ANALYSIS THE RELATIONSHIP BETWEEN JOB STRESS, INTRINSIC MOTIVATION & EMPLOYEES CREATIVITY IN ISLAMIC REPUBLIC OF IRAN RAILWAYS ORGANIZATION

Abdollah Kouloubandi
Department Of Management, Central Tehran Branch, Islamic Azad University, Tehran, Iran

Manouchehr Jofreh
Department Of Management, Central Tehran Branch, Islamic Azad University, Tehran, Iran

Fatemeh Sadat Mahdavi
Department Of Management, Central Tehran Branch, Islamic Azad University, Tehran, Iran

Abstract
Nowadays, organizations are questing for creative employees to help them cope with the increasingly complex, dynamic, and challenging environment. Not only would they desire novel ideas that improve the effectiveness of the existing practices, but also radically novel ideas that create new business opportunities. Organizations strive to create new demand or blue oceans that denote “all the industries not in existence today—the unknown or untapped market space, untainted by competition”. A number of factors have resulted in creativity becoming more critical across jobs and organizations. For example job stress, work load and work place motivations are such factors that have direct and indirect effects on creativity. So, this study tries to appear these relations among executive employees of Islamic Republic of Iran Railways Organization. Using a convenient sample of 245 employees, we found that motivation and role ambiguity variables have a reverse significant relationship with creativity. In addition, role conflict showed a reverse significant relationship with intrinsic motivation.

Keywords: Job Stress, Intrinsic motivation, Employees Creativity, Role Conflict, Role Ambiguity
1. Introduction
Creativity does not come magically from an invisible hand; it comes from people. Human assets are regarded as the primary source of value, growth, and sustained competitive advantage (Zhang & Bartol, 2010; Pfaffler, 1994; Prahalad & Hamel, 1990). In the 1960’s, Drucker (1992) foresaw the emergence of knowledge workers who could apply theoretical and analytical knowledge that was acquired through formal education to developing new products or services. Thus, human creativity is “the ultimate economic resource, arguing creativity is ultimately what raises productivity and thus living standards” (Florida, 2002,).

According to Florida (2002), a regional economist, there are three forms of creativity: technological creativity, economic creativity, and artistic and cultural creativity. Technological creativity refers to inventions or improvements in products, services, and processes. Economic creativity has to do with entrepreneurship and new business models. Artistic and cultural creativity includes music, art, and creative writing. Thus, with this range of perspectives, creativity can be generated by employees not only in jobs that are traditionally viewed as requiring creativity, but in any job and at any level of the organization (Madjar, Oldham, & Pratt, 2002). But there is a significant question in the field of organization about factors that influence creativity. Many organizational researchers consider job stress to be an important work-related factor.

Researchers have found strong links between job stress, and individual attitudes and behaviors in the workplace. Jex, Beehr, and Roberts (1992) found job dissatisfaction, anxiety, frustration, depression and turnover intention as direct outcomes of stress. Similarly, anxiety has been identified as a major effect of work-related stress by many researchers (Dewe, 2003, Glazer & Beehr, 2005; Liu, Spector, & Jex, 2005). Job dissatisfaction was found to be another major effect of job stress (Barsky, Thoreson, Warren & Kaplan, 2004; Fox & Spector, 2006; Liu, Spector & Jex, 2005). Fox and Spector (2006) identified counter-productive work behavior (CWB) as a behavioral response caused by job stress. Some HRD scholars have suggested the potential negative effects of job stress or anxiety on transfer of learning (Noe, 2000; Russ-Eft, 2001). In an ever changing work environment, keeping employees motivated is important to the success of the organization (Scofidio, 2004).

