

Linking Psychological Empowerment, Individual Creativity and Firm Innovativeness: A Research on Turkish Manufacturing Industry

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Abstract

Purpose

The aim of this study is to determine empirically the impacts of four dimensions of psychological empowerment including meaning, competence, impact and self-determination on individual creativity and its relationship with firm innovativeness.

Design/methodology/approach

The authors propose a model that four dimensions of psychological empowerment have significant effect on individual creativity which turns into firm innovativeness. Hypotheses are tested with data collected from 181 managers at 48 small and medium-sized Turkish manufacturing companies using partial least squares method.

Findings

The results suggest that psychological empowerment have significant effects on individual creativity and also through their actions, creative employees may increase firm innovativeness.

Research limitations/implications

The results of the study, although shedding light on the factorization of the constructs and possible relationships, is specific to a particular geographical region of Turkey and to one industry.

Originality/value

This study is unique because to our knowledge, although many researchers have emphasized the importance of individual creativity and stated that individual creativity is the starting point and key ingredient for the success of organizational innovation, there is no empirical research that relates four dimensions of psychological empowerment, individual creativity and innovation.

Key words: psychological empowerment, individual creativity, firm innovativeness

Jel Classification: M1



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INTRODUCTION

Widespread interest in psychological empowerment comes at a time when global competition and change require employee initiative, innovation and performance (Spreitzer, 1995; Drucker, 1988). Several definitions of empowerment have been produced and they in common involve offering employees the control, freedom, and information to participate in decision-making and organizational affairs (Conger and Kanungo, 1988; Randolph, 2000; Spreitzer, 1995; Thomas and Velthouse, 1990; Wilkonson, 1998; Daft, 2001). Some researchers focus to employees' psychological aspects (Conger and Kanungo, 1988, Thomas and Velthouse, 1990, Spreitzer, 1995). They defined empowerment more broadly as increased intrinsic task motivation manifested in a set of four cognitions reflecting an individual's orientation to his or her work role: meaning, competence, self-determination, and impact (Spreitzer, 1995, 1443). Combining organizational and psychological domains, employee empowerment may be viewed as a cognitive state, a psychologically empowered experience with power-sharing, competence and value internalization in organizations (Chang, Liu, 2008, 1443).

A review in psychological empowerment literature reveals that most of the researchers focus on the impacts of psychological empowerment on job satisfaction, organizational commitment, perceived individual performance and strain (Spreitzer, Kizilos & Nason, 1997; Liden, Wayne & Sparrowe, 2000; Laschinger et al., 2001; Chang, Shih & Lin, 2010). There are a only few studies that investigates the relationships among psychological empowerment, individual creativity and innovation. For instance,

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Spreitzer (1995) argues that psychological empowerment is a statistically significant predictor of innovative behaviour. Furthermore, Knol & Linge (2009) research on nurses also confirm that structural as well as psychological empowerment leads to innovative behaviour. In addition, Zhang & Bartol (2010) found a significant correlation between psychological empowerment and creativity, but also introduced a promising moderating variable, empowerment role identity which lead to conclude that not all employees desired the same degree of empowerment (p.11). Consequently, the above mentioned studies have tested the impact of psychological empowerment on individual creativity but no empirical research exists that investigates separately the impact of four dimensions of psychological empowerment on individual creativity.

On the other hand, creative behavior is defined as behavior that results in identifying original and better ways to accomplish some purpose (Amabile, 1988; Abbey and Dickson, 1983) and developing solutions to job-related problems that are judged as both novel and appropriate for the situation (Shalley 1995: 483). Since it is the foundation of organizational creativity and innovation, scholars and the practitioners have focused on individual creativity in general, and how work environments can foster employee creativity in particular (Abbey, Dickson, 1983; Amabile, 1988, 1990, 1993, 1996; Woodman, Sawyer, & Griffin, 1993; Shalley, 1995; Shalley et al., 2000; Amabile et al., 1996; Cummings, Oldham, 1997). Organizational behavior literature widely emphasizes individual characteristics as important determinants for firm innovativeness; but only a few studies have examined the impact of individual creativity on firm innovativeness (Bharadwaj and Mennon; Gümüüluoğlu and İlsev, 2009; Çekmecelioglu and Günsel; 2013).

