

# Role of Stressors and Supervisory Style in Creative Behaviour of Employees with Moderating Role of Organizational Learning Capability: A case of Thai pharmaceutical firms

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## ABSTRACT

Creativity and innovation are often the reason that businesses flourish in modern era. Creative behaviour of employees is the driving force behind the success of most businesses. This study intended to investigate the association of stressors and supervisory style with creative behaviour of pharmaceutical firms' employees in Thailand. This study adopted quantitative research approach to test the proposed relationship among variables. Survey questionnaire with cross-section method carried out for the collection of data and PLS software used for the analysis of that collected data. This study found that stressors negatively affect creative behaviour of employees while supervisory style has positive effect on creative behaviour of employees. Moreover, this study found that organizational learning capability significantly moderate the relationship of stressors and supervisory style with creative behaviour of employees. Findings show that organizational learning capability could change the negative effect of

stressors on creative behaviour in positive. This study offers an integrated framework to explain creative behaviour and enrich the existing literature. Findings of this study offer guidelines for managers and business owners of pharmaceutical firms for taking appropriate measures to encourage creative behaviour among employees at workplace.

**Keywords:** stressors, supervisory style, creative behaviour, pharmaceutical firms.

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## INTRODUCTION

Globally, business organizations are supposed to efficiently create, advance, and retain their competitive edge for the long-term survival in the market (Urban, 2011). Among many of the component by which a business may attain competitive advantage, one of the most significant element is the innovative ability of a business that include technological advancement, new ways of performing operations, new design of the products, new manufacturing procedure, new marketing methods and furthermore new ways of training people (Chen & Kaufmann, 2008; Chetthamrongchai & Jermsittiparsert, 2019; Haseeb, Hussain, Kot, Androniceanu, & Jermsittiparsert, 2019). There are multiple elements and factors that are considered while determining the innovative ability of a business. Commonly, innovation is based on the imaginative thoughts of the personnel of firm (George & Zhou, 2007). The motive of generating, retaining, and advancing competitive benefit with the help of individuals inspires organizations in assessing the alternatives that utilize full capacity of employees. Among those alternatives, one alternative is improving workers' creative ability that is regarded essential for the success of an organization. Highly innovative and creative employees are most valuable asset of the

business that transform ideas into new useful form and generate valuable outputs by employing those innovative ideas (Abdelmoteleb, Mohamed Metwally, & Saha, 2018). Moreover, creative ability is acknowledged as one of the most significant elements of human performance that is considered crucial for the innovative performance of business (Chen & Kaufmann, 2008). Numerous previous scholars attempted to explain the idea of creative behaviours but an integrated research model is not available and required to explain the idea comprehensively. In this study, self-determination theory (SDT) is implemented for the purpose. SDT is a social psychological concept that has potential to differentiate the individual outcomes that are self-directed and autonomous likewise creative behaviour. Actually, SDT has been applied by the previous researchers for explaining job outcomes and specifically creative performance (Hon, 2012; Jaiswal & Dhar, 2017).

SDT provide a model to understand and comprehend the creative behaviour. It suggests that contextual elements are significant for the understanding of creative behaviour. The model focuses on the significance of environmental or contextual elements in promoting motivation at workplace. Hence, these elements generate positive results that include creative

behaviour. Thus, organizational support theory (OST) is applied to recognize those factors. Generally, OST theory states that there should be supportive business cultures that help employees in achievement of a person's job outcomes. Moreover, it also states that there should be a proper support system in an organization that removes hurdles in the way of performance. The application of OST is appropriate because it commonly proclaims that when employees expect that the organization supports them, they will respond by representative greater job performance (Eisenberger et al., 1986) such as presenting creative behaviour at workplace.