The motivators for success are different for every individual. Also the motivators in every organization are different. The manager’s job is to keep employees motivated to meet the goals of the organization. A critical goal of managers is to keep all processes running as smoothly as possible. The manager must direct all of the activities in the organization to meet performance goals. This can become very difficult if the human capital sees no reason to meet these goals. So all things equal the managers can keep the process running smoothly if the manager can keep motivation high (Scofidio, 2004). A thorough review of literature was conducted with the primary goal of determining the relevance of existing empirical studies measuring motivation between skilled and unskilled employees, generational differences in employees, and immigrant employees, and how management can motivate these employees. Employees are motivated by many different things. These include but are not limited to pay, rewards, goals, self efficacy, and other intrinsic and extrinsic factors (Robbins & Judge, 2008). By determining the motivation of employees, employers can then use this information to help the organization achieve its goals. Different skills are required for different work. Different employees require different motivational factors. Skilled employees are more likely to choose their skill sets, and thus the employee’s job, these employees would be likely to see the job in a favorable light (Asad & Dainty, 2005). So, this study focuses on an especial group of executive employees to find more reliable results.
2. Literature review
2.1. Motivation

Researching what motivates people has been going on for decades; it is a complex topic because not all employees are motivated by the same factors so it is difficult to find one theory that covers all situations. One of the most popular motivation theories is Maslow’s (1999) hierarchy of needs. This theory was developed by Abraham Maslow in 1943 and theorizes that people are motivated by unsatisfied needs beginning with the most basic physiological needs and progressing through self-actualization (Maslow, 1999). Once the needs at one stage are met, people may then be motivated to seek satisfaction at the next stage (Maslow, 1999). Employees whose physiological needs are not met may not be motivated by things such as higher wages according to Udechukwu (2009) who also believed that the first level of needs are not being met if the employees are not earning enough to pay for those basic needs such as shelter and food. Udechukwu showed that employees who were not getting these basic needs met through their employment would be more likely to leave their employment than employees who were getting their basic needs met. Pink (2009) showed that people at lower pay levels were more motivated by financial rewards than employees at higher levels who were being paid more than adequately to meet their basic needs. Once a person’s physical needs are met, Maslow (1999) stated that a person would be motivated by safety needs, followed by the need for love or a sense of belonging. In a study reported on by Udechukwu of correctional officers, participants indicated that the need for love or a sense of belonging was a difficult need to meet at their workplace due to the intense competition for the higher-level jobs where there would be more of a sense of teamwork. This is relevant to the study of how FD affected motivation because the FD method does promote competition (Garcia & Tor, 2007). The final two steps of the hierarchy are esteem and self-actualization (Maslow, 1999). A number of elements may affect employee motivation. One of these elements is supervisor expectation; if a supervisor expects a lot out of employees and communicates this to them, employees tend to be motivated to meet those expectations (Yuan & Woodman, 2010). Lloyd (2010) described three factors that affect motivation: (a) the individual’s self-motivation, (b) the manager’s reaction to the employee, and (c) the work itself. Maccoby (2010) believed that managers have an ability to affect motivation and suggested that they employ a mix of four R’s to increase motivation: responsibility, relationships, rewards, and reasons. Employers can motivate employees by giving them more responsibilities, helping them develop close relationships with co-workers as well as managers, rewarding them for a job well done, and by telling them the reasons they are being asked to do certain things (Maccoby, 2010). Maccoby also suggested that responsibilities be meaningful, work relationships be positive, and rewards show appreciation. Jay (2010) believed that in order to be motivators, managers must first be motivated and suggested that they can increase their own motivation by staying connected to their work, knowing the requirements for improvement, finding a good support system, and maintaining a balance between their home and their work life (Jay, 2010). A person’s work life has become more separated from community and home life; this has contributed to a lack of motivation (Chalofsky & Krishna, 2009). The balance between home and work life may be important both for management and for lower-level employees. Heath and Heath (2010) suggested that people may be motivated by applying the three-part process of reaching people’s rational minds, appealing to their emotions, and shaping the environment for change. Managers can reach employee’s rational minds by involving them in the change process; this will engage them and elicit their input (Heath & Heath, 2010). Employers can appeal to employees’ emotions by helping them be more invested in the company’s success, if employees can see their part in the process; they will be willing to do what they can to help the company (Heath & Heath, 2010). Employers can shape the environment for change by ensuring that the work environment is a positive one (Heath & Heath, 2010).
2.2. Job Stress

