

Purchasing Status and Strategic Thinking Climate in the Jordanian Manufacturing Sector

Abdelsalam Issa Al-Rashid¹, Loay M. Salhieh², Jamal D. Abu-Doleh^{3*}, Luay Jum⁴

¹Ph'd candidate at College of Business, Mutah University, Alkarak - Jordan Po.Box: 61710.

²Graduate School of Business Administration (GSBA), German Jordanian University, P.O Box 35247 Amman 11180 Jordan.

³Department of Business administration, Faculty of Economics and Administrative Sciences, Yarmouk University, Irbid, Jordan.

⁴Department of Logistic Sciences, School of Management and Logistic Sciences (SMLS), German Jordanian University, P.O Box 35247 Amman 11180 Jordan.

Received: 23 Aug 2020, Revised: 19 Sep 2020, Accepted: 15 Oct. 2020.

Published online: 1 Dec 2020.

Abstract: The aim of this study is to present an examination of the relationship between strategic purchasing practices and purchasing involvement at a strategic level in manufacturing sector, with strategic thinking climate as a moderating variable. Based on the collected sample, the authors explored the proposed hypotheses by applying the hierarchical multiple regression analysis to explore moderation effect of strategic thinking climate. The results suggest that purchasing working in organizations described as having low strategic thinking climate would not elevate the status or strategic involvement of the purchasing function in business strategy formulation even though purchasing practices are strategic in nature. While organizations who have high level of strategic thinking climate would elevate the status or strategic involvement of the purchasing function given its practices are strategic in nature. This study represents a first attempt at a type of climate that would affect the status and involvement of purchasing in the strategy formulation process.

Keywords: Strategic Purchasing Practices, Strategic Purchasing involvement, Strategic thinking Climate, Purchasing Function, Purchasing Status, Jordan.

1 Introduction

The status of purchasing function evolved from an administrative function to a function that contributes to the business strategy and value-added that enhances the competitive position of the organization [1, 2, 3, 4, 5]. Furthermore, [6] define status as “how purchasing is viewed by top management, and by other functions, which acts as a precursor for many of the characteristics of purchasing that the literature considers being strategic”. Where purchasing considered strategic, it is more likely to be contributing in all stages of the business strategy formulation process. However, [7] established that individuals contributing in the business strategy formulation would steadily effect the strategy. Accordingly, failure to take account of the contributions of the purchasing function or individuals in the strategic exchange of ideas will place the firm at a competitive disadvantage relative to its rivals, which have accepted the positive benefits derived from active purchasing membership [8]. However, the purchasing function must establish to top management its capability to positively impact the bottom line of the organization to be involved in the strategic interchange of the organization. Accordingly, the purchasing set of decisions must be enclosed, and guided by practices considered strategic [9, 10, 11, 12, 13, 14]. The term strategic in this context refers to purchasing practices that may inspire the intra-organizational status of the function and are likely to contribute to the competitive position of the firm [15]. Nevertheless, the adoption of strategic purchasing practices is an ongoing process, and the level of strategic purchasing practices anticipated vary in nature and emphasis based on how the purchasing function observed as strategic by top management, and other functions [6]. However, key to that process of who is involved in the process of formulating business strategy is the ability of its contributors to think strategically [17, 7]. Furthermore, [18] declares that strategic thinking is about thoroughness and holistic thinking that aims to understand how the components interact to form the whole by looking at parts and relationships among the effects they have on one another in the past, present, and anticipated future. Consequently, strategic thinking must be diffused throughout the organizational and create a

* Corresponding author e-mail: jdoleh@yu.edu.jo

cultural climate of strategic thinking [19] at the organizational level [20, 21]. However, what is missing from the literature is a thorough understanding of the influence that organizational strategic thinking climate may have on the relationship between strategic purchasing practices and purchasing strategic status and involvement in the strategic interchange of the organization.

This study brings non-traditional lens from strategy field into purchasing setting to provide a potentially interesting dimension to our understanding of strategic purchasing and its relationship with broader organizational issues. Toward this end, this study adds an understanding of the type of interactions and relationships among investigated three constructs: organization strategic thinking climate (OSTC), strategic purchasing practices (SPP), and purchasing strategic involvement (PSI). Consequently, the aim of this study is to present an examination of the reciprocal relationship between SPP and PSI in Jordan manufacturing sector, with the OSTC as a moderating variable. Based on the results of this examination, the current study objective is to make four important contributions toward the SPP- PSI literature. First, it contributes toward redefining the adoption of strategic purchasing practices and the status and involvement of purchasing function in the development of business strategies. Secondly, the study sheds more light on the how status and involvement of purchasing function (PSI) affects the continuous adoption of strategic purchasing practices (SPP) through a multidimensional analysis of the constructs involved in this study. This stretched further by integrating the moderating role of strategic thinking climate, which contributes toward the relationships between SPP and PSI. Thirdly, the study contributes to the literature by providing a methodological framework for determining the bilateral relationship between SPP and PSI. Although the applied multivariate techniques well known in literature, the use of structural equation modeling (SEM) in a two-way environment is quite original [22]. Fourth, the study contributes toward advancing the theoretical base of the field by exposing the linkages within the SPP-PSI connection and transforming them into managerial decisions.

The rest of the paper is organized as follows; the second section is devoted to the research model and hypotheses. The research methodology discussed in section three. Hypotheses test results presented in section four. Finally, conclusions presented in section five.

2 Hypotheses development and proposed model

Early studies stressed the need for an important role for purchasing in the formulation and implementation of business strategy [23]. Furthermore, [24] had already emphasized that the purchasing function had to be a full participant in business strategy formulation and implementation to attain a strategic-fit between purchasing objectives and business goals. The importance of the purchasing function, its practices and its strategic role within the company, have been some of the themes in which academics have been working on during the last decades [25, 26, 13, 27]. Accordingly, this evolving role has led to the development of a series of strategic purchasing practices that encourage the intra-organizational status of the function and are likely to contribute to the competitive position of the firm [15, 11, 12, 14].