Organizational support can take a variety of forms and types. But the relevant literature on creativity suggests that supervisory style and stressors are the two most salient factors that have the potential to influence work motivation and subsequently creative behaviour. Therefore, the two variables will be examined to further validate their effect on creative behaviour. In addition to these organizational learning capability is purported to influence creative behaviour albeit in a controversial manner. Past studies have shown inconsistent findings of the effect of supervisory style on creative behaviour; whilst some found a positive effect; others revealed a contradictory result (Chong & Ma, 2010; De Jong & Den Hartog, 2007; El-Kot & Leat, 2008). Indeed because of the incongruent findings, previous works on creative behaviour suggest that the effect of supervisory style on creative behaviour still needs further exploration. Hence, the variable stressors will be included in this study for further examination. Stressors have also been proposed by OST to influence creative behaviour. Stressors have been identified as one of the significant factors of creativity. Among the stressors that have been examined by researchers are competition, time pressure, role conflict, role overload, and evaluation of employee's performance (Kristin Byron, Khazanchi, & Nazarian, 2010). However, there are inconsistencies in the conclusions of preceding researches on the association of stressors, motivation, and creative behaviour. Therefore, this study attempts to further examine the role of stressors in determining creative behaviour at work. SDT also postulates that contextual factors are able to enhance creative behaviour by motivating employees. However, the mere existence of contextual factors may not necessarily make employees feel motivated; whether or not they will be motivated depends on the situation they are in. This is another limitation of the SDT intended to be addressed in the study. By considering the situation, the theoretical understanding on the extent of influence of the contextual factors on motivation as a precursor to creative behaviour can be enhanced. Whether or not contextual factors will further motivate employees to be creative depends on how involved they are in their job. Finally as suggested by Muhtadi et al. (2013) and Navarrese (2008), research still needs to be conducted to further develop the concept of creative behaviour in different organizational settings, across different cultures, and within different samples and population to further increase its generalizability and external validity

(construct validation). The study of creativity in Thailand is still at its infancy stage. To date, studies on creativity in Thailand have been in the domain of pharmaceutical, conducted outside the boundaries of organization (Zhu, Gardner, & Chen, 2018). Limited attempts have been made to explore creativity within the organizational context in Thailand. Very few studies (Na-Nan et al., 2016; Pratoom & Savatsomboon, 2012) explored the issue of creativity within the Thailand organizational context. Still, their studies are geared towards understanding the effect of creative climate on innovation and analyses were conducted at the organizational level. However, researchers such as Mechinda and Patterson (2011) insisted that invention or the conception of innovative ideas is an individual activity. As suggested by Yamazakia and Petchdee (2015), to understand, creative effort, it is still valid to look at the individual since the person is the source of creative ideas and effort. Thus, a theoretical gap still exists and an attempt to explore creative behaviour among pharmaceutical sector in Thailand employees is hence required. Based on the discussion above, this study attempts to fill in the existing gaps by extending the SDT framework and by examining the specific determinants of creative behaviour as identified in the literature through the use of OST and by investigating the contingent role of job involvement in enhancing motivation and hence creative behaviour.

## LITERATURE REVIEW

### Creative Behaviour

The overall employees' job performance is associated with many behavioural aspects and job performance is regarded as one of the different aspects of overall job outcomes (Chiaburu et al., 2017; Rapp, Bachrach, & Rapp, 2013). Job performance termed as the effectiveness by which employees perform acts that participate in the business technical ability directly by employing a component of its technical resources or indirectly by providing it with desired materials or services. It is widely recognized that a successful implication of technical part of a task by having the emphasis on the technical ability as necessary part of the task (Borman, 1987) and a demand of fulfilling such obligatory or in-role job necessities will be regarded as good performance (Li, Chiaburu, & Kirkman, 2017). Therefore, task performance encompasses behaviours that are job-specific. Ryan and Deci (2000) and Dizgah, Chegini, and Bisokhan (2012) identify creative behaviour as a special type of task performance. For some jobs, such as a researcher, creative behaviour is explicitly separate from other behaviours and it represents proficiency in performing work tasks of a researcher. Researchers have to constantly engage in activities that required these researchers to bring un-associated or commonly distant concepts into contiguity for the reason that formerly unrecognized association among them become clear (To, Fisher, & Ashkanasy, 2015). Many of the scholars including Jang (2018) and Shin et al. (2016) have the opinion that innovation itself has not enough justification to be

treated as creativity. The human mind in its composition is wonderfully complicated. In a moment, number of thoughts and ideas are processed in human mind and it integrates these ideas. These progressions can be named as “generative rules”. Hence, creativity takes place when there is a principal innovation in the generative rules.