Among related studies, job stress a leading issue and the focus of many organizational researchers (Dormann & Zapf, 2002; Fox & Spector, 2006). Situations that create stress, such as downsizing, technology, violence, are part of the current business environment. Further sources of stress in the workplace include work overload, incompetent supervisors, role ambiguity, and lack of recognition, among others (p. 56). According to Dwyer and Ganster (1991) it is a wide and popularly accepted proposition that stressful work conditions generate significant costs in terms of low productivity, sickness, and lost time (p. 595). DeFrank and Ivancevich (1998) found that, in 1990 stress related claims become the fastest growing segment of the Workers Compensation System (p. 55). Although scholars are in agreement about the presence of stress-creating situations and events in today’s workplace, there is a lack of consensus on defining stress. The term stress is defined in the work stress literature by some as a cause, and by others, as an effect (Ganster & Schaubroeck, 1991; Jex, Beehr, & Roberts, 1992; Karasek, 1979). This general lack of agreement is due to the different and sometimes opposite theoretical connotations given to the elements involved in the stress process. Parker and DeCotiis (1983) summarize the confusion or lack of consensus among stress researchers thus: “…there is no consensus on the concept of stress…it is whatever a given researcher says it is” (p. 161). Jex et al., (1992) classified work stress researchers under three groups: (1) researchers who considered work stress as a stimulus that is as a job stressor or an environmental element or occurrence (a cause); (2) researchers who defined stress as a response, that is an individual’s reaction or response to a workplace event or a strain (an effect); and (3) researchers who regarded stress as a stimulus-response process (as the interaction between an environmental event or job stressor and the individual’s response/strain). According to these authors, most stress researchers can be best categorized as framing stress as a stimulus-response process. Many researchers have used emotion theory to explain the stress process and studies have shown that the stress process is transactional in nature (Lowe & Bennett, 2002). For instance Dewe (1992), in support of the transactional nature of stress, argued that stress did not reside just in the environment, or in an individual, but it is an outcome of the interaction between the individual and the environment. Stressors are not only the result of an individual’s perception of the source of an event that causes negative response but also how that event is evaluated or appraised by the individual, hence appraisal is important in determining what is, and what a stressor is not. The three constructs involved in the stress process, stressors, appraisal and coping were empirically validated by Dewe (1992). He also identified three categories of primary appraisals. A more recent study by Lowe and Bennett (2002) found that participants did appraise situational events based on how relevant and how congruent the event was to the participant’s personal goals, thus adding further support to the existence of primary appraisal. They also found a strong presence of two emotions, anxiety and anger. Other studies in stress research have used emotion theory to explain relationships within the stress process and also to explain other work attitudes and behaviors that could be linked to stress (Fox & Spector, 2006; Glazer & Beehr, 2005). Fox and Spector (2006) used emotion theory to explain their stressor-emotional model. They found that a lack of control or autonomy results in counter productive work behavior (CWB), a negative emotion or strain. Lowe and Bennett (2003) found support for the presence of coping strategies. High-emotion focused coping and high problem focused coping strategies were found to be used by participants who experienced stressful encounters. Dewe (2003), in his study, found that all coping strategies did not fit all situations. Similarly, coping responses were found to be different based on the nature of the emotional response. Based on the study Dewe (2003) suggested that coping strategies may need to be combined with other coping strategies to effectively handle the situation. Many studies involve measurement of stressors (job demands, time pressures, role ambiguity) and strains (anxiety) under the construct “stress” (Fields, 2002).
For instance, Parker and DeCotiis (1983) measured anxiety and time stress as two dimensions of job stress. They defined job stress as a response to, what they termed, organizational and work-related stressors. However, it is important to note that this is different from using the term ‘stress’ in the instrument that measures stress as done by some researchers (Jex, Beehr, & Roberts, 1992). As mentioned previously, the term stress has been referred to as a stimulus by some researchers and as a response by some others (Jex et al., 1992). Ellis (2006) termed stress as a response that negatively affected a person’s well being, and Janssen (2004) used the term stress to refer to responses such as anxiety and burnout which are usually categorized as strains. Jex, Beehr and Roberts (1992) conducted a study to find how study participants perceived the term stress. In their survey, they included sixteen items using the term “stress” in different ways and contexts. They also included measures of work-related stressors (role ambiguity, role conflict, perceived workload, and interpersonal conflict), and psychological strains (job dissatisfaction, anxiety, frustration, depression, and turnover intent). According to the results stress items most strongly related with anxiety. Most referred to stress as a response to an unpleasant event. This finding is useful because the term stress is used in reference to both stressors and strains (Jex et al., 1992).