2.1 Strategic Purchasing Practices

This study defines strategic purchasing practices as these practices that are crucial as an intermediate step to achieve higher status and involvement in the organization strategy dialogue, and accepted as a key business driver by top management [28, 3, 29, 26, 14]. Concurrently, firms started to add more value-adding practices and activities to their purchasing plan [30, 31] such as value added to the organization, to the specifier (i.e. internal customer), to the procuring process and to the supplier [32]. Specifically, the value-adding activities that relate to strategy dialogue include supplier coordination, supplier development, supplier market research, cost analysis, sourcing strategy formulation, benchmarking, make or buy decision, and supplier capability analysis [33]. Accordingly, the purchasing function adopted these value-adding activities in order to promote their role, status, and involvement in the strategic formulation process [34, 35, 31, 25, 26, 27, 11, 12, 13, 36]. Nevertheless, this elevated role, status, and involvement of purchasing and type of practices adopted is likely to be an ongoing process, based on how the purchasing function viewed as strategic [37, 16] by top management, and other functions. Based on the former discussion, this study proposes its first hypothesis, which relates to the relationship between Strategic Purchasing Practices (SPP) and Strategic Purchasing Involvement (SPI). This relationship theoretically supported in the literature by many researchers who indicates that purchasing must develop strategic purchasing practices before the function can strategically involve in the strategy formulation dialogue [28, 3, 29, 14].

H1: Strategic Purchasing Practices (SPP) is positively correlated with Strategic Purchasing Involvement (SPI).

However, [7] have stressed that the content of organization strategy influenced by who formulates it or participate in the strategic dialogue process. Accordingly, key to that process of who is involved in the process of developing organizational strategy is the ability of its participants to think strategically [17, 7].

2.2 Organization Strategic Thinking Climate

It has been argued by [38] that climates as “incumbents’ perceptions of the events, practices, and the kinds of behaviors that get rewarded, supported and are expected”, and probably subject to manipulation by top management [39]. Climate involves employees’ perceptions of what the organization is like in terms of practices, policies, procedures, routines, and rewards [40]. Furthermore, [41] proposed that climate conceptualized, studied as a specific construct that has a particular referent or strategic focus, indicative of the organization’s goals. Accordingly, climate conceived of as a “climate for” something (e.g. for: service, safety, sexual harassment, diversity, excellence, empowerment), and this notion has gained wide acceptance from researchers [42, 43, 44, 45, 46]. However, when these climate perceptions shared across an organization’s employees, unit or organizational level, climate said to emerge [47]. Based on the aforementioned, this study define “organization strategic thinking climate” as a shared perception of endorsed developed processes that encourage, develop, and nurture strategic thinking in the organization. Furthermore, this study argues that climates reflect employees’ perceptions of the policies, practices, and procedures [48, 38] that are expected, supported, and rewarded concerning involvement in the strategy dialogue process. Therefore, participants in the strategy dialogue process must view and perceive purchasing as a strategic function in order to be involved in the strategic dialogue of the firm [17, 25]. However, top management as decision makers of who is involved in the strategy dialogue process must think strategically [17] to perceive various functions as strategic contributors to the process and allow their participation. Accordingly, this study introduces the concept of organizational strategic thinking climate as significant determinants of the level and extent of involvement of purchasing function in the strategy formulation process [49, 50, 11, 12, 14]. Based on the aforementioned argument, the second proposed research hypothesis relates to analyzing the extent to which a presence of strategic thinking climate at the organizational level does affect this elevated role and involvement for purchasing in the strategy dialogue. Therefore, this study posits the following hypothesis:

H2: Organizational strategic thinking climate is positively correlated with Strategic Purchasing Involvement (SPI).

However, researchers from psychology [51, 52, 53] have studied climate as a moderator that can compensate for lower levels of some organizational attributes (resource allocation and collective action) or that can enhance the effectiveness of organizational attributes [54]. Furthermore and based on the results of the hypothesis 2 and in line with previous research, this study argues that the presence of strategic thinking climate at the organization level (OSTC) enable stakeholders understand the connections across functions and departments [55]. Therefore, this study investigates the moderating effect of this climate (if exist) on the relationship between strategic purchasing practices and strategic purchasing involvement. Consequently, this study posits the following hypothesis:

H3. Organizational Strategic Thinking Climate moderates the Relationship between Strategic Purchasing Practices, and Strategic Purchasing Involvement.

In addition to the previous proposed three hypotheses, this study builds its fourth hypothesis on the scholarly notion that the status or the degree of involvement in the strategic dialogue of the purchasing function is a defining precursor to strategic purchasing practices [56, 33] as discussed in the next section.

2.3 Strategic Purchasing Involvement

Strategic involvement focuses on viewing the role of the purchasing function and its importance within the firm in order to take part in the strategy dialogue process of the firm [57, 6, 25]. In other words, the purchasing function viewed as an important participant in the formulation process because it can deliver ideas and knowledge to the process [58, 6, 59]. It has become clear in recent years that the weight of purchasing in the strategic dialogue process is becoming increasingly important and that it has positive effects on the performance of the purchasing function and consequently on business performance [11, 12, 13]. Furthermore, purchasing’s status acts as a antecedent for many of the characteristics of purchasing that the literature considers being “strategic”, and as a result resources are devoted in terms of time, personnel and finances toward improving the capability of the function [50], and adopt strategic practices [33]. Accordingly, this study investigates the bilateral relationship between strategic purchasing practices and strategic purchasing involvement. Therefore, this study posits the following hypothesis:

H4 Strategic purchasing practices have a positive effect on strategic purchasing involvement

Based on the aforementioned discussion and arguments, this study proposes a theoretical framework as shown in Figure 1 to investigate the nature of the relationships among three constructs. Each hypothesis represents a relationship between the factors in the proposed framework shown in Figure 1.

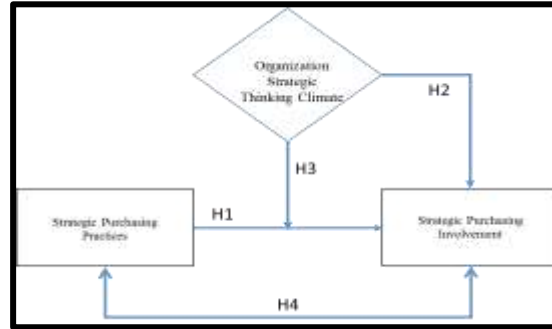


Fig. 1: Proposed Theoretical Framework.

3 Research Methodology

This section presents the methodology used to conduct the research. This empirical study based on data gathered from purchasing managers and supervisors, head of departments, and top management positions representing manufacturing companies located in Jordan during the year 2019. A survey methodology used to collect data pertaining to the research hypotheses. The survey questionnaire personally administered to each firm. The unit of analysis for this study was the firm.

a. Model Constructs measurements

Strategic Purchasing Practices

This study classified strategic practices into four categories: control and monitoring practices (60), supplier related practices [61, 62], logistical related practices [12], and purchasing strategy related practices [50, 62, 36] as shown in Table 1. Respondents to this section of the questionnaire were managers and supervisors level in the purchasing department in every firm in the sample. Each item was measured using a five-point Likert scale, with the use of practices anchored at “not at all” (= 1) and “a very great extent” (= 5).

Table 1: Strategic purchasing practices (Sub-dimensions and Items).