Moreover, De Jong and Den Hartog (2007) have the opinion that when individuals grow up, developed as creatures of habit. Individual thinking, observation, sentiments and acts in response to a situation witness some expected and repetitive practices that are known as matrices. When, more than one repeated unrelated matrices are integrated, a pressure grown up. The process of this pressure is recognised as “bisociation”. The handling of this situation of tension and pressure results in the generation of new ideas as creative act (Zwick et al., 2017). The expression of creativity through creative act and behaviour is a complex and intriguing process that involves the creation of fundamental newness and the emergence of new meaning. In performing one’s job as a researcher, it is a requirement to be incessantly involved in these processes. To be creative is an in-role job requirements and core to a researcher’s job. Therefore, creative behaviour is a unique form of task performance. Creative behaviour can be explained through the effect of the person and the environment. Creative behaviour will also be looked at from the effectiveness of such behaviour in attaining personal and organizational goals. In this study, creative behaviour was examined as the dependent variable.

Consistent with the self-determination theory, the interaction perspective on creative behaviour is an avenue that can be used to explain creative behaviour at work. This approach championed by Woodman, Sawyer, and Griffin (1993) has shifted the conventional psychological perspective of creativity. It is irrefutable that individual components which are talent and motivation are important aspects that are required by creativity, but the settings where a person performs his or her creative work that evokes and nurture creativity is also of equal significance in ensuring a successful execution of any creative effort (Ford & Gioia, 1995). Thus, creativity is not the sole domain of a person; rather there are more into creativity that require more examination and explanation. It has been argued that among many factors, the structure of the organization, resources available for organizational activities, encouragement from organization, effective supervision and support from peers are among the factors that should be examined when exploring creativity. The interactionist approach is adopted by the majority of current researchers on creativity particularly in the area of social psychology.

### **Stressors**

Creative behaviour is stressors or the sources of stress. Work stressors referred to as factors in the environment particularly at the workplace that are potentially damaging to a person’s wellbeing (Beehr et al., 2000). Stressors have received attention from both

the practitioner and academic due to the linkage of these factors with the organizational end result and individual outcomes particularly performance (Eatough, Way, & Chang, 2012). There is a fast growing body of research that has been undertaken in estimating the effect of stressors and strains on employees at the workplace. Because of this, (Michel et al., 2010) has suggested that stressors as important socio-cultural phenomenon that have become part of an organizational context. Commonly, stressors are grouped as chronic and acute stressors. Chronic type of stressor is considered constant for an employee as long as he/she is in the occupation (Bruk-Lee & Spector, 2006). An example of chronic stressor is role ambiguity. Acute stressors, on the other hand, reflect something that is short term in nature and episodic (Dormann & Zapf, 2002).

Stress is a relationship between the individual and the situation. The psychological perspective of human being could be utilized to help explain the relationship between stressors and creative behaviour. It is considered inherent human ability to constantly monitor and consistently engage in cognitive evaluation of the situation in order to understand his or her reactions both emotionally and psychologically towards the situation (Matthews, Bulger, & Barnes-Farrell, 2010). It is argued that if the demand created by the environment or situation deemed as threatening or exceeding the person’s resources, stress will be produced (Perrewé et al., 2004). Stress therefore, is a form of reaction that will be triggered if the individual being exposed to threats or stressors.

