

# Employer Support for Innovative Work and Employees' Job Satisfaction and Job-related Stress

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**Abstract: Employer Support for Innovative Work and Employees' Job Satisfaction and Job-related Stress: Milosh RAYKOV. Faculty of Education, University of Malta, Malta—Objectives:**

There are high levels of global and national underemployment, but limited information is available on the impact of this phenomenon on the quality of employees' working lives. This study examines the relations among perceived employer support for creative work, different forms of underemployment and employee quality of life, including job satisfaction, perceived job security and job satisfaction.

**Methods:** The study was performed using cross-sectional data from the Canadian 2010 Work and Life-long Learning Survey (WALL), which included 1,042 randomly selected currently employed participants between the ages of 18 and 64 years of age. **Results:**

The study found a significant inverse association between employer support for innovative work and different forms of underemployment. It also suggested a strong relationship between support for such work and participation in work-related informal learning. The results from this study confirmed the hypothesis that employer support for creative work is significantly associated with the quality of employees' working lives, as manifested through increased job security and job satisfaction. Employees experiencing greater support for workplace creativity report less job-related stress. The present study identified relatively low employer support for creative work and significant differences in the perception of support among managers and workers. **Conclusions:** The results of this study indicate that employer support for innovative work can mitigate significant underutilization of employee knowledge and skills. Such support can contribute to the reduction of job-related stress, increased job satisfaction and perceived job security. This kind of support can also improve the quality of life of employees and facilitate creativity and overall organizational and social development.

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Innovative work and creativity are often considered as preconditions for organizational viability in today's highly competitive global economy<sup>1–5</sup>. Studies examining issues related to innovation in a business environment<sup>6</sup> emphasize that they are crucial for the modern economy, employee productivity and participation in organizational change and innovative workplace practices<sup>7</sup>. Many of these studies stress the significant role of human capital and a highly educated labor force in organizational productivity and innovation. There is evidence proving that the quality and quantity of employees having a vocational or higher level of education in countries with developed economies “directly affects the capacity of firms and industries to implement innovation”<sup>8</sup>.

Despite the high educational attainment of the labor force and the high level of productivity, there appears to be a general lack of innovative organizational activity in Canada<sup>1,2</sup>. Numerous researchers<sup>9–12</sup> have drawn this conclusion. Benchmark studies that define innovation as “a process through which economic or social value is extracted from knowledge—through the creation, diffusion and transformation of knowledge to produce new or significantly improved products or processes that are put to use by society” consistently find that Canada underperforms in the innovation domain, ranking very low among 17 countries in a comparable group<sup>1,2</sup>.

Informal learning for workplace innovation is also of great importance, according to academic studies. Eraut<sup>13</sup> asserts that “context changes are more likely to result from the performer's own actions or the discovery of new information than from extraneous events” (pg. 258). Based on the results of an international comparison, Taylor and Evans<sup>14</sup> emphasized the relevance of employees' learning and engagement in workplace change. A synthesis of studies on the effect of workplace education on the innovation potential of “routine” workers<sup>7</sup> showed the importance of

the interplay between formal and informal learning and the role of workplace education for participation in employee-driven innovation. Another study<sup>15)</sup> demonstrated the complexity of innovative processes and listed several preconditions, including freedom, patience, recognition and support. Despite the growing number of studies in the domain of learning and innovation, scholars generally agree that this field lacks empirical knowledge and a general theory about the learning processes involved in practice-based change<sup>15-18)</sup>.

The literature on innovation and skills<sup>19, 20)</sup> also demonstrates the need for further empirical research, concluding that the existing studies, usually based on aggregated data, provide mixed results and do not examine individual level data. A study on innovation and skills conducted by the OECD in 2011 found a lack of empirical research examining the association between education and the ways in which innovative work activities might be encouraged. This study also emphasized the need to develop a broader set of soft skills to promote innovation and the "creation of an environment that enables individuals to choose and acquire appropriate skills and supports the optimal use of these skills at work"<sup>20)</sup>.