Creative individuals are worth to examine because they identify original and better ways to accomplish some purpose (Amabile, 1988; Abbey and Dickson, 1983) and develop solutions to job-related problems that are judged as both novel and appropriate for the situation (Shalley (1995: 483). Creative employees are more likely to discover customers' hidden needs, and solve their problems creatively and effectively, ultimately creating a superior performance (Grewal et al., 2009; Verhoef et al., 2009). In this view, creativity by individuals and teams is a starting point for innovation (Amabile et al., 1996) and individual creativity provides the foundation for organizational creativity and innovation (Amabile, 1988).

Reviewing the literature reveals that psychological empowerment, creativity and innovation have been studied intensively by organizational behaviour researchers in recent years. However, this study have tested a conceptual model that exceptionally integrates psychological empowerment, individual creativity and firm innovativeness. But this is not the only reason to claim that this study is unique and contributes to the literature. An other reason is that it provides important findings and guiding related to innovation management practices for Turkish companies and managers and as well as other developing countries since Turkey can be considered quite safely as representative of many developing countries. In developing countries, managers are more likely to assume that their employees have an external locus of control, have limited and fix potential and have a short time focus and tend to favor an authoritarian or paternalistic orientation (Paşa, Kabasakal & Bodur, 2001, p. 563). Therefore by this study we also investigate whether findings from Western theories can be extended to a developing country. In addition, Turkish culture has long been described as being high on collectivism, uncertainty avoiding and power distance which is defined as "The extent to which the less powerful persons in a society accept inequality in power and consider it as normal" (Hofstede, 1983). For that reason, although numerous studies have explored the phenomenon of psychological empowerment, Turkish collectivistic culture with high-power distances and carrying paternalistic values may be different from those that influence empowerment in individualistic Western cultures with low-power distances.

LITERATURE REVIEW AND HYPOTHESES

Psychological Empowerment and Individual Creativity

Despite the concept of empowerment has gained increased popularity in the management field, many scholars still reduce the meaning of it to delegate or share power with subordinates. This idea of delegation and the decentralization of decision-making power is widespread in describing the empowerment concept (Burke, 1986; Kanter, 1983). Conger & Kanungo critically analyze this and propose that empowerment should be viewed as a motivational construct that means "to enable" rather than

simply “to delegate”. They claim that there are various other conditions of empowering besides delegation, resource sharing or participation. By using Bandura's self-efficacy notion (1986) they defined empowerment “as a process of enhancing feelings of self-efficacy among organizational members through the identification of conditions that foster powerlessness and through their removal by both formal organizational practices and informal techniques of providing efficacy information” (1988: 474). Accordingly, they identify the principal contextual factors that contribute to the lowering of self-efficacy beliefs in organizational members that are organized into four categories such as organizational, supervisory style, reward systems, and job design (1988: 476).

Afterwards Thomas and Velthouse (1990) described empowerment using motivational assumptions of the job design literature (Deci, 1975; Hackman & Oldham, 1980; Bandura, 1986). Empowerment is defined as increased intrinsic task motivation, and their model identifies four cognitions as the basis for employee empowerment: impact ((the ability to affect or influence organizational outcomes), competence (sense of confidence in abilities that is similar to Conger and Kanungo's (1988) concept of self-efficacy,) meaningfulness (value and meaning of the task) and choice (self-determination with experienced sense of responsibility). In parallel both Conger and Kanungo (1988) and Thomas and Velthouse (1990), Spreitzer (1995) validated a measure of psychological empowerment manifested in four cognitions: meaning, competence, self-determination, and impact.

Meaning was described as “the value of a work goal or propose, judge in relation to an individual's own ideals or standards” (Spritzer, 1999; p.40). It involves the individual's intrinsic caring about a given task. This use of meaningfulness is analogous to Hackman and Oldham's (1980) term, as a necessary psychological component of intrinsic task motivation (Thomas and Velthouse, 1990; p.667). This enhanced interest in a task itself would enable followers to search for new and better ways of doing things, which is likely to lead to high levels of creativity (Amabile, 1996; Woodman et al., 1993; Oldham & Cummings, 1996).