From a stimulus perspective, work stressors are potentially harmful to the person’s psychological wellbeing (Meurs, Gallagher, & Perrewé, 2010). Thus, could have negative effect on human motivation and performance. However, LePine, Podsakoff, and LePine (2005) argued that stressors might also have positive effect on individuals in a way that these stressors can positively influence motivation and facilitate work performance. The variable stressors have received considerable attention in the study of performance. Example of stressors that have been examined by researchers (Kristin Byron et al., 2010) are conflicting demand, role overload, competition, time constraint, ambiguity in performing one’s tasks and workplace hazards. However, theoretically, knowledge regarding the effect of stressors on performance and in this context, creative behaviour will is still deficient.

Accordingly, the relationship between stressors and creativity, previous studies have found mixed and inconsistent results. Studies such as by Kris Byron and Khazanchi (2012) found positive association between stressors and creativity. Wallace et al. (2009) found that stressors and creativity is negatively related. While, LePine et al. (2005) found curvilinear relationships between stressors and creativity. Thus, the relationships between stressors and creativity still remain unclear and need further exploration. LePine et al. (2005) proposed that further examination of the effect of stressors on work performance including creative behaviour should be carried out in order to

clarify the relationships between the two variables. Accounting for the inconsistency is crucial in establishing the relationship between stress and performance at work particularly creative behaviour. Consistent with most studies in creativity, in this study, the stimulus-based definition of stress will be utilized. Researches implementing stimulus method are associated with stressors both physical and psychological. This approach will seek for how environment triggers condition that necessitate an individual adaptive response i.e. in terms of disabling or facilitating motivation and hence affect creative behaviour (Kris Byron & Khazanchi, 2012).

Distraction arousal theory postulated that stressor could decrease or has disabling effect on creative behaviour. The theory suggested that human has limited pool of cognitive resources and when they utilized some of these resources to attend to stressors, this will leave fewer cognitive resources available to attend to more important tasks such as performing the job and engage in creative behaviour. Thus, people will resort to engage in simpler cognitive strategies that undermine creativity (Webster, Beehr, & Christiansen, 2010). This explains the negative effect of stressors known as hindrance stressors to creative behaviour. Another type of stressors is considered as challenge stressors. Challenge stressors, on the other hand, are suggested to enhance work motivation and positively affect creative behaviour. Challenge stressors increase arousal, elicit the use of creative thoughts and motivate engagement in creative strategies in order to perform one's task (Zhang et al., 2014). Hence, challenge stressors are facilitating factors that could increase employee's motivation and engage in creative activities.

### **Supervisory Styles**

Leadership is an important contextual factor that determines creative behaviour of employees (Halbesleben et al., 2003). Leadership is usually assessed by examining the leaders' characteristics, skills, abilities and their effectiveness in influencing individuals outcomes such as performance specifically, creative behaviour of employees (Halbesleben et al., 2003). Jeong et al. (2017) attempted to address the interaction process between the leader and the followers or known as leader-member exchange (LMX). LMX theory suggests that the quality of the relationship between supervisor and subordinates will determine the amount of decision making; influence and autonomy reassign to and exercise by subordinates. Jaussi and Dionne (2003) considered the effect of leader role modelling on creative behaviour and more importantly, many researchers have examined the influence of various types of leader-employees relationships on employees' attitude that lead to employees' creative performance.

Analysis of previous studies have shown that the characteristics of the supervisors and the excellence of the relationships between leader and member has become the salient contextual factors often considered potent determinants of employees' creative behaviour (Jaiswal & Dhar, 2017; Mahmood, Uddin, & Fan, 2019;