Dimension	Item	Variable code
Control & monitoring practices	Formal evaluation of suppliers' capacities and performance	CMP1
	Quality certifications required of suppliers	CMP2
	Quality testing of purchased materials	CMP3
	Monitoring and controlling the key suppliers' operation	CMP4
	Purchasing involved in all make or buy decisions	CMP5
	Purchasing involved in future demand planning	CMP6
	Purchasing keep track of technology trends related to the business	CMP7
	Supply market analysis are conducted and reviewed periodically	CMP8
Supplier related practices	Key suppliers are involved in improving product design	SRP1
	Supplier involvement in the design and development of new products	SRP2
	Suppliers help solve problems of the	SRP3



	company's production processes	
	Purchasing knows the technology trends of their strategic suppliers	SRP4
	Supplier selection process carried out systematically according to selection criteria	SRP5
	There is a supplier evaluation process in place for almost all purchased volume	SRP6
	Results of supplier evaluation is continuously communicated to suppliers	SRP7
	There is a systematic procedure for supplier development in place.	SRP8
	Purchasing is part of regular visits to suppliers for strategic purchased items	SRP9
	Purchasing is part of specification review	SRP10
Logistical related Practices	Coordination of manufacturing plans and production lines with suppliers	LRP1
	Adaptation of suppliers' delivery frequencies to our requirements	LRP2
	Coordination of transportation and storage capacity with suppliers	LRP3
	Coordination in the use of containers and equipment with suppliers	LRP4
	Suppliers involved in the design of the company's logistics system	LRP5
Purchasing strategy related practices	The purchasing function has a formally written long-range plan (e.g. 5-10 year plan)	PSRP1
	Purchasing's long-range plan is reviewed and adjusted to match changes in the company's strategic plans on a regular basis	PSRP2
	Comprehensive purchasing strategies have been developed to support the company's strategies	PSRP3
	Purchasing's focus is on longer term issues that involve risk and uncertainty	PSRP4
	Purchasing managers know the company strategy	PSRP5
	Purchasing policies are shared with our suppliers and linked to company policies	PSRP6
	Category purchasing strategies are established and linked to company strategy and reviewed periodically	PSRP7
	Purchasing interfaces continuously with other functions in the organization	PSRP8

Strategic Purchasing Involvement

This study will adopt items from previous research [57, 59, 63, 64] to constitute the construct as shown in Table 2. This section of the survey distributed to top managers and functional managers (not purchasing) in every firm in the sample.

Each item was measured using a five-point Likert scale, with the use of involvement anchored at “not at all” (= 1) and “a very great extent” (= 5).

Table 2: Strategic Purchasing Involvement Construct.

Item	Variable Code
A yearly budget is allocated to improve the purchasing department	SPI1
Purchasing's views are regularly required in the strategy formulation process	SPI2
Purchasing is recognized as an equal partner with other functions	SPI3
Purchasing actively participates in organization-wide process improvement	SPI4
There is a precise measurement to help assess the progress of purchasing performance	SPI5
Purchasing regularly attends strategy meetings	SPI6
Purchasing staff have the necessary skills to monitor and interpret changes in the supplier market/product base	SPI7
Purchasing staff have the technical capabilities to help our suppliers improve their processes and products	SPI8
Purchasing staff have the necessary skills to improve the firm's total cost of doing business with the firm's suppliers	SPI9
Findings of the purchasing function progress discussed for remedial action.	SPI10

Organization Strategic Thinking Climate

Climate conceptualized both at the individual level [65] and at the group or unit level. At the group or unit level, climate is the sharedness of member perceptions commonly operationalized under a specific leader, supervisor, group, or other organizational unit [66]. The focus of the present study is on group- or unit-level climates, but we used the term “organizational climate” to describe our group-level foci of climates [67]. Furthermore, aggregating data from the individual level to the group level is now a common and growing aspect of applied psychological research and practice [68]. Accordingly, this study adapts a notional assessment questionnaire developed by several scholars [69, 70, 40] to measure the organizational strategic thinking climate construct. This assessment questionnaire consists of seven dimensions, but this study will exclude the cultural dimension based on the argument that, organizational practices, management practices, policies, and procedures (hereafter referred to generically as “practices”) adopted in an organization reflect cultural influences [71]. Therefore, culture can lead to a set of relevant processes (practices) that then perceived by organizational members as climate [72]. This section of the survey administered to functional managers and supervisors in every firm in the sample. Each item was measured using a five-point Likert scale, with the use of “describe” anchored at “not at all” (= 1) and “a very great extent” (= 5) as shown in Table 3.

Table 3: Organization Strategic Thinking Climate (Sub-dimensions and Items).

Dimension	Item	Variable Code
Structure Processes	Our structure enables speedy, flexible responses to changing needs	OSTCS1
	Our structure gives authority to value creating people	OSTCS2
	Our structure transfers new ideas from the field to senior leaders quickly	OSTCS3
	Our structure enables quick decisions	OSTCS4
Leadership Behavior Processes	My manager encourages different opinions	OSTCL1
	My manager frequently seeks my input on changes	OSTCL2
	My leader understands that mistakes will occur in trying new things	OSTCL3

	My leader rewards constructive inquiry	OSTCL4
	My leader likes to learn and actively listens to my ideas	OSTCL5
Employee Engagement Processes	Most people I work with feel that the measurement and reward system is differentiating and fair	OSTCE1
	You can advance here and be all you can be	OSTCE2
	My leader seeks my feedback on how He/she performs as a leader	OSTCE3
Measurement Processes	I am measured on learning and constant improvement	OSTCM1
	I am asked to give 360-degree reviews of my leaders	OSTCM2
	I am measured as to whether I create cost savings or productivity ideas	OSTCM3
	I am measured as to whether I create new, creative ideas	OSTCM4
Ideation Processes	I am encouraged to submit ideas for growth and improvement	OSTCI1
	People who submit ideas for improvement are thanked	OSTCI2
	We have a process to develop ideas	OSTCI3
	Everyone is expected to think innovatively	OSTCI4
	I am encouraged to spend some of my work time on thinking about new ideas	OSTCI5
	New ideas can be tried without a long, complicated process	OSTCI6
	My direct Leader have the authority to try new ideas	OSTCI7
Training Processes	I have received training on strategic thinking	OSTCT1
	I have received training conducting strategic conversations	OSTCT2
	I have received training on strategic decision-making	OSTCT3

b. *Sample characteristics*

The proposed hypotheses tested through a survey that collected information about a firm's strategic purchasing practices, strategic purchasing involvement, and organization strategic thinking climate. Furthermore, this study is a cross-sectional study performed once, and it represents a snapshot of one point in time [73]. Accordingly, the questionnaire distributed to all forty-six industrial manufacturing companies registered in the first and second market of Amman Stock Exchange, their listed shares ranged from one to eighty million, and the questionnaire administered personally. The firms represent a wide variety of manufacturing industries; they are Pharmaceutical and Medical Industries; chemical; Food and Beverages; Tobacco and Cigarettes; Mining and Extraction Industries; Engineering and Construction; Electrical Industries; and Textiles Leathers and Clothings. Based on the usable responses (total of 426 questionnaires); the majority of respondents were the purchasing manager and supervisor (31.0 percent), the head of department (48.0 percent), and top management positions (21.0 percent).

