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# A Causal Relationship between Collaborative Leadership and Innovation

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### **Abstract**

The objective of this study is to investigate the impact of organizational leadership on promoting innovation. A detailed literature review is used, and it was completed by statistical techniques as follow: graphical and tabular representation of Data, factor analysis, and reliability analysis.

This analysis revealed that organizational innovation is promoted through collaborative leadership. Companies are urged to promote collaborative leadership.

This dissertation is among the first to highlight the effect of collaborative leadership on organizational innovation. It provides a valuable platform for Leadership scholars and practitioners who search for improving leadership, and organizational innovation.

**Keywords:** Organizational leadership; Collaborative leadership; Organizational innovativeness

## Introduction

# General background

Effective leadership has been an important topic in recent academic research due to the increasing need for leaders who can help organizations survive and achieve sustainable development in an innovative environment and increasing challenges in all business domains, in all industries, worldwide. Thus, leaders must be effective in inspiring, motivating, and empowering individuals and groups to be more productive, and work to achieve the organizational goals effectively and efficiently. Leadership is essential for all types of organizations, and groups of people, as effective leaders maintain a healthy working environment to foster creativity, innovation, and organizational learning as means to achieve greater success, and better performance for the whole enterprise.

According to Kouzes and Posner [1], organizational leadership is the ability to inspire others and to reveal remarkable expertise in gaining others' confidence while leading a business or a group of people. Leadership involves establishing the vision of the business, sharing it, and providing all means needed to achieve it, while dealing with negative behaviors and conflicts between parties in the company, especially during tough and stressful times. Previous researches on open innovation has shown that economic principles can be used in markets that need changes for the future, and open innovation is always accompanied by a reassessment of leadership positions. This can directly improve a firm's performance, and affect its overall strategies. It is important to study this relationship because it can be used as a technique to develop firms, reengineer them, or even save them in times of trouble.

Innovation has been widely studied in the history of business. According to Chesbrough [2], open innovation involves all activities of searching flows of knowledge, joining them together, and manipulating them in order to develop a business and make innovation faster. Open innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for the external use of innovation, respectively [2]. Open innovation will directly lead to an open strategy, which is a new business model that is a balance between the extreme of open innovation and traditional business activities and practices. The intention is