Zaitouni & Ouakouak, 2018). It is proposed that employees will react positively (demonstrate creative behaviour) due to the influence exerted by the leaders on their employees through motivation, facilitation, evaluation, feedback, and reinforcement (Mahmood et al., 2019). In creativity studies, the effects of leaders especially those closely related and responsible for the success of the employees' performance has long been the subject of interests of the researchers. Yang, Liu, and Gu (2017) categorized supervisory styles into supportive and controlling or inhibiting styles. It is postulated that supervisors or leaders who demonstrate supportive style encourage the expression of creative behaviour at work (Tierney, Farmer, & Graen, 1999). Supportive style refers to style of supervision that shows concern for workers' spirits and requirements inspire them to express their concern, provide constructive feedback, and support employee growth (De Jong & Den Hartog, 2007). Supportive supervisor is another variable introduced by researchers (Herrmann & Felfe, 2014; Mittal & Dhar, 2015) to measure the same construct as supportive supervisory style. In the creative behaviour literature, the variable supportive supervisor is found to be positively related to creative behaviour of workers (Moss & Ritossa, 2007).

It is assumed that supervisors' support may have critical implications on the employees' level of work motivation, and this enhanced motivation is later transformed into creative behaviour. The types of support extended by the supervisors include bestowing inspiration and guidance, supporting and motivating employees to perform and reach their full potential and at the same time being empathetic towards them (Kim & Lee, 2011). It is suggested that through the encouragement and concern shown by supervisors, employees will develop their spirits of self-determination and individual initiative at workplace (Jyoti & Dev, 2015). These positive feelings will then boost the subordinates' motivation and interests in their work actions and later improve creative behaviour (Reeve, Deci, & Ryan, 2004). The opposite of supportive supervisory style is controlling style. Findings from previous studies consistently found that controlling or limiting style is found to have a negative influence on work motivation and hence, inhibit the creative behaviour of their employees (Tierney et al., 1999). Supervisors who demonstrate controlling supervisory style engage in close monitoring of employees' behaviour, practice authoritative decision making and do not express empathy towards their employees (Politis, 2004). Previous research findings confirmed that under controlling supervision, the level of employees' work motivation would diminish and later negatively affect the creative performance of the employees (Politis, 2005). Given the importance of the established relationships between supervisor and subordinate in the work context, supervisory styles will be selected as the predictor of creative behaviour.

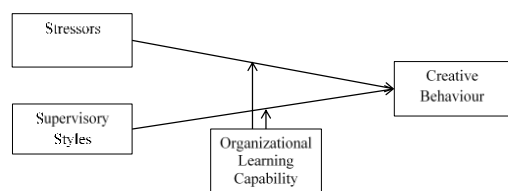
### **Organizational learning capability as moderator**

Numerous studies in learning organization show those organizations that practice organizational learning capability (OLC) improve not only teamwork but also organizational performance (Sony & Naik, 2012). Organizational learning capability is the course of obtaining the new information and integrating it with existing knowledge in order to generate new uses of the resources. Through OLC, the business able to develop and carry on its competitive edge in response to an unpredictable business environment (Weldy & Gillis, 2010) as information in the outcome of learning. In other words, knowledge is a strategic asset that assists the organization to maintain its competitive ability in the unpredictable business environment (Škerlavaj, Štemberger, & Dimovski, 2007). Rose, Kumar, and Pak (2009) pointed out, OLC encourages employees to learn and act quickly on to solve problems. This means that OLC creates an association among the business and the culture that support proactive behaviour such as collective capacity to reflect on the existing system and make the necessary changes before actual problems occur (Hashim, 2013), leading to enhanced organizational performance and survival (Rose et al, 2009). Scholars contended that OLC is a fundamental element in competitiveness, which links knowledge acquisition with organizational performance improvement (Arthur & Huntley, 2005; Bell, Mengüç, & Widing, 2010; Ho, 2008). From this perspective, OLC can be considered a process that aims to advance the growth of the business through new methods in technology, production or sales. Knowledge development encourages behavioural modification (Hung et al, 2011; Wang & Ellinger, 2011).

## RESEARCH FRAMEWORK:

The objective of this study is to investigate the relationship of stressors and supervisory styles with creative behaviour of employees of pharmaceutical organizations in Thailand with moderating role of organizational learning capability.