Studies in Canada consistently show that underemployment is widespread<sup>21-24)</sup>. Numerous international studies also confirm a high incidence of underemployment<sup>25-30)</sup>. According to the 1998 ILO report, 25-30% (750-900 million) of the world's labor force has experienced some kind of underemployment, while 150 million workers are unemployed<sup>28)</sup>. A more recent report<sup>29)</sup> indicates that global unemployment and underemployment are becoming an increasing concern. According to this report, 850 million people are either underemployed, working fewer hours than they want or earning less than they need for a decent living. Recent estimates on underemployment show that almost 186 million individuals are unemployed, the highest level of unemployment ever recorded<sup>30)</sup>. According to the same report<sup>30)</sup>, high levels of underemployment are a critical issue in many economically developed and developing countries. Youth and women are the most seriously affected by this.

While many studies have examined the impact of underemployment on the earnings of employees<sup>27)</sup> or its impact on health<sup>31, 32)</sup>, only a few have explored the effect of underemployment and underutilization of knowledge and skills on innovative work behavior and employees' quality of life. These rare studies have shown that underemployment (underutilization of knowledge and skills) is significantly linked to low participation and low innovative performance<sup>33)</sup>. A more recent study of the effect of "overeducation" on innovation among young Spanish employees<sup>34)</sup> found

that education-job mismatch is negatively associated with job innovation and career-enhancing strategies. This association is explained from the position of social exchange theory. Other studies examining the impact of underemployment and unemployment on a worker's health and quality of life also affirm their correlation to education-job mismatch and overqualification<sup>31)</sup>.

Research on innovation is mainly conducted in business schools and faculties<sup>1)</sup>. The aim of the present study was to expand this research field to the domain of education and industrial relations. As with the growing number of papers<sup>6, 35, 37)</sup> that have emphasized the importance of organizational support for creativity, the present study argued that such support is necessary to encourage workplace learning and an essential component of the employee-driven innovation that is necessary for any significant improvement in organizational innovative activities<sup>38)</sup>. It also examined to what extent participants perceive adequate organizational support for innovative work and sought to reveal how frequently those who perceive such support participate in job-related formal education and informal learning. The main objective of this study was to examine the association between employer support for innovative work and the quality of employees' working lives.

## Subjects and Methods

The study was performed using data from the 2010 Work and Lifelong Learning Survey (WALL), which included the 1996 randomly selected participants over the age of 18. It made use of responses from 1042 currently employed participants between 18 and 64 years old. The sample was limited to English- and French-speaking noninstitutionalized respondents with a residential telephone. The computer-assisted telephone interviews (CATI) procedure was used for data collection. The random digit dialling (RDD) selection procedure provided an equal chance of selection for individuals from all provinces, households and individuals within households. The response rate for the survey was 40 percent<sup>39)</sup>. Data were weighted by age, sex and educational attainment based on the latest available national census in 2006.

The dependent variables analyzed in this study involved quality of working life, including employment uncertainty, work-related stress and job satisfaction. The independent variables were self-reported subjective, credential and performance measures of underemployment. Measures of underemployment were developed through several previous studies<sup>21, 23)</sup> and operationalized as self-reported underemployment (perceived competencies in regard to job requirements), credential underemployment (formal qualifications that exceed employer entry requirements)

and performance underemployment (actual skill and knowledge exceeding that needed to perform a job). The study also utilized a job-related informal learning scale that is part of the informal learning scale developed through 1998<sup>40)</sup> and 2004<sup>24)</sup> national surveys on work and lifelong learning (WALL). The study was approved by the University of Toronto Office of Research Ethics.