c. *Construct Validity and Reliability*

The measured constructs operationalized as shown in Tables 1, 2, and 3, and perceptual with a five-point Likert scale. The first step is to ensure that the test items do actually measure the proposed construct (validity) and maintain consistency of measured results (reliability) [73]. Accordingly, exploratory factor analysis (EFA) conducted to examine construct validity on each construct separately, and items with a factor loading of at least 0.45 were retained [74].

Table 4 exhibits that a number of items that were recommended to be omitted. The table shows that factor loadings for all retained constructs ranged from 0.51 to 0.89. Moreover, all constructs explain more than 50 percent of total variance. Furthermore, all the KMO values are greater than 0.50 as recommended by [75], indicating patterns of correlations are relatively compact, and thus, factor analysis is reliable. In addition, The Bartlett's test is significant at $\alpha = 0.05$ for all the constructs, implying the variables are highly correlated to provide a reasonable basis for factor analysis [76]. Consequently, the constructs used are valid and eligible. In addition, multiple-question loadings for each factor in excess of 0.50 demonstrate convergent validity [77], and discriminant validity supported, since none of the questions in

the factor analyses has loadings in excess of 0.40 on more than one factor. Furthermore, construct reliability is assessed by using Cronbach's α , and Table 4 shows that the values range from 0.68 to 0.88, which is adequate [78]. Thus, construct validity and internal consistency are satisfactory.

3.4 Descriptive Statistics

The descriptive statistics depicted in Table 4 that means (averages) of strategic purchasing practices' sub-constructs ranged from 2.562 to 3.166, with the standard deviation ranging between 0.445 and 0.685. This indicates that at a certain level, the purchasing function in the investigated manufacturers have been moderately practicing strategic related practices. In terms of strategic purchasing involvement, the mean value was 3.278, with standard deviation of 0.756. This implies moderate to high involvement of purchasing function. Similarly, the mean values of strategic thinking climate measures also indicated moderate to high climate. The mean values of the sub-constructs ranged between 2.458 and 3.664, with the standard deviation ranging between 0.456 and 1.023.

Table 4: Validity, reliability, and descriptive statistics of instrument.

Construct	No. of items ^a	Deleted items ^b	Factor loading for retained items	KMO	Eigenvalue	% variance	α^c	Mean	SD
Strategic purchasing practices								2.885	
Control & monitoring practices	8	2	0.85, 0.79, 0.72, 0.69, 0.62, 0.59	0.89	2.88	55.12	0.71	2.562	0.445
Supplier related practices	10	1, 10	0.88, 0.82, 0.78, 0.67, 0.65, 0.62, 0.55, 0.52	0.76	1.78	68.13	0.74	2.901	0.521
Logistical related Practices	5	1	0.74, 0.72, 0.66, 0.51	0.78	2.11	61.67	0.69	2.911	0.345
Purchasing strategy related practices	8	1, 5	0.83, 0.81, 0.77, 0.73, 0.69, 0.66,	0.85	1.99	53.78	0.88	3.166	0.685
Strategic Purchasing Involvement	10	6, 8	0.89, 0.86, 0.81, 0.77, 0.74, 0.71, 0.61, 0.56	0.83	2.19	65.78	0.76	3.278	0.756
Organization Strategic Thinking Climate								3.110	
Structure Processes	4	4	0.69, 0.63, 0.59	0.74	1.56	52.55	0.68	3.451	0.456
Leadership Behavior Processes	5	None	0.81, 0.74, 0.71, 0.66, 0.53	0.76	1.36	51.45	0.78	2.981	0.784
Employee Engagement Processes	3	None	0.86, 0.72, 0.65	0.82	2.05	63.32	0.81	3.121	0.947
Measurement Processes	4	None	0.82, 0.77, 0.61, 0.52	0.81	2.15	56.44	0.74	2.458	0.886

Ideation Processes	7	2	0.77, 0.72, 0.65, 0.61, 0.57	0.69	1.51	53.76	0.85	3.664	1.023
Training Processes	3	None	0.88, 0.82, 0.65	0.80	1.98	59.21	0.71	2.987	0.772
Notes: ^a Number of items before deletion; ^b Sequence number of questionnaire (Tables 1, 2, 3); ^c Cronbach's α after deleting the items in factor analysis									