Figure 1: Proposed research framework



**H<sub>1</sub>:** Stressors has a significant relationship with creative behaviour of pharmaceutical firms' employees.

**H<sub>2</sub>:** Supervisory Style has a significant relationship with creative behaviour of pharmaceutical firms' employees.

**H<sub>3</sub>:** Organizational learning capability has moderating effect on the relationship of stressors and supervisory style with creative behaviour of pharmaceutical firms' employees.

## METHODOLOGY

This study intends to investigate the relationship of stressors and supervisory styles with creative behaviour among employees in the organizations. To attain the purpose of the present study, a survey will be employed as the main research design. The use of survey is appropriate because in this research, the primary aim is to gather the researchers' opinions on the factors that influence their creative behaviour while performing their work. The main data collection technique employed in the present study is questionnaire. According to Sekaran and Bougie (2003), a questionnaire is an appropriate data collection method to gather information on variables of interest when the scholar is aware of the fact that what is essential and how to evaluate the variables. Questionnaires enables researcher to collect inexpensive, rapid and well-organized method of data extraction on larger scale from a large sample. Moreover, data can be gathered in quick manner because presence of researcher is not obligatory at the time of questionnaire completing. In this study, individual-level analysis is justified because the demonstration of creative behaviour at work by individual employees specifically when they engage in performing R&D activities is observable and can be better explained at the individual level. Hence, data were collected from employee of R&D department of pharmaceutical firm in Thailand. The scale for the measurement of variable was adapted from the previous literature. The scale for creative behaviour adapted from the study of (Shalley, 1991). The scale for stressors adapted from (LePine et al., 2005) and scale for Supervisory Styles was adapted from (Sosik, Kahai, & Avolio, 1999).

## ANALYSIS AND DISCUSSION

Smart-PLS version 3.0 was used in testing the proposed theoretical model of the study. Smart-PLS is referred to as a second generation statistical tools used by researchers because it allows for concurrent analysis of multiple variables. PLS is part of regression techniques that enables the estimation of relationship that exists between measurement model (indicators) and structural model (construct) possible at the same time (W. W. Chin, Marcolin, & Newsted, 2003).

### Measurement Model Assessment:

According to Henseler and Chin (2010), the construct validity or the quality of a latent construct is assessed by evaluating "convergent validity and discriminant validity" of each construct. The construct validity of a construct is about how well the operational definition of a construct truly reveals the actual theoretical sense of that concept. There are two type of validity i.e. "convergent validity and Discriminant validity". Convergent validity could be assessed by examining the factor loadings, composite reliability (CR) and the average variance extracted (AVE). Discriminant validity refers to the extent the construct does not correlate with other measures that are different from it (Hair Jr, 2006). According to T. A. Chin et al. (2012) and Hair et

al. (2012), Fornell-Larcker criterion methods carried out to examine the variables' discriminant validity.

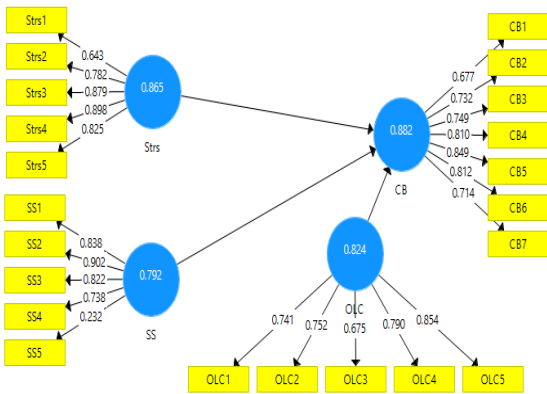


Figure 2. Measurement Model Assessment

Table 1: Values of alpha and CR:

Sr#	Constructs	alpha	CR	AVE
1	CB	0.882	0.908	0.586
2	OLC	0.824	0.875	0.585
3	SS	0.792	0.850	0.558
4	Strs	0.865	0.904	0.657

Table 2 presents that the "square root of AVE" for the investigation of Validity of constructs.