To verify the established hypotheses, this study utilized bivariate and multivariate statistical techniques including basic descriptive measures, percentages, averages, cross-tabulations statistics and analysis of variance. Multivariate analysis included raw and adjusted logistic regression analyses with controls for educational level, age, gender and company size. Tables containing results of bivariate logistic regressions included raw odds ratios, while multiple logistic regressions included adjusted odds ratios for age, gender, educational attainment and company size. Both types of logistic regression included lower and upper 95% confidence intervals (CI). All statistically significant results are indicated in the following manner:  $p < 0.05 = *$ ,  $p < 0.01 = **$ , and  $p < 0.001 = ***$ .

## Results

### Sample characteristics

The main objective of the WALL survey was to

estimate the extent of participation in lifelong learning and work characteristics. It also examined the relationship between formal education and work. The survey contained a set of questions (work-related stress, job security and job satisfaction) to address the domain of education-job mismatch and its impact on employees' quality of working life. Random sample selection (RDD) and reliable data collection methods (CATI) provided a sample that, despite its limited size, well represented the selected subsample of currently employed participants between 18 and 64 years old. As indicated in Table 1, the distribution of ages was close to the national Labour Force Survey (LFS), which included over 661,306 randomly selected participants.

Comparisons of the participants' sociodemographic characteristics with those of the participants in the large-scale LFS survey (Table 1) revealed that differences in age distributions of the WALL participants and the LFS sample were not statistically significant. However, the distribution of the participants' genders and educational attainments were statistically significant. Comparisons of company size between the WALL and LFS sample also showed small but statistically significant differences. Since there were some statistically significant differences between the participants in this study and those in the large-scale

**Table 1.** Basic demographic data on the participants in the 2010 WALL survey and the national LFS survey (% [n])

	WALL 2010	LFS 2010	$\chi^2$
Age			n.s.
18–24	13.4% (140)	14.1% (93,244)	
25–34	20.5% (214)	21.9% (144,826)	
35–44	25.9% (270)	23.1% (152,762)	
45–54	25.7% (268)	26.2% (173,262)	
55–64	14.6% (152)	14.8% (97,873)	
Sex			***
Male	46.8% (488)	53% (350,492)	
Female	53.2% (554)	47% (310,814)	
Educational level			***
No diploma	12.3% (128)	9.7% (64,147)	
HS diploma	23.9% (249)	28.6% (189,134)	
College certificate	34.4% (358)	36.1% (238,731)	
University degree	29.4% (306)	25.7% (169,956)	
Company size			*
Less than 99 employees	67.8% (706)	66.7% (441,091)	
100 to 500 employees	22% (229)	20.6% (136,229)	
More than 500 employees	10.1% (105)	12.7% (83,986)	

Sources: Work and Lifelong Learning Survey (WALL) 2010, currently employed participants between 18 and 64 years old, N=1042; Cumulative monthly Labour Force Survey (LFS), 2010.

national survey, interpretation of the results was limited to the participants in this study. Further studies are warranted to confirm the findings of this study.

#### *Perception of employer support for innovative work*

The results showed that, among currently employed participants, less than one-third (30.9%) perceived strong employer support for innovative work. This group indicated that they strongly agreed with the statement “My organization does a good job at encouraging and developing new and creative ideas.” An additional quarter (25.6%) reported a lack of support (strongly disagree, somewhat disagree or neither), while the remaining 43.5% indicated some support (somewhat agree). The results showed that more than two-thirds of employees perceived less than acceptable support for innovative work. These findings support the main hypothesis of this study and suggest the need for appropriate organizational and policy measures to increase support and mitigate negative consequences that this lack of support has on employee-driven innovation.