On the other hand, job design literature concluded that employees working on complex and demanding jobs are expected to arouse higher levels of intrinsic motivation than working on relatively simple and routine jobs (Hackman and Oldham 1980; Oldham and Cummings 1996). Furthermore, when an employee perceives that his or her job requirements are meaningful and personally valuable, the employee will persist in carrying out the assigned role and spend more effort on understanding a problem from various perspectives, searching for a solution using a wide variety of alternatives by connecting diverse sources of information (Gilson & Shalley, 2004 ; Zhang & Bartol, 2010) that could be linked to generation of new ideas and creativity. Thus, we expect meaning dimension of psychological empowerment to be positively related to individual creativity. Accordingly we hypothesize;

H1: Meaning dimension of psychological empowerment is positively related with individual creativity.

Competence, the second cognition was equated with self efficacy, and described as “an individual's belief in his or her capability to perform activities with skill” (Spritzer, 1999; p.40). According to Bandura (1989, p. 408), self-efficacy involves ‘beliefs in one's capabilities to mobilise the motivation, cognitive resources, and courses of action needed to meet given situational demands. The higher an individual' s level of self-efficacy, the more committed to achieve difficult goals and the more persistent to succeed. They also exhibit initiative, high effort, and persistence when they encountered difficulties (Bandura,1977), a necessary trait in creative process. On the other hand, Morrison and Phelps (1999) found that self-efficacy was positively related to taking charge at work (an important extra role behavior) and individuals with higher levels of self-efficacy are likely to receive expanded role expectations from their supervisors. Individuals who are the most skilled and competent at the technical aspects of work are the most likely to broaden their roles and engage in expanded jobs. The higher levels of job-related competence will broaden their roles, leading to receptivity to new ideas and creativity since employees learn about and introduce ideas applied successfully in enriched tasks and roles (Morgeson, Klinger & Hemingway, 2005, p.400). Enriched jobs enhance creativity since they are more challenging and thus require more complex mental activities and also expose employees to a broader rainbow of ideas that can be antecedents of

innovations. Thus, we expect competence dimension of psychological empowerment to be positively related to individual creativity. Accordingly we hypothesize;

H2: Competence dimension of psychological empowerment is positively related with individual creativity

Third, self-determination was described as “an individual’s sense of having choice in imitating and regulating action” (Spritzer, 1999, p.41). Self-determination that bears close resemblance to the ‘choice’ dimension of Thomas and Velthouse leads to ‘greater flexibility, creativity, initiative, resilience and self-regulation’ (1990: 673). When an employee has a certain degree of autonomy and can shape desired outcomes through his or her behaviors, the employee is likely to focus on an idea or a problem longer and more persistently (Deci & Ryan,1991; Spreitzer, 1995). It is clear from the creativity literature that participation in decision making and perceptions of autonomy are vital antecedents for creative outcomes (Amabile, 1988; Amabile et al., 2004). A sense of ownership and control over their own work may make employees feel more responsible for developing creative ideas in order to solve problems, stimulate to take risks, explore new cognitive pathways, and be playful with ideas. Autonomy, as opposed to supervisory control, relates to higher levels of intrinsic motivation, higher degrees of interest in work, flexibility and increased persistence of behavior change (Amabile et al., 1996; Oldham & Cummings, 1996; Scott & Bruce, 1994). Therefore an empowering leader should provide appropriate autonomy and control, give positive and informational feedback, set inspirational and/or meaningful goals and facilitate employee skill development in order to promote employees' feelings of self-determination and personal initiative at work, which should then boost levels of interest in work activities and enhance creative achievement (Conger and Kanungo,1988 ; Oldham & Cummings, 1996). Thus, we expect self determination to be positively related to individual creativity. Accordingly we hypothesize;

H3: Self-determination dimension of psychological empowerment is positively related with individual creativity.

Finally, impact was defined as “ the degree to which an individual can influence strategic, administrative or operating outcomes in the organization or larger environment” (Spritzer, 1999, p.43). Impact is seen as control over one’s environment or the belief that his/her actions are influencing the system (Thomas and Velthouse, 1990). Many researchers have observed that creativity is encouraged when individuals and teams operate in a relatively autonomous environment, experience a sense of ownership and perceive control over their ideas and work processes (e.g., Amabile et.al., 1996) When employees believe they have influence on organizational processes, they are more likely to put effort into generating, promoting, and realizing creative ideas for innovation than when they feel they are unlikely to make a difference due to a lack of impact (Janssen, 2005; 574). As such, this sense of having some control over the outcomes of organizational processes differentiates between impact and other aspects of empowerment distinguished in the literature such as competence and self-determination (Spreitzer, 1995). In sum, before engaging in an innovative and creative activity willingly, employees may need to feel that they have the power to influence their jobs and work environments in meaningful ways. Hence, we expect impact dimension of psychological empowerment to be positively related with individual creativity. Accordingly we hypothesize;

H4: Impact dimension of psychological empowerment is positively related with individual creativity.