2.3. Creativity

Over the past decades, research on employee creativity has made considerable advancement under the influences of the componential model of creativity (Amabile, 1988, 2008) and the interactionism approach (Woodman, Sawyer, & Griffin, 1993). Prior research has extensively examined the antecedents of employee creativity (Amabile & Mueller, 2008). Recently, there is an increasing attention on the impacts of employee creativity on workplace outcomes (e.g., Gong et al., 2009). Creativity has been conceptualized in three major approaches. The “person-centered” approach focuses on identifying individual differences such as personality (Gough, 1979), cognitive style (Kirton, 1976), or creativity potential. This line of research suggests that individuals who possess specific dispositional characteristics or cognitive skills are capable of “thinking outside the box”. The “process-centered” approach focuses on the overall process that individuals engage in the generation of creative outcomes (e.g., Madjar & Shalley, 2008). Individuals may go through the stages of problem identification, resources preparation, idea generation, and idea evaluation in their productions of creative ideas (Amabile, 1988). This line of research suggests that an understanding of personal and contextual characteristics affecting each stage helps facilitate the creative process leading to the outcomes (i.e., novel ideas) (Shalley et al., 2004). The “outcome-centered” approach examines creativity as tangible or intangible outputs (e.g., ideas, products, procedures, and services) (e.g., Amabile, 1988). This line of research suggests that personal and contextual factors will impact the newness of the outcomes (Amabile, 1988; Amabile & Mueller, 2008; Woodman et al., 1993). Majority of past studies in employee creativity has conceptualized creativity as an outcome like this study. In general, creativity has been conceptualized as a unitary construct and measured on a continuum ranging from low to high level of novelty and usefulness. There are two basic problems with this conventional conceptualization. First, there are debates on whether the unitary concept sufficiently reflects the complexity of creativity (e.g., Audia & Goncalo, 2007). In a broader sense, Gardner (1993) suggested that there are ideas that slightly differ from daily routines and there are “big C creativity” that突破through the cultural standards in the society. Sternberg (2006) suggested that creative contributions can be located in a multidimensional space that encompasses dimensions such as the disciplines (e.g., arts, psychology) and subfields within each discipline (e.g., social psychology, cognitive psychology), methodology (e.g., experiment, interviews), and mental processes (e.g., emotion, memory, etc.). His typology of creativity can indeed be categorized into two types: one that accepts the current paradigms of work and another that rejects them. Unsworth (2001) conceptualized creativity based on the problem type and the motive to engage in creative process. The resulting typology suggests four types of creativity. Responsive creativity is...
the result of an external requirement imposed on the person to respond to a specified problem. Contributory creativity is the result of an internally driven solution to a specified problem. Expected creativity is the result of an external expectation on self-discovered problem. Proactive creativity is the result of intrinsically motivated solution to a self-discovered problem. The various typologies speak to the complex nature of creativity and bring to the attention the insufficiency of existing unitary creativity concept in reflecting such complexity. Prior studies that examined the facilitating factors on employee creativity with the unitary conceptualization appear to imply that higher level of creativity is often more favorable than lower level of creativity (Shalley & Perry-Smith, 2001). However, novel ideas that differ in the degree of newness may be equally valued. Davenport (1993), for instance, discussed the importance of integrating continuous process improvement and radical process innovations for organizations to improve their operational effectiveness. Zhou and Shalley (2003) suggested that different levels of novelty may be desirable at different point of time. The introduction of “blue” M&M chocolate beans boosted the product sales tremendously (Madjar & Gilson, 2008). These examples inform the value of creativity that may be lower in novelty to organizational performance. To improve current understanding on the performance implications of employee creativity, a delineation of different types of creativity based on sound theoretical reasoning is needed. Recently, Madjar and Gilson (2008) delineated incremental creativity and radical creativity. They defined incremental creativity as novel ideas that modify current practices and products and require few changes in current paradigms. Radical creativity was defined as ideas that are fundamentally different from the existing paradigms of the organizations. The theoretical underpinning for the proposed conceptualization, however, was largely missing. The concepts of incremental creativity and radical creativity are indeed in line with the widely-accepted conceptualizations of incremental innovation and radical innovation in the organizational innovation literature (Tushman & Nelson, 1990), and exploitation and exploration in the organizational learning literature (March, 1991). Innovation is the successful implementation of individual creativity (Nord & Tucker, 1987), which is a product of individuals’ effort in generating new insights via knowledge seeking. March’s (1991) seminal work on organizational learning also suggests that any adaptive systems, in order to survive and grow, may engage in the refinement of existing systems through learning from experience (i.e., exploitation). Organizations may shift to new systems through discovering new knowledge (i.e., exploration). As with organizational learning and innovation literature, Madjar and Gilson’s (2008) two-dimensional conceptualization of employee creativity helps address the existing misalignment between employee creativity and organizational innovation.