As with several previous studies<sup>23, 24)</sup>, this study found that both subjective and objective (credential and performance) underemployment were quite common among the participants in this study. According to the 2010 WALL survey, more than one-quarter (29%) of all employees reported subjective underemployment. Approximately two-thirds (65%) considered their knowledge and skills to be well matched, while approximately 6% considered themselves underqualified for their jobs. In addition, approximately one-third of the participants in this study (32%) experienced credential underemployment, indicating that the employee’s formal qualifications exceeded the employers’ entry requirements. According to these criteria, only half of the employees who participated in this study (49%) were well matched, while 19% were underqualified, possessing less formal education than required for their jobs. A similar number of participants in this study also experienced performance underemployment, which indicates that the employee’s skills and knowledge exceeded that required to actually do their current jobs.

Consistent with previous studies on work and lifelong learning (Raykov, 2012), this study also found a high level of mismatch between the participants’ fields

of study and their current jobs. Only 41% of employees considered their job closely related to their formal education. One-quarter (26%) thought their jobs were somewhat related, while one-third (33%) reported that their jobs were not at all related to their field.

The results from this and several comparable studies<sup>24, 40)</sup> indicate a gradual increase in underemployment over a period of almost three decades. These results were similar to those of a recent UK study showing increasing overqualification<sup>27)</sup> and a literature review on underemployment demonstrating a similar trend. Overall, according to the WALL Survey, approximately one-third of employees who participated in this study experience at least one of the three specified forms of underemployment. A combined measure of subjective and objective underemployment showed that more than half (52.4%) of the participants in this study experienced one or more forms of underemployment.

#### *Employer support for innovative work and quality of working life*

The existing literature on underemployment and health provides evidence that underemployment is strongly associated with numerous negative health outcomes<sup>31)</sup>, lower self-rated health<sup>27)</sup> and lower health-related quality of life<sup>41)</sup>. Table 2 demonstrates a significant positive association in this study between employer support for innovative work and quality of employees’ working lives, as manifested through increased job satisfaction, greater job security and lower job-related stress. The results of bivariate analysis showed that 71% of employees who perceived strong employer support were very satisfied with their work compared with 40% of the other participants who perceived a lack of support (Table 2). These employees also experienced a greater sense of job security (76% vs. 65%) and less frequent stress (45% vs. 31%).

The results of multiple logistic regression and controls for educational levels, age, sex and company size confirmed significant associations among employer support for innovative work and greater job satisfaction, higher job security and lower stress. As indicated in Table 3, there were small differences between raw and adjusted odds ratios, which were below 10%. These small differences demonstrated that employer

**Table 2.** Employer support for innovative work and quality of employees’ working lives (% [n])

	Strong support	Lack of support	$\chi^2$
Higher job satisfaction (very satisfied)	71.3% (221)	40.0% (289)	***
Higher job security (very unlikely to lose job)	76.2% (231)	64.6% (460)	***
Less stressful job (seldom or never experience stress)	45.0% (139)	31.1% (225)	***

**Table 3.** Employer support for innovative work and quality of employees' working live (crude and adjusted odds ratios and confidence intervals [CI])

	Crude odds ratios (95% CI)	Adjusted odds ratios <sup>a</sup> (95% CI)
Higher job satisfaction (very satisfied)	3.71*** (2.78–4.94)	3.78*** (2.79–5.11)
Higher job security (very unlikely to lose job)	1.76*** (1.29–2.38)	1.91*** (1.38–2.65)
Less stressful job (seldom or never experience stress)	1.82*** (1.38–2.39)	1.99*** (1.49–2.66)

<sup>a</sup>Odds ratios adjusted for age, gender, educational attainment and company size.