In conclusion, there is substantial theoretical support for expecting that psychological empowerment plays a significant role in facilitating creativity and innovation in organizations. The reasoning for expecting a relationship between psychological empowerment and individual creativity in this paper is based on job characteristics theory Hackman & Oldham (1980) and Spreitzer’s (1995) model of empowerment.

Individual Creativity and Firm Innovativeness

Gopalakrishnan and Damanpour defined innovation as “programs, policies, systems, equipment, service, product, behavior or idea which is newly adapted to organization” (2000: 15). According to Hult et al. (2004) innovativeness is the capacity to introduce of some new process, product, or idea in the organization. Accordingly, in this study, firm innovativeness is described as to create new products and services, to make improvements for processes, to develop new management approaches, to be more successful than its competitors about the provision of new products and services.

A widely accepted definition states that creativity is development of novel and valuable ideas about products, practices, services or processes by an individual or group that are useful to the organization where innovation can be described as the successful implementation of these creative ideas within an organization (Amabile, 1996; Oldham & Cummings, 1996; Woodman, Sawyer, & Griffin 1993; Shalley, Gilson & Blum 2000). “Thus, no innovation is possible without the creative processes that mark the front end of the process: identifying important problems and opportunities, gathering information, generating new ideas, and exploring the validity of those ideas” (Amabile, 2004, p. 1).

From the above review, it can be concluded that individual creativity is important in and of itself and can be conceptualized as a necessary first step or precondition required for innovation (Scott and Bruce, 1995; Shalley, Gilson, 2004). Such creativity at the individual level, through idea generation and implementation, is likely to lead to the development of innovative products at the organizational level (Gümüşlüoğlu, İlsev, 2009, 465). Shalley et al. (2004) state that creative employees' new ideas are transferable to other employees in the organization for their own use and development Creative individuals can mobilize the motivation needed to meet innovative demands. Moreover, they are likely to spend more time on creative cognitive processes to develop problem solutions that are qualitatively high as well as the generation of ideas or solutions, and they make serious efforts to seek sponsorship for ideas and produce prototypes. Therefore, they can perform specific tasks successfully and achieve organizational innovation goals in the face of obstacles (Hsu, Hou& Fan, 2011, p.260-261). Since foundation of organizational creativity and innovation is ideas, and it is people who “develop, carry, react to, and modify ideas” (Van de Ven, 1986: 592), we expect individual creativity or creative behavior of individual will be positively related to firm innovativeness, and suggest the following hypothesis.

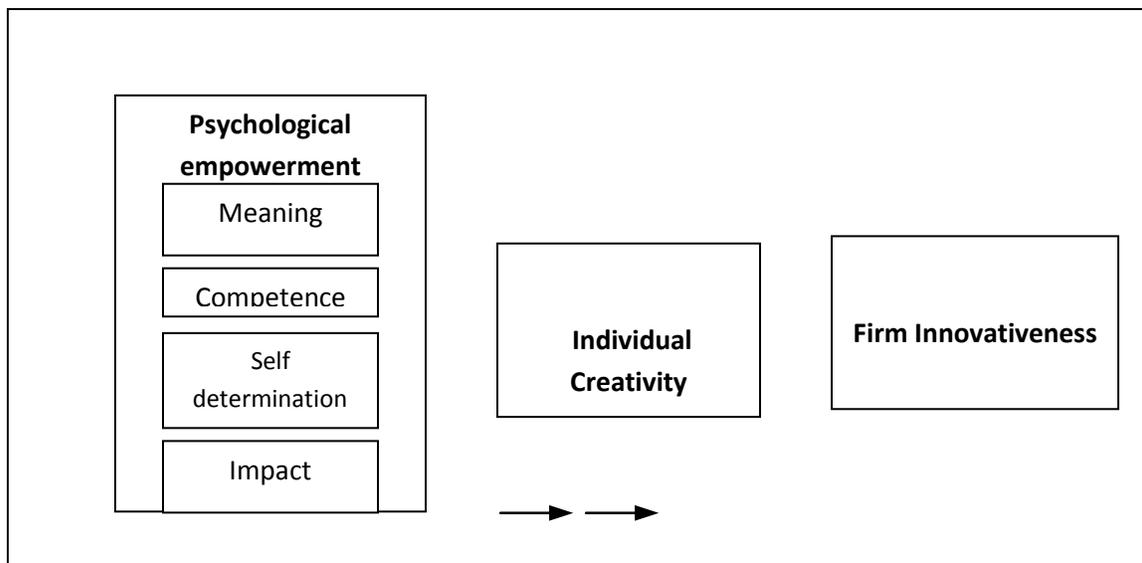
H5: Individual creativity is positively related with firm innovativeness.