4 Hypotheses Test Results

Table 5 shows the Pearson product–moment correlations among strategic purchasing practice, strategic purchasing involvement and strategic thinking climate. As was expected, strategic purchasing practices was significantly positively correlated with strategic involvement of the purchasing function ($r = 0.321$), that is to say, the more adoption of strategic practices by the purchasing function, the more the involvement of the purchasing function in the business strategy formulation process. The study also detected a significant positive correlation between organization strategic thinking climate and strategic involvement of the purchasing function ($r = 0.532$). This means the presence of high level of organization strategic thinking climate would help to elevate the status and involvement of purchasing function in the strategy formulation process. Accordingly, H1 and H2 confirmed. However, the study was unable to detect significant correlation between strategic purchasing practices and organization strategic thinking climate. This result is not a surprise since the development of a strategic thinking climate affected by the culture of the organization and strategic thinking practices adopted [79]. In fact, this study postulate that strategic purchasing practices and organization strategic thinking climate could be designated as independent variables along each other for predicting the outcome of interest (strategic purchasing involvement). This suggests that strategic purchasing practices and organization strategic thinking climate naturally cannot strongly related to each other, otherwise the problem of multicollinearity would have jeopardized the interpretation of the results. To test hypothesis three (H3), that organization strategic thinking climate moderates the relationship between strategic purchasing practice and strategic purchasing involvement, a moderation regression analysis conducted [80, 81]. The hierarchical multiple regression analysis allows to evaluate the incremental contribution of predictors after controlling other variables, and such incremental contribution assessed through the incremental variance in R^2 of the model [82]. First, the study inserted the block of control variable (type of industry), which aims to measure the extent of influence that such a control variable might have on the outcome variable (strategic purchasing involvement), and the regression was run. Second, the study inserted the block of strategic purchasing practice into the first block, and the regression run for the dependent variable. In addition, to avoid multicollinearity issue, this research mean centered the variables before creating the interaction terms, as multicollinearity issue could be a serious problem in regression models [83]. Accordingly, the third step tested the contingency outcome, the interaction effect (strategic purchasing practices \times organization strategic thinking climate) introduced and the regression run for the dependent variable as shown in Table 6, with organization strategic thinking climate as the moderator variable. As a result, three regression models (Models 1, 2 and 3) generated. The Durbin–Watson statistic ($DW = 2.012$) was in the acceptable range meaning that no autocorrelation was detected in the regression models. Precisely, the control variable in Model 1 explained 1.3 per cent of the variance in the outcome variable (strategic purchasing involvement). However, when strategic purchasing practices and organization strategic thinking climate were included as predictors in Model 2, they explained an additional of 28.2 per cent of the variance in the outcome variable. In other words, even controlling for type of manufacturing, strategic purchasing practices ($\beta = 0.213$, $p < 0.05$) and organization strategic thinking climate ($\beta = 0.433$, $p < 0.05$) were still able to generate significant main effect on strategic purchasing involvement. Last but most importantly, Model 3 detected a significant interaction effect ($\beta = 0.653$, $p < 0.05$) with the interaction term explaining an additional 17.2 per cent of the variance in the outcome variable. All included, this shows that the interaction term was another significant predictor of strategic purchasing involvement beyond the main effects. A significant increment of Adjusted R^2 [84] in step three indicates the presence of moderation effects [85, 86]. Accordingly, a schematic representation then used to illustrate the moderating effect of organization strategic thinking climate between strategic purchasing practices and strategic purchasing involvement as shown in Figure 2. To construct this schematic representation, the original sample spilt into two exhaustive subgroups based on respondents' evaluation of their organization's strategic thinking climate, and labeled low and high. The former pertained to those respondents who viewed relatively low about their organization's strategic thinking climate, while the latter included those who held

relatively high perceptions about their organization's strategic thinking climate. As graphically illustrated in Figure 2, a positive relationship between strategic purchasing practice and strategic purchasing involvement noted across the two subgroups with varying strength of association. However, the subgroup labeled as "perceived high level of organization strategic thinking climate" had exhibited a significant positive correlation ($r = 0.46$, $p < 0.05$, $n = 19$) between strategic purchasing practice and strategic purchasing involvement, whereas such correlation became weak for the "perceived low level of organization strategic thinking climate" group ($r = 0.19$, $p > 0.05$, $n = 27$). Based on these results, it could be said that purchasing working in organizations described as having low strategic thinking climate would not elevate the status or strategic involvement of the purchasing function in business strategy formulation even though purchasing practices are strategic in nature. While organizations who have high level of strategic thinking climate would elevate the status or strategic involvement of the purchasing function given its practices are strategic in nature. This is not surprising because organizations who encourage strategic thinking would encourage and involve all functions in strategy formulation. Accordingly, hypothesis 3 (H3) is supported.

Table 5: Correlation matrix of the constructs.

Construct	Strategic purchasing practice	Strategic purchasing involvement	Organization strategic thinking climate
Strategic purchasing practice	1	0.321**	0.012
Strategic purchasing involvement		1	0.532**
Organization strategic thinking climate			1

Note: **Correlation is significant at the 0.01 level (two-tailed)

Table 6: Results of hierarchical moderated regression analysis.

Predictor variables	Model 1: Standardized coefficients	Model 2: Standardized coefficients	Model 3: Standardized coefficients
Type of Industry	0.052	0.054	0.053
Purchasing strategic practice		0.213**	0.214**
Organization strategic thinking climate		0.433**	0.435**
Centered-purchasing-strategic-practice × centered-organization strategic-thinking-climate			0.653**
R ²	0.013	0.295	0.467
R ² change	0.013	0.282	0.172

Note: **p < 0.05

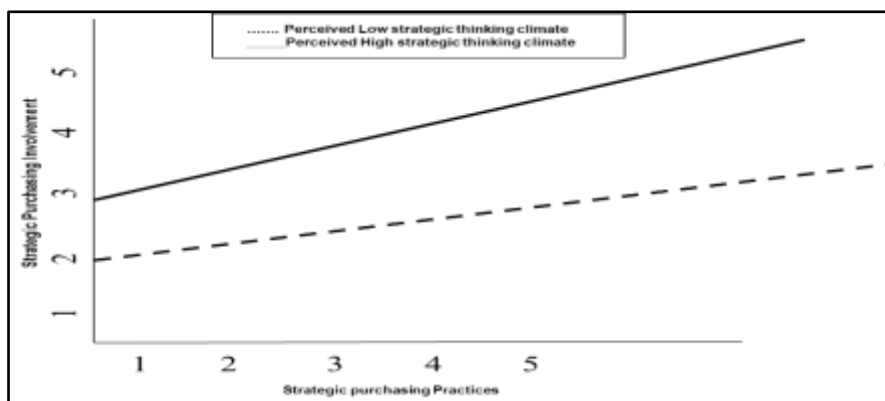


Fig.2: The moderating effect of organization strategic thinking climate.

5 Conclusions, Implications, Limitations, Future research

This study furthers our understanding of the strategic purchasing practices and strategic purchasing involvement relationship by identifying organization strategic thinking climate as a variable that can alter the strength of this relationship. Although there is already a voluminous amount of research examining the link between strategic practices and strategic involvement, very few studies have attempted to find out what factors regulate the strength of this relationship specifically in the purchasing function. Similarly, climate studies are important in their own right. In this regard, some of these studies used climate to predict an outcome of interest. Others have examined its role in between various predictor–criterion relationships. However, to the author knowledge no study have critically examined organization strategic thinking climate’s influence in the strategic purchasing practices and strategic purchasing involvement relationship. This study thus seeks to fill this gap in the literature. Furthermore, this study has identified a significant positive correlation between organization strategic thinking climate and strategic purchasing involvement. This means a positive climate is necessary to elevate the status and involvement of purchasing in the strategy formulation process. On the other hand, and perhaps more importantly, this study has contributed to the research literature by identifying organization strategic thinking climate as a moderator affecting strategic purchasing involvement. Precisely, the study shows that a high level of such a climate significantly strengthen the relationship between strategic purchasing practices and strategic purchasing involvement. In other words, a high level of such a climate serves to support or encourage the purchasing function to participate in the strategy formulation process. In addition, purchasing managers can use the study findings to argue a barrier to or low status in the organization even though their activities are strategic in nature. Our empirical results highlight that everything starts with top management’s recognition of the strategic role of purchasing, which influenced by the type of thinking that is diffused within the organization. In other words, the right attitude has to precede purchasing’s actual involvement in the strategy formulation process.