**Table 4.** Employer support for innovative work and experience of underemployment, (crude and adjusted odds ratios and confidence intervals [CI])

Forms of underemployment	Crude odds ratios (95% CI)	Adjusted odds ratios <sup>a</sup> (95% CI)
Credential underemployment	1.28** (1.05–1.56)	1.24** (1.00–1.55)
Performance underemployment	1.31** (1.06–1.61)	1.33** (1.09–1.68)
Subjective underemployment	1.12 (0.88–1.44)	1.05 (0.81–1.36)

<sup>a</sup>Odds ratios adjusted for age, gender, educational attainment and company size.

support for innovative work, independent of employees' demographic characteristics and company size, determined employees' job satisfaction and perceived job security. This analysis indicated that employees who perceive strong employer support for creative work were 3.8 times more likely to report high job satisfaction (adjusted odds ratio=3.78, CI=2.79–5.11). Also, they were 91% more likely to report higher job security (adjusted odds ratio=1.91, CI=1.38–2.65) and 99% more likely to report less job-related stress (adjusted odds ratio=1.99, CI=1.49–2.66). The results indicated that employees who perceived greater employer support for innovative work feel increased possibilities to design or control their work. This was most likely one reason for greater job satisfaction and lower job-related stress. Numerous studies have provided evidence on the important association between employer support, control over work and work-related stress<sup>42–44</sup>.

As expected, bivariate analysis found a statistically significant inverse association between employer support for innovative work and underemployment. Workers who experienced credential underemployment and performance underemployment consistently perceived a low and statistically significant lack of support for innovative work. Subjective underemployment was not statistically significant. The results of multiple logistic regressions (Table 4) confirmed the results of this analysis and showed that employees who experienced credential underemployment were 24% more likely to report lack of employer support for innovative work (adjusted odds ratio=1.24, CI=1.00–1.55). Similarly, employees who experienced performance underemployment were 33% more likely to report lack of this type of employer support (adjusted odds ratio=1.33, CI=1.06–1.68).

#### *Employer support for innovative work and learning*

Since the knowledge and skills of the labor force play a significant role in fostering innovative organizational activities, an objective of this study was to examine the association between support for creativity and employees' participation in formal education and informal learning. Particular attention was paid to informal learning, since researchers have increasingly recognized the impact that this form of learning has on organizational innovative activities. The results showed that employees who perceived greater support for creativity tended to participate slightly more than others in formal education (60.3% vs. 54.6%), but this difference was not statistically significant.

A comparison of involvement in informal learning yielded different results. Employees who perceived support for innovative work on average learned more about various work-related topics than those who did not (mean=5.63 vs. mean=4.77). As shown in Table 5, these employees also participated more often in informal learning about all work-related topics.

The largest statistically significant differences were present in the incidence of learning about "core" topics such teamwork, problem-solving and communication skills, organizational/managerial skills, new job tasks and computers. This content of learning corresponds to some of the topics that are generally regarded as highly significant for employee-driven innovations. Despite the small amount of data and the limited number of indicators on innovative workplace practices, the results from this study indicated that employers often may not have adequately supported creativity and innovative work behavior. The results of multiple logistic regressions (Table 5, adjusted odds ratios) with controls for age, gender, educational attainment and company size confirmed the results of

**Table 5.** Employer support for innovative work and participation in job-related informal learning

Informal learning topics	Lower support % (n)	Higher support % (n)	$\chi^2$	Adjusted odds ratios <sup>a</sup> (95% CI)
Health and safety	62.3 (451)	69.0 (214)	**	1.31 (0.98–1.75)
Occupational knowledge	61.8 (448)	71.2 (220)	**	<b>1.55**</b> (1.15–2.09)
New job tasks	51.2 (371)	60.8 (188)	**	<b>1.52**</b> (1.15–2.01)
Computers	39.6 (287)	48.5 (150)	**	<b>1.52**</b> (1.15–2.02)
New equipment	47.5 (344)	54.8 (170)	**	<b>1.37**</b> (1.03–1.81)
Organizational/mgmt skills	39.5 (286)	51.9 (161)	***	<b>1.71***</b> (1.30–2.26)
Financial management	27.8 (201)	32.6 (101)	n.s.	1.29 (0.96–1.73)
Teamwork, problem-solving	57.9 (419)	70.2 (217)	***	<b>1.72***</b> (1.28–2.30)
Employment conditions	48.3 (350)	53.9 (167)	n.s.	1.20 (0.91–1.58)
Language or literacy	20.2 (146)	22.3 (69)	n.s.	1.17 (0.84–1.64)

<sup>a</sup>Odds ratio adjusted for age, gender, educational attainment and company size. n.s.: Not significant.

bivariate analysis for all identified significant associations among employer support for innovative work and informal learning topics. Learning about occupational health and safety was the exception. This was likely because younger employees participated in this form of learning more frequently than their older counterparts.