RESEARCH METHODOLOGY

Research Design

The proposed conceptual model guiding this research is depicted in Fig. 1.

Figure 1. Proposed Model



We hypothesize psychological empowerment consisting of four dimensions such as meaning, competence; self-determination and impact have significant positive effect on individual creativity. Moreover, we predicted that individual creativity has significant positive effect on firm innovativeness.

Scales and Sampling

The purpose of this paper is to describe and analyze the mutual relationships among individual creativity, psychological empowerment and firm innovativeness. In order to empirically investigate the hypotheses, firms located around Kocaeli, operating in manufacturing industry were surveyed. Using the documents of Kocaeli Chamber of Commerce, 100 firms among 650 are identified as the target group of the research because of their availability. Tools such as e-mail, letter and face to face interviews are used for gathering data from the managers -top, middle or first line managers. A total of 181 questionnaires among 48 firms has returned. The mean age of the participants were 28,47; the proportion of men, 68%, and married 50,8%. Of the participants, %48,1 had university educations and %19,3 had master education, %%82,9 were first line managers, %11 were middle managers and %6,1 were top managers.

To test the above hypotheses, multi-item scales adopted from prior studies for the measurement of constructs were used. Individual creativity was measured by 13 items adopted from the creativity measure of Tierney et al. (1999). Psychological empowerment was measured by 12-items developed from the study of Spreitzer (1995). The scale contains three items for each of the four components of psychological empowerment: meaning, competence, self-determination and impact. Firm innovativeness was measured by 6-items developed from the study of Hult et al. All items were rated using a 5-point scale ranging from 1 ("Very strongly disagree") to 5 ("Very strongly agree").

Analysis and results

We used the partial least squares (PLS-Graph 3.0, Chin, 2001) approach to path modeling to estimate the measurement and structural parameters in our structural equation model (SEM) (Chin, 1998). The reason for using this technique is that PLS method can operate under limited number of observations and more discrete or continuous variables. Therefore PLS method is an appropriate method for analysing operational applications. PLS is also a latent variable modeling technique that incorporates multiple dependent constructs and explicitly recognizes measurement error (Karimi, 2009). Also PLS is far less restrictive in its distributional assumption and PLS applies to situations where knowledge about the distribution of the latent variables is limited and requires the estimates to be more closely tied to the data compared to covariance structure analysis (Fornell and Cha, 1994).

Measurement validation

In this study, following Kleijnen, Ruyter and Wetzels (2007), we used reflective indicators for all our constructs (see, Appendix 1). To assess the psychometric properties of the measurement instruments, we estimated a null model with no structural relationships. We evaluated reliability by means of composite scale reliability (CR) and average variance extracted (AVE). For all measures, PLS-based CR is well above the cut-off value of .70, and AVE exceeds the .50 cut-off value. In addition, we evaluated convergent validity by inspecting the standardized loadings of the measures on their respective constructs and found that all measures exhibit standardized loadings that exceed .60. We next assessed the discriminant validity of the measures. As suggested by Fornell and Larcker (1981), the AVE for each construct was greater than the squared latent factor correlations between pairs of constructs (see Table 1).

Hypothesis testing

We used PLS path modeling which allows for explicit estimation of latent variable (LV) scores, to estimate the main effects in our model (see Figure 1). We used PLS Graph 3.0 and Bootstrapping resampling method to test their statistical significance. This procedure entailed generating 500 subsamples of cases randomly selected, with replacement, from the original data. Path coefficients were then generated for each randomly selected subsample. T-statistics were calculated for all coefficients, based on their stability across the subsamples, indicating which links were statistically significant.