Evidently, the implications discussed in this research should be interpreted in light of several limitations inherent in this study. First, the cross-sectional nature of the data prevents us from making strong statements about causality. Future studies could employ longitudinal designs, which also help uncover the dynamic relationship between practices and involvement, and vice versa. In other word, an empirical work should be conducted concerning analyzing the extent to which this elevated role and involvement for purchasing in the development and implementation of business strategy have an influence on strategic purchasing practice adopted by the function. Second, though the current study has explored the links and found some evidence in the manufacturing industry, it should be considered largely as exploratory in nature; these findings may require additional confirmation in future studies. This study was restricted to 46 companies, which listed in Amman Stock Exchange, hence the external validity needs to be examined, only then can the results of this study be generalized to other firms in other countries.

References

- [1] Ericson, C. & Rycraft, S. (2011). The evolution of supply management. [Online] A.T. Kearney, Inc. Available at: www.atkearney.com/images/global/pdf/SCM1109_SupplyMgmt.pdf [Accessed 15 February 2020].

- [2] Gelderman, C.J., Van Weele, A.J., 2005. Purchasing portfolio models: a critique and update. *Journal of Supply Chain Management* 41 (3), 19–28.
- [3] Paulraj, A., Chen, I.J. & Flynn, J. (2006). Levels of strategic purchasing: impact on supply integration and performance. *Journal of Purchasing & Supply Management*. Vol. 12 No. 3, pp. 107-122.
- [4] Pollice, F. & Fleury, A., 2010. The Link between Purchasing and Supply Management maturity models and the financial performance of international firms. In *Innovation in global manufacturing - new models for sustainable value capture*. Cambridge.
- [5] Pressey, A.D., Winklhofer, H.M. & Tzokas, N.X. (2009). Purchasing practices in small-to medium-sized enterprises: an examination of strategic purchasing adoption, supplier evaluation and supplier capabilities. *Journal of Purchasing & Supply Management*. Vol. 15 No. 4, pp. 214-226.
- [6] Carr, A.S. & Smeltzer, L.R. (1997). An empirically based operational definition of strategic purchasing'. *European Journal of Purchasing and Supply Management*. Vol. 3 No. 4, pp. 199-207.
- [7] Van den Steen, E. J. (2018). Strategy and the Strategist: How it Matters Who Develops the Strategy. *Management Science*. Vol. 64, No. 10, pp. 4533–4551.
- [8] Pearson, J. N. (1991). Essential elements of strategic planning. *NAPM Insights*. Vol. 2 No. 5, 1991, p. 6.
- [9] Field, J.M. & Meile, L.C. (2008). Supplier relations and supply chain performance in financial services processes. *International Journal of Operations & Production Management*. Vol. 28, p. 185.
- [10] Oh, J. & Rhee, S.K. (2008). The influence of supplier capabilities and technology uncertainty on manufacturer-supplier collaboration. *International Journal of Operations & Production Management*. Vol. 28 No. 6, pp. 490-517.
- [11] Sánchez-Rodríguez, C. (2009). Effect of strategic purchasing on supplier development and performance: a structural model. *Journal of Business & Industrial Marketing*. Vol. 24 No. 3, pp.161-72.
- [12] Prajogo, D., Chowdhury, M., Yeung, A.C.L. & Cheng, T.C.E. (2012). The relationship between supplier management and firm's operational performance: a multi-dimensional perspective. *International Journal Production Economics*. Vol. 136 No. 1, pp. 123-130.
- [13] Kim, M., Suresh, N.C. & Kocabasoglu-Hillmer, C. (2015). A contextual analysis of the impact of strategic sourcing and E-procurement on performance. *Journal of Business & Industrial Marketing*. Vol. 30 No. 1, pp. 1-16.
- [14] Ashenbaum, B. & Maltz, A. (2017). Purchasing-logistics integration and supplier performance: an information processing view. *The International Journal of Logistics Management*. Vol. 28 No. 2, pp. 379-397.
- [15] Ramsay, John and Croom, S. (2008) *The impact of evolutionary and developmental metaphors on Purchasing and Supply Management: A critique*. *Journal of Purchasing and Supply Management*, 14 (3). pp. 192-204. ISSN 14784092
- [16] Chen, I. & Paulraj, A. (2004). Understanding supply chain management: critical research and a theoretical framework. *International Journal of Production Research*. Vol. 42 No. 131.
- [17] Tovstiga, G. (2010). *Strategy in practice: A practitioner's guide to strategic thinking*. West Sussex, UK: John Wiley.
- [18] Yarger, H.R. (2006). *Strategic theory for the 21st century: The little book on big strategy*.
- [19] Schneider, B. (1990). The climate for service: An application of the climate construct. In B. Schneider (Ed.), *Organizational climate and culture* (pp. 383–412). San Francisco, CA: Jossey-Bass.
- [20] Dutta, K. (2015). Strategic thinking as a differentiator in entrepreneurial cognition. *IUP Journal of Entrepreneurship Development*. Vol. 12 No. 2, p. 7.
- [21] Eidelwein, F., Piran, F.A.S., Lacerda, D.P., Dresch, A. & Rodrigues, L.H. (2018). Exploratory analysis of modularization strategy based on the theory of constraints thinking process. *Global Journal of Flexible Systems Management*. Vol. 19 No. 2, pp. 111-122.
- [22] Salhieh, L. & Abdallah A. (2019). "[A two-way causal chain between lean management practices and lean values](#)," [International Journal of Productivity and Performance Management](#), Emerald Group Publishing, vol. 68(5), pages 997-1016, June.