The findings from a previous 2004 cycle of the WALL survey suggest that employers insufficiently invest in the development of human capital and in rewards for education<sup>40</sup>. While a relatively large proportion of employees (47%) believed that participation in informal learning would benefit their work productivity, a much smaller proportion believed that it would benefit their income (17%). Respondents who participated in formal education had similar perceptions; 42% considered their training beneficial for productivity, but only 20% considered it beneficial for their personal income.

This study also found a significant discrepancy between non-managerial employees' and managers' perceptions of organizational support for innovative work. Supervisors and managers almost twice as frequently (39.5% vs. 22.3%) reported strong employer support for creativity as did employees without managerial roles. These results provide some corroboration for Karasek's insufficiently explored "active learning hypothesis"<sup>42, 43</sup> and warrant further research to determine the forms of support that are mutually beneficial for employees, their organizations and society in general.

## Discussion

Despite the limitations of cross-sectional studies, which cannot confirm causality, this study provides evidence of low employer support for innovative work and validates the hypothesis that such support is positively associated with the quality of employees' work-

ing lives, as manifested through increased job security and job satisfaction. Also, workers with greater employer support for creativity report less work-related stress.

This study provides evidence regarding the impact of lack of employer support for innovative work on job satisfaction, perceived job insecurity and work-related stress in the working population. The results indicate that the demand-control-support model can explain the association between lack of support for innovative work and increased work-related stress, job insecurity and lower job satisfaction. Karasek's study<sup>43</sup> indicates that chronic exposure to high work demands, lack of control over work and lack of social support are likely to impair regulative mechanisms responsible for biological functions, health and activity.

Many more recent studies based on the demand-control-support model also demonstrate the important role of social support for employees' psychological health and well-being. These studies indicate that low social support is significantly associated with emotional exhaustion, an increased risk of myocardial infarction and stroke<sup>45</sup>, mental distress and poor health functioning (as measured by the SF-36 General Health Survey)<sup>46</sup>. A recent study<sup>47</sup> indicates that, in addition to well-known work-related risks, there are numerous new risks for employed people in all occupations. These issues require greater research attention. The results of the present study indicate that lack of employer support for innovative work and underutilization of formal education, skills and knowledge at work are new risk factors that can significantly contribute to deterioration of employee well-being and health.

Karasek and Siegrist, the authors of the widely used theories of work-related stress, note that in addition to medical intervention, it is necessary to change

the social conditions that cause increased stress and specific forms of psychological ill health. Similarly, Tsutsumi and Kawakami<sup>49)</sup>, in their study based on the effort-reward imbalance model, claim that intervention should go beyond individual interventions that require organizational changes and employer involvement.

The intention of this study was to provide an empirical contribution to the analysis of the relationships among education-job mismatch, underemployment and organizational support for innovative work. It is also expected that the findings can provide some evidence for informed decision-making related to educational and employment policies that can encourage employers to enhance support for innovative work. Employer support for creativity can contribute to greater utilization of the knowledge and skills of a large part of the underemployed labor force. This information holds the potential to mitigate the negative consequences of underemployment, to meet organizational needs for innovation, and to satisfy the individual's desire for involvement in meaningful and productive work. Considering the high level of underemployment and the important role of organizational support, it is reasonable to expect that research studies, policies and educational programs focused on support for innovative work will mitigate to some extent the negative consequences of underemployment and improve the quality of employees' working lives.

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