As shown in Table 2, the results illustrate that our hypotheses are largely confirmed. With regard to effects of dimensions of psychological empowerment on individual creativity we found that meaning ($\beta = .32, p < .01$), competence ($\beta = .24, p < .01$), and impact ($\beta = .27, p < .01$) are positively related to individual

creativity. Therefore H1, H2, H4 is supported but H3 is not supported. Further, we found that individual creativity is positively associated with firm innovativeness ($\beta = .33, p < .01$), supporting H5. Finally, findings in Table 2 indicate that dimensions of psychological empowerment explain 45% of variance in individual creativity, and finally the whole model explain 50% of variance in firm innovativeness.

Table 1. Correlations of latent variables

Variables		Mean	Std D.	1	2	3	4	5	6
Meaning	1	4.16	2.10	0.83(cr)	.182*	.235**	.235**	.259**	.260**
Competence	2	4.37	0.65		0.90(cr)	.438**	.343**	.171*	.215*
Self determination	3	3.80	0.87			0.87(cr)	.631**	.423**	.358**
Impact	4	3.45	0.97				0.94(cr)	.427**	.354**
Individual Creativity	5	3.97	0.55					0.91(cr)	.309**
Firm Innovativeness	6	3.69	0.77						0.90(cr)

Table 2. Hypothesis Testing Results

Hypothesis	Relationship	Path coefficient (β)	Results
H1	Meaning → Individual Creativity	.32**	Supported
H2	Competence → Individual Creativity	.24**	Supported
H3	Self determination → Individual Creativity	-.04	Not Supported
H4	Impact → Individual Creativity	.27**	Supported
H5	Individual Creativity → Firm Innovativeness	.33**	Supported

Fit measures	Endogenous construct	Final model
R^2	Individual Creativity	.45
	Firm innovativeness	.11

Path coefficients are not standardized.

** $p < .01$, * $p < .05$

CONCLUSION AND IMPLICATIONS

This study is unique because to our knowledge, although many researchers have emphasized the importance of individual creativity and stated that individual creativity is the starting point and key ingredient for the success of organizational innovation, there is not much research that relates psychological empowerment, individual creativity and innovation. Aiming to fill the gap in the literature, we focused on the role of psychological empowerment and individual creativity in fostering firm innovativeness. Consistent with our expectations based on Spreitzer's (1995) model of empowerment three of the four psychological empowerment components including meaning, competence and impact are found to be significantly and positively related to individual creativity.

Accordingly, when an employee perceives that his or her job requirements are meaningful and personally valuable, s/he can increase his or her creative activities by willingly spending time and effort necessary to thoroughly identify a problem, search for extensive information, and generate multiple ideas from different perspectives (Sun, Zhang, Qi and Zhen, 2012; Zhang and Bartol; 2010). Also psychologically empowered subordinates see themselves as more capable of shaping work roles and work context (Spreitzer, 1995), and are therefore motivated to try creative approaches to solving problems and performing tasks. In addition, researches revealed that increased self-efficacy beliefs by

enhancing perceptions of competence resulted in higher levels of creativity since it nourishes intrinsic motivation (Redmond et al.,1993; Bandura, 1997). This connection is remarkable because according to Amabile's compenential model of creativity domain expertise, creative-thinking skills, and intrinsic motivation is considered to be the most exclusive factors that have the potential to affect creativity.

On the other hand, this study found no significant relationship between self-determination and individual creativity consistent with the study of Ertürk (2012). Similarly, he found positive relationship between three of the four psychological empowerment components including meaning, competence and impact and innovation capability but the relationship between self determination and innovation capability was not found to be statistically significant. Relatedly, in a research carried out in a luxury hotel group by Amenumey and Lockwood reconceptualised the original psychological empowerment construct into three factors, producing results similar to those of Fulford and Enz (1995), Sigler and Pearson (2000), Hancer and George (2003) , and Dimitriades (2005). They claim that there has been a merging of the self-determination and impact constructs since in some organisations, employees do not distinguish clearly between their influences at the work / departmental level as opposed to their influence at the organisational level.