- [23] Reck, R.F. & Long, B.G. (1988). Purchasing: a competitive weapon. *Journal of Purchasing & Materials Management*. Fall, pp. 2-8.
- [24] Watts C., Kim K. & Hahn C. (1992). Linking purchasing to corporate competitive strategy. *International Journal of Purchasing and Materials Management*. Vol. 28 No. 4, pp. 2-8.
- [25] Lawson, B., Cousins, P., Handfield, R. & Petersen, K. (2009). Strategic purchasing, supply management practices and buyer performance improvement: an empirical study of UK manufacturing organisations. *International Journal of Production Research*. Vol. 47 No. 10, pp. 2649-67.
- [26] Van Weele, A.J. (2010). *Purchasing and supply chain management* (5th Ed.). Singapore: Seng Lee Press.
- [27] Matthysens, P., Bocconcelli, R., Pagano, A. & Quintens, L. (2016). Aligning marketing and purchasing for new value creation. *Industrial Marketing Management*. Vol. 52, pp. 60-73.
- [28] Kannan, V.R. & Choon, T.K. (2006). The impact of supplier selection and buyer-supplier engagement on relationship and firm performance. *International Journal of Physical Distribution & Logistics Management*. Vol. 36 No. 10, pp. 755-775.
- [29] Modi, S. & Mabert, V. (2007). Supplier development: improving supplier performance through knowledge transfer. *Journal of Operations Management*. Vol. 25 No. 1, pp. 42-64.
- [30] Petersen K., Ragatz G. & Monczka R. (2005). An examination of collaborative planning effectiveness and supply chain performance. *Journal of Supply Chain Management*. Vol. 41, pp. 14.
- [31] Whybark, C., Wacker, J. & Sheu, C. (2009). The evolution of an international academic manufacturing survey. *Decision Line*. pp. 17-19.
- [32] Telgen, Jan & Sitar, Corina. (2001). Possible kinds of values added by the purchasing department. *Reviews of Modern Physics - REV MOD PHYS*.
- [33] Amelia, S., Carr, G., Keong, L. & Chwen S. (2000). A study of purchasing practices in Taiwan. *International Journal of Operations & Production Management*. Vol. 20 No. 12, pp. 1427 – 1446.
- [34] González-Benito, J. (2007). A theory of purchasing's contribution to business performance. *Journal of Operations Management*. Vol. 25 No. 4, pp. 901–917.
- [35] González-Benito, J. (2010). Supply strategy and business performance: an analysis based on the relative importance assigned to generic competitive objectives. *International Journal of Operations & Production Management*. Vol. 30 No. 8, pp. 774–797.
- [36] Úbeda R., Alsua, C. & Carrasco, N. (2015). Purchasing models and organizational performance: a study of key strategic tools. *Journal of Business Research*. Vol. 68, pp. 177–188.
- [37] Ammer, D.S. (1989). Top management's view of the purchasing function. *Journal of Purchasing and Materials Management*. Vol. 25 No. 3, pp. 16-21.
- [38] Steinke, C., Dastmalchian, A. & Baniyadi, Y. (2015). Exploring aspects of workplace climates in Canada: implications for the human resources of health-care. *Asia Pacific Journal of Human Resources*. Vol. 53 No. 4, pp. 415-431.
- [39] Denison, D. (1996). What is the difference between organizational culture and organizational climate? A native's point of view on a decade of paradigm wars. *Academy of Management Review*. Vol. 21, pp. 619–654.
- [40] Kamarul, Z., Jasimuddin, S. & Kee, W. (2018). Organizational climate and job satisfaction: do employees' personalities matter?. *Management Decision*. Vol. 56 No. 2, pp.421-440. <https://doi.org/10.1108/MD-10-2016-0713>
- [41] Schneider, B., Ehrhart, M. G., & Macey, W. A. (2011). Perspectives on organizational climate and culture. In S. Zedeck (Ed.), *Handbook of industrial and organizational psychology* (pp. 373–414). Washington, DC: American Psychological Association.
- [42] Christian, M. S., Bradley, J. C., Wallace, J., & Burke, M. J. (2009). Workplace safety: A meta-analysis of the roles of person and situation factors. *Journal of Applied Psychology*. Vol. 94 No. 5, pp. 1103–1127.

- [43] Liao, H. & Chuang, A. (2007). Transforming service employees and climate: A multilevel, multisource examination of transformational leadership in building long-term service relationships. *Journal of Applied Psychology*. Vol. 92 No.4, pp. 1006–1019.
- [44] McKay, P. F., Avery, D. R., & Morris, M. A. (2009). A tale of two climates: Diversity climate from subordinates' and managers' perspectives and their role in store unit sales performance. *Personnel Psychology*. Vol. 62 No. 4, pp. 767–791.
- [45] Mayer, D., Nishii, L., Schneider, B. & Goldstein, H. (2007). The precursors and products of justice climates: Group leader antecedents and employee attitudinal consequences. *Personnel Psychology*. Vol. 60 No. 4, pp. 929–963.
- [46] Morrison, E. W., Kamdar, D. & Wheeler-Smith, S. L. (2011). Speaking up in groups: A cross-level study of group voice climate and voice. *Journal of Applied Psychology*. Vol. 96, pp. 183–191.
- [47] James, L. R. & Jones, A. P. (1974). Organizational climate: A review of theory and research. *Psychological Bulletin*. Vol. 81, pp. 1096–1112.
- [48] Garcia-Garcia, I., Ramos, V.B., Serrano, C., Cobos, R. & Souza, A. (2011). Nursing personnel's perceptions of the organizational climate in public and private hospitals in Spain. *International Nursing Review*. Vol. 58 No. 2, pp. 234–241.
- [49] Chen, I., Paulraj, A. & Lado, A. (2004). Strategic purchasing, supply management, and firm performance. *Journal of Operations Management*. Vol. 22 No. 5, pp. 505–23.
- [50] Cousins, P. D., Lawson, B. & Squire, B. (2006). An empirical taxonomy of purchasing functions. *International Journal of Operations & Production Management*. Vol. 26 No. 7, pp. 775 – 794. Permanent link to this document: <http://dx.doi.org/10.1108/01443570610672239>
- [51] Eisenbeiss, S., van Knippenberg, D. & Boerner, S. (2008). Transformational leadership and team innovation: Integrating team climate principles. *Journal of Applied Psychology*. Vol. 93 No. 6, pp. 1438–1446.
- [52] Grizzle, J. W., Zablah, A. R., Brown, T. J., Mowen, J. C. & Lee, J. M. (2009). Employee customer orientation in context: How the environment moderates the influence of customer orientation on performance outcomes. *Journal of Applied Psychology*. Vol. 94 No. 5, pp. 1227–1242.
- [53] Walumbwa, F. O., Peterson, S. J., Avolio, B. J. & Hartnell, C. A. (2010). An investigation of the relationships among leader and follower psychological capital, service climate, and job performance. *Personnel Psychology*. Vol. 63 No. 4, pp. 937–963.
- [54] Song, M. & Chen, Y. (2014). Organizational Attributes, Market Growth, and Product Innovation. *Journal of Product Innovation Management*. Vol. 31 No. 6, pp.1312–1329.
- [55] Safavi, H.P. & Karatepe, O.M. (2018). High-performance work practices and hotel employee outcomes: the mediating role of career adaptability. *International Journal of Contemporary Hospitality Management*. Vol. 30 No. 2, pp. 1112–1133. available at: <http://doi.org/10.1108/IJCHM-07-2016-0367>
- [56] Schiele, Holger. (2007). Supply-Management Maturity, Cost Savings and Purchasing Absorptive Capacity. *Journal of Purchasing and Supply Management*. 13. 274–293. 10.1016/j.pursup.2007.10.002.
- [57] Ellram, L.M. & Edis, O. (1996). A case study of successful partnering implementation. *International Journal of Purchasing & Materials Management*. Vol. 32 No. 4, pp. 20–8.
- [58] Carter, J. & Narasimhan, R. (1996). Purchasing and supply management: future directions and trends. *Journal of Supply Chain Management*. Vol. 32 No.4, pp. 2–12.
- [59] Narasimhan, R., Jayaram, J. & Carter, J.R., (2001). An empirical examination of the underlying dimensions of purchasing competence. *Production and Operations Management*. Vol. 10 No. 1, pp.1–15.
- [60] Rodríguez-Escobar J., Javier Al. & Javier G. (2017). The effect of strategic alignment on purchasing management. *Management Research Review*. Vol. 40 No. 11, pp. 1175–1200.
- [61] Jääskeläinen, A. & Heikkilä, J. (2019). Purchasing and supply management practices in customer value creation. *Supply Chain Management: An International Journal*. Vol. 24 No. 3, pp.317–333. <https://doi.org/10.1108/SCM-04-2018-0173>
- [61] Melek, A., Erik, M., Van R., Finn W., (2018). The impact of purchasing strategy-structure (mis)fit on purchasing cost and innovation performance. *Journal of Purchasing and Supply Management*. Vol. 24, pp. 68–82.