3. Research Methodology

The purpose of this study was to address the research question and the supporting hypotheses about the relationships among job stress, motivation and employees creativity. For data analysis, structural equation model (SEM) technique was used using Lisrel software to find below hypothesis answer. Figure 1 shows research conceptual model:

**Hypothesis 1:** Job conflict has significant effect on role ambiguity.

**Hypothesis 2:** Role ambiguity has significant effect on intrinsic motivation.

**Hypothesis 3:** Job Conflict has significant effect on intrinsic motivation.

**Hypothesis 4:** Job Conflict has significant effect on employee’s creativity.

**Hypothesis 5:** Role ambiguity has significant effect on employee’s creativity.

**Hypothesis 6:** Intrinsic motivation has significant effect on employee’s creativity.

While differences in skilled and unskilled employees can be noticeable, when the different employees work in the same organization the differences are magnified (Asad, & Dainty, 2005). Conditions of work can also be magnified. When there is a difference between working conditions employees recognize this differentiation. These disparities in conditions can breed...
discontent in the organization and build resentment for the employee with the better conditions. While it is not true in every case, a skilled employee’s environment would maintain better conditions than an unskilled employee’s environment would (Asad & Dainty, 2005). For a better understanding of situation in Islamic Republic of Iran Railways Organization, only executive employees were studied.

**Figure 1: Research conceptual model**

Overall Cronbach’s alpha for the measurement tools was 0.91 which shows a high degree of reliability. In addition, validity of questionnaires was confirmed using opinion of several experts in this field of study.

Our sample size was equal to 649 executive employees of Islamic Republic of Iran Railways Organization. So using a sample size determination formula and after distribution of final questionnaires, 245 complete questionnaires (more than determined size) used for final analysis.

\[
    n = \frac{649 \times 1.96^2 \times 0.5 \times 0.5}{648 \times (0.05)^2 + 1.96^2 \times 0.5 \times 0.5} = 241.5 \approx 242
\]

As we mentioned earlier, SEM was employed as a primary statistical method to test CFA and the hypotheses. SEM, a statistical procedure for testing the validity of a theory about the causal links among variables, has become increasingly popular in the behavioral sciences (Burnette & Williams, 2005). It provides a comprehensive approach to a research question for assessing and modifying theoretical models (Anderson & Gerbing, 1998). SEM can be conceptualized as the analysis of two hypothetically distinct models: the measurement model and the structural model (Burnette & Williams, 2005). The measurement model is a CFA model that indicates the relation of the observed variables to the proposed underlying constructs (Anderson & Gerbing, 1988). The structural model is also a CFA in nature and is used to specify the causal relations of the constructs to one another based on a priori theory and hypotheses (Anderson & Gerbing, 1988).

