *Economic and Political Weekly*, 1674-1680.
- Ramachandran, V., Pal, M., Jain, S., Shekhar, S., & Sharma, J. (2005). Teacher motivation in India. [http://www.research4development.info/PDF/Outputs/PolicyStrategy/3888Teacher\\_motivation\\_India.pdf](http://www.research4development.info/PDF/Outputs/PolicyStrategy/3888Teacher_motivation_India.pdf) [accessed on 25th April, 2009]
- Redmond, M.R., Mumford, M.D., & Teach, R. (1993). Putting creativity to work: Effects of leader behavior on subordinate creativity. *Organizational Behavior and Human Decision Processes*, 55(1), 120-151.
- Schulz, A.J., Israel, B.A., Zimmerman, M.A, & Checkoway, B. (1993). *Empowerment as a multi level construct: Perceived control at the individual, organizational and community levels*. Working Paper No. 495, The University of Michigan.
- Scott, S.G., & Bruce, R.A. (1994). Determinants of innovative behavior: A path model of individual innovation in the workplace. *Academy of Management Journal*, 37(3), 580-607.
- Singh, M., & Sarkar, A. (2008). *Dimensions of empowerment: A study of women primary school teachers in India*. Paper presented at the Annual Academy of Management Meeting, Anaheim.
- Singh, M., & Sarkar, A. (2009). *Empowerment of employees: Using multi-rater perspective*. Paper presented at the Annual Academy of Management Meeting, Chicago.
- Spreitzer, G.M. (1995). Psychological empowerment in the workplace: Dimensions, measurement, and validation. *Academy of Management Journal*, 38 (5), 1442-1465.
- Spreitzer, G.M., Kizilos, M.A., & Nason, S.W. (1997). A dimensional analysis of the relationship between psychological empowerment and effectiveness satisfaction, and strain. *Journal of Management*, 23(5), 679-704.

- Staines, G.L. 1980. Spillover versus compensation: A review of the literature on the relationship between work and nonwork. *Human Relations*, 33(2): 111-129.
- Thomas, K.W., & Velthouse, B.A. (1990). Cognitive elements of empowerment: An interpretive model of intrinsic task motivation. *Academy of Management Review*, 15(4), 666-681.
- UNESCO (2000). *Increasing the number of women teachers in rural schools: A synthesis of country case studies: South Asia*. Bangkok: UNESCO Principal Regional Office for Asia and the Pacific. *Asia-Pacific Programme of Education for All*. Retrieved January 10, 2008, from <http://unesdoc.unesco.org/images/0012/001227/122720e.pdf>.
- Vasavi, A.R., Chand, V.S P.G., & Shukla, S.R. (1997). Blueprint for rural primary education how viable? *Economic and Political Weekly*, 32(50), 3181-3184.

**Table 1: Results of Hierarchical Regression Analyses**

Independent Variables	Dependent Variable: Innovative Behavior						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
<b>Controls</b>							
Total Experience	-0.011	0.004	0.010	0.007	0.006	0.006	0.000
Education	-0.072	-0.071	-0.076	-0.072	-0.076	-0.071	-0.069
Marital Status	0.023	0.022	0.018	0.020	0.021	0.021	0.021
<b>Main Effects</b>							
Meaning	0.159**	0.141*	0.146**	0.148**	0.146**	0.143**	0.123*
Competence	-0.069	-0.063	-0.040	-0.048	-0.042	-0.060	-0.052
Impact	-0.036	-0.049	-0.043	-0.048	-0.050	-0.049	-0.061
Job Level Self-Determination	0.193**	0.179**	0.172**	0.171**	0.164**	0.177**	0.179**
Organization Level Self-Determination	0.076	0.072	0.074	0.068	0.067	0.071	0.074
Non-Work Domain Control	0.154**	0.149**	0.139**	0.152**	0.150**	0.149**	0.153**
Development & Recognition		0.138**	0.137**	0.134**	0.140**	0.135**	0.148**
<b>Interactions</b>							
Meaning x Development & Recognition		-0.007					
Competence x Development & Recognition			0.078				
Impact x Development & Recognition				0.053			
Job Level Self-Determination x Development & Recognition					0.102*		
Organization Level Self-Determination x Development & Recognition						0.016	
Non-Work Domain Control x Development & Recognition							-0.102*
$\Delta R^2$ (interaction)		0.000	0.006	0.003	0.010*	0.000	0.010*
Overall Adjusted R <sup>2</sup>	0.117	0.130	0.136	0.133	0.141	0.131	0.140
df	9, 391	11, 389	11, 389	11, 389	11, 389	11, 389	11, 389
Overall F	6.883***	6.451***	6.725***	6.575***	6.954***	6.461***	6.944***

Standardized coefficients are shown. N=401

\*\*\*  $p \leq 0.001$ ; \*\*  $p \leq 0.01$ ; \*  $p \leq 0.05$ ; †  $p \leq 0.10$ ; two-tailed tests.