Another important result of the research is that there is a significant relationship between individual creativity and firm innovativeness. Accordingly, individuals who are trying new ways to solve organizational problems, risk-taking, developing plans and programs to implement their ideas are more effective in introduction of the firm's new product, process or technology. Also, according to the findings of this study, individual creativity and innovation can be developed through psychological empowerment. Supporting this idea, in a research conducted in Australia, Knight-Turvey (2006) found that empowerment and innovation were strongly linked. Therefore, to boost the level of firm innovation, it is suggested that managers, especially of manufacturing companies, should improve creativity through psychological empowerment. Because, having a sense of control over what to do and how to do their jobs would enhance individuals' capacity for creative behavior. Moreover, while composing vision and goals, each tasks meaning and impact should be defined carefully and explicitly. On the other side, for the sake of improving the competence of employees, managers should give importance to the staff training and development activities.

To conclude, this study was conducted in Turkey which has Eastern society features and found significant relationship among psychological empowerment, individual creativity and firm innovativeness. Turkey is regarded as to be relatively collectivistic, hierarchical and uncertainty avoiding (Hofstede; 1983) but the socio-cultural environment in Turkey is changing such that the relations between superiors and subordinates tend to be more participatory and empowering. On the other hand, to compete in the global arena successfully, it is also crucial for managers to identify the obstacles to create and innovate. The results of this research would lead to managerial implications to help raise the innovativeness of the firms of the developing countries. We also hope the findings of this study might be of interest to other researchers and future work in other cultures seems necessary to improve our understanding of the role of individual creativity and psychological empowerment play in innovation process.

Despite this study offers a number of contributions to the literature, like all researches it has some limitations. First of all, the results of the study, although shedding light on the factorisation of the constructs and possible relationships, is specific to a particular geographical region of Turkey and to one industry. We don't know whether these results would generalize to other industries. It would be beneficial if future studies replicate these findings in other companies to confirm generalizability in other settings. Second, we did not include personality type into our investigation and predicted that all employees desired the same degree of empowerment. However, some researches (e.g. Zhang & Bartol, 2010) indicates that employees with certain specific traits or of a particular personality type are more likely to experience psychological empowerment and thereby respond favorably to empowerment. Third, our study has only examined the role of psychological empowerment in fostering individual creativity. Yet, the behaviors of organizational members occur in a far more complex environment and could be affected by many additional factors such as organizational climate, leadership, reward system, resource

allocation, job design and etc. Therefore, it can be suggested to other researchers who want to study in this subject to investigate these factors in different regions and industries.

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APPENDIX

Table 3: The standard loading, composite reliability and AVE values of the items

Psychology empowerment	
Meaning (CR: 0,83, AVE:0,653)	
The work I do is very important to me	0.96
My job activities are personally meaningful to me	0.95
The work I do is meaningful to me	0.97
Competence (CR: 0,90, AVE:0,75)	
I am confident about my ability to do my job	0,90
I am self-assured about my capabilities to perform my work activities	0,87
I have mastered the skills necessary for my job	0,,83
Self-determination(CR:0,88, AVE:0,70)	
I can decide on my own how to go about doing my work	0,84
I have considerable opportunity for independence and freedom in how I do my job	0,84
	0,84

Impact(CR: 0,95 AVE:0,85)	
My impact on what happens in my department is large	0,93
I have a great deal of control over what happens in my department	0,95
I have significant influences over what happens in my department	0,89
Individual Creativity (CR:0,91, AVE:0,50)	
I suggest new ways to achieve goals or objectives	0.76
I come up with new and practical ideas to improve performance	0.70
I search out new technologies, processes, techniques, and/or product ideas	0.71
I suggest new ways to increase quality	0.75
	0.66
I am not afraid to take risks.	
I develop adequate plans and schedules for the implementation of new ideas.	0.73
I exhibit creativity on my job when given the opportunity to.	0.76
	0.60
I often have new and innovative ideas	
I suggest new ways of performing work tasks.	0.67
I often have a fresh approach to problems.	0.70
Firm Innovativeness (Composite Reliability = 0.899 , AVE = 0.600)	
Our new products and services are often perceived as very novel by customers	,72
New products and services in our company often put us up against new competitors	,67
In comparison with competitors, our company has introduced more innovative products and services during the past five years	,77
In comparison with competitors, our company is faster in bringing new products or services into the market	,87
The nature of the manufacturing process in our company is new compared with that of our main competitors	,75
We are constantly improving our business process	,82