4. Data Analysis & Research Results

Using the two-step method, the measurement and structure models were examined in separate steps. First, the measurement model was analyzed to test the adequacy of the hypothesized factor structure for all variables. CFA, “a second-generation method for approaching construct validity”. Second, several structural models representing the hypothesized structural relationships among latent variables were evaluated. In order to determine the adequacy of model fit to the data, In addition to chi-square ($\chi^2$), this study reported root mean square error of approximation (RMSEA); non-normed fit index (NNFI); comparative fit index (CFI); standardized root mean square residual (SRMR). The significance of the individual paths in the best fitting nested model...
was assessed to determine the strength of the hypothesized relationships among the constructs. Then, both fit and parsimony in a series of alternative nested models were compared.

Figure 2: Hypothesized Structural Model

Chi-Square=691.31, df=265, P-value=0.00000, RMSEA=0.082
Chi-Square=691.31, df=265, P-value=0.00000, RMSEA=0.082

Figure 3: T Value for evaluation of determined path coefficients
Table 1: Path coefficients

<table>
<thead>
<tr>
<th>T-value</th>
<th>Path Coefficient</th>
<th>Investigated Path in Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>-3.83</td>
<td>**-0.41</td>
<td>Role Ambiguity ← Job Conflict</td>
</tr>
<tr>
<td>3.73</td>
<td>**0.68</td>
<td>Intrinsic motivation ← Role Ambiguity</td>
</tr>
<tr>
<td>-3.23</td>
<td>**-0.31</td>
<td>Intrinsic motivation ← Job Conflict</td>
</tr>
<tr>
<td>2.07</td>
<td>**0.23</td>
<td>Employees Creativity ← Job Conflict</td>
</tr>
<tr>
<td>-3.24</td>
<td>**-1.13</td>
<td>Employees Creativity ← Role Ambiguity</td>
</tr>
<tr>
<td>2.10</td>
<td>**0.29</td>
<td>Employees Creativity ← Intrinsic motivation</td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level

5. Discussion & Conclusion

Amabile and her colleagues (1988, 2008) have suggested that the supervisor plays an important role in encouraging creativity. Accordingly, research has found that non-supportive supervision and close supervisory monitoring negatively influence employee creativity (Oldham & Cummings, 1996) and supervisory support, encouragement, and expectations positively influence creativity (Tierney & Farmer, 2004). Thus we measured some new variables effects on creativity such as job conflict, role ambiguity, and intrinsic motivation. Amabile (1988) described a motivated employee as being driven and excited by the work involved in job tasks. Using these backgrounds, we found that job conflict has a negative effect on role ambiguity with path coefficient of -0.41 and role ambiguity has a positive effect on intrinsic motivation. In the third hypothesis we found that job conflict has a negative influence on intrinsic motivation. The main finding of this study is about creativity variable. Our results show that job conflict and intrinsic motivation have significant positive effect on creativity but role ambiguity with path coefficient at level of -1.13 has a negative effect on creativity.

Two existing studies offer valuable insights on the proposed conceptualization of creativity. Audia and Goncalo (2007) differentiated between incremental and divergent creativity, with the later represents the radically novel ideas that “divergent significantly from an existing paradigm” (p. 2). They found that past successes of individuals lead them to rely on previously used knowledge, and thus result in the production of less divergent ideas (i.e., radical creativity). They also found the relationship between individual past success and divergent creativity to be weakened when employees collaborate with others, which expose themselves to diverse perspectives. Their operationalization of divergent creativity with patent disclosures, however, appeared to focus solely on divergent creativity. In an unpublished study, Madjar and Gilson (2008) found that the impacts of individual motivation, the stage of creative process, and the setting where the creativity took place had differential impacts on incremental creativity and radical creativity. They found that intrinsic motivation had greater impact on radical creativity, whereas extrinsic motivation had greater impact on incremental creativity. In addition, creativity was found to be more radical than incremental at the problem identification stage.
References