- [62] Doha, A., Ajay Das, A. & Pagell, M. (2013). The influence of product life cycle on the efficacy of purchasing practices. *International Journal of Operations & Production Management*. Vol. 33 No.4, pp. 470-498.
- [63] Alistair, B. & Desiree K. (2018). The role of strategic purchasing in dynamic capability development & deployment: A contingency perspective. *International Journal of Operations & Production Management*. Vol. 38 No. 2, pp. 446-473, <https://doi.org/10.1108/IJOPM-10-2015-0656>
- [64] De Lira, J. (2011). The Strategic Role of the Purchasing Function - Strategic Alignment. Master of Science Thesis INDEK 2011:93 downloaded on 10/6/2019 www.diva-portal.org/smash/get/diva2:509639/fulltext01
- [65] Barling, J., Loughlin, C. A., & Kelloway, E. K. (2002). Development and test of a model linking safety-specific transformational leadership and occupational safety. *Journal of Applied Psychology*, 87, 488 – 496.
- [66] Zohar, D. (2002). The effects of leadership dimensions, safety climate, and assigned priorities on minor injuries in work groups. *Journal of Organizational Behavior*, 23, 75–92.
- [67] James, L. R., Choi, C. C., Ko, C. E., McNeil, P. K., Minton, M. K., Wright, M. A., et al. (2008). Organizational and psychological climate: a review of theory and research. *Eur. J. Work Organ. Psychol.* 17, 5–32. doi: 10.1080/13594320701662550
- [68] Wallace, C.J., Edwards, D.B., Paul, J., Burke, M., Christian, M. & Eissa, G. (2016). Change the Referent? A Meta-Analytic Investigation of Direct and Referent-Shift Consensus Models for Organizational Climate. *Journal of Management*. Vol. 42 No. 4, pp, 838–861.
- [69] Hess, E. D. (2011). Growth is much more than just a strategy: It's a system. Case: UVA-S-0197. Charlottesville, VA: Darden Business Publishing.
- [70] Moon, B. (2013). [Antecedents and outcomes of strategic thinking](#). *Journal of Business Research*. Elsevier, Vol. 66 No. 10, pages 1698-1708.
- [71] Carroll, W., Dye, K. & Wagar, T. (2011). The role of organizational culture in strategic human resource management. In N. M Ashkanasy, C. P. M. Wilderom, & M. F. Peterson (Eds.), *Handbook of organizational culture & climate* (2nd ed., pp. 423–440). Thousand Oaks, CA: Sage.
- [72] Chow, I. & Liu, S. (2009). The effect of aligning organizational culture and business strategy with HR systems on firm performance in Chinese enterprises. *International Journal of Human Resource Management*. Vol. 20, pp. 2292–2310.
- [73] Cooper, D. & Schindler, P. (2003). *Business Research Methods*. Eighth Edition. McGraw Hill.
- [74] Hair, J.F., Black, W.C., Babin, B.J. & Anderson, R.E. (2010). *Multivariate Data Analysis*, 7th ed., Dorling Kindersley (India), Noida.
- [75] Kaiser, H.F. (1974). Analysis of factorial simplicity. *Psychometrika*. Vol. 39 No. 4, pp. 31-36.
- [76] Coakes, S. & Steed, L. (2007). *SPSS Version 14.0 for windows: Analysis without anguish*. Milton: John Wiley & Sons.
- [77] Bagozzi, R., Yi, Y. & Phillips, L. (1991). Assessing construct validity in organizational research. *Administrative science quarterly*. Vol. 36 No. 3, pp. 421–458.
- [78] George, D. & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference*. 11.0 update (fourth Ed.). Boston: Allyn and Bacon.
- [79] Louis T., Henrique F. & Patrick C. (2018). Does organizational climate moderate the relationship between job stress and intent to stay?: Evidence from Macau SAR, China. *Journal of Chinese Human Resource Management*. Vol. 9 No. 1, pp.2-20. <https://doi.org/10.1108/JCHRM-09-2017-0022>
- [80] Byun, G., Karau, S.J., Dai, Y. & Lee, S. (2018). A three-level examination of the cascading effects of ethical leadership on employee outcomes: a moderated mediation analysis. *Journal of Business Research*. Vol. 88, pp. 44-53.
- [81] Shao, J. (2018). The moderating effect of program context on the relationship between program managers' leadership competences and program success. *International Journal of Project Management*. Vol. 36 No. 1, pp. 108-120.
- [82] Pedhazur, E. (1997). *Multiple Regression in Behavioral Research*. Harcourt, Orlando, FL.

- [83] Aiken, L.S., West, S.G. & Reno, R.R. (1991), *Multiple Regression: Testing and Interpreting Interactions*. Sage, Newbury Park, CA.
- [84] Cohen, J. & Cohen, P. (1983). *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*. Lawrence Erlbaum Associates Inc., Hillsdale, NJ.
- [85] Youndt, M.A., Snell, S.A., Dean, J.W. & Lepak, D.P. (1996). Human resource management, manufacturing strategy, and firm performance. *Academy of Management Journal*. Vol. 39 No. 4, pp. 836-866.
- [86] Arunprasad P., (2017). Inevitable knowledge strategy: A paradigm shift in strategic HRM practices to augment firm's performance. *Employee Relations*. Vol. 39 No. 5, pp. 753-774, <https://doi.org/10.1108/ER-01-2016-0006>