Table 2: Discriminant Validity

Sr #	Construc ts	1	3	4
1	CB	0.766		
2	OLC	0.653	0.765	
3	SS	0.528	0.436	0.747
4	Strs	0.611	0.707	0.368

**Structural Model:**

For hypotheses testing, the path analysis was used to verify all hypotheses of the study. The results of structure model presents in Table 3 and Table 4.

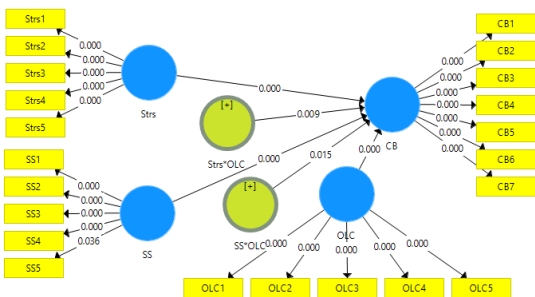


Figure 3. Structural Model Assessment

Table 3. Structural Model Assessment (Direct Results)

	(β)	(STDEV )	T Statistics	P Values
Strs -> CB	-0.298	0.080	3.742	0.000
SS -> CB	0.239	0.058	4.083	0.000

In this study, as theorized by the underpinning theory of self-determination, Stressors and supervisory styles were hypothesized to affect creative behaviour (dependent variable) of pharmaceutical firms' employees in Thailand. In addition, this study attempts to test the introduction of a moderator that is organizational culture capability that could possibly enhance the relationships between stressor and supervisory styles and creative behaviour. The result obtained from the bootstrapping analysis presented in Table 4.3 showed that Stressor has significant relationship with creative behaviour of Thai pharmaceutical firms' employees. Findings show that it has negative relationship with creative behaviour of Thai pharmaceutical firms' employees. The t-value 3.742 exemplified that H1 is accepted and it is significant at 1% significance level. Study also found that supervisory style has positive and influence on creative behaviour of Thai pharmaceutical firms' employees. The t-value 4.083 shows that H2 is also accepted and significant on 1% level of significance. The finding in this current study is consistent with findings of the studies of Wincent and Örtqvist (2011) and Çekmecelioglu and Günsel (2011).

Table 4. Structural Model Assessment (Moderation)

	(β)	(STDEV V)	T Statistics	P Values
Strs*OLC -> CB	0.123	0.055	2.236	0.009
SS*OLC -> CB	0.119	0.048	2.450	0.015

This study also found the moderating role of organizational learning capability on the relationship of Stressors and supervisory styles with creative behaviour of pharmaceutical firms' employees in Thailand. Results show that organizational learning capability significantly affects the association of stressors with creative behaviour and change the negative relationship of stressors with creative behaviour into positive. Organizational learning capability also moderates the association of supervisory styles with creative behaviour. These results illustrated that H3 is accepted.

**CONCLUSION**

Creative behaviour of employees is the driving force behind the success of most businesses. Creativity and innovation are often the reason that businesses flourish in today's world. Given the many benefits of creativity at the workplace, organizations ought to be thinking of ways to nurture creativity at the workplace and at the same time foster and harness creativity among

employees. Organizations should constantly struggle to create a workplace that is unconventional with active and engaged employees and encourage the collaboration of creative minds and supportive work environment since this has the ability to push creative ideas into reality. This study investigates the relationship of stressors and supervisory styles with creative behaviour of pharmaceutical firms' employees in Thailand with moderating role of organizational learning capability. Findings of the statistical analysis illustrated that stressors and supervisory styles with creative behaviour of pharmaceutical firms' employees. Moreover, organizational learning also has significant moderating effect on the relationship of stressors and supervisory styles with creative behaviour. This study attempts to offer an integrated framework to explain creative behaviour and enrich the existing literature. The findings of the present study offer guidelines for practitioners, particularly managers and business owners of pharmaceutical firms who are currently involved in R and D activities for taking appropriate measures to encourage and facilitate the demonstration of creative behaviour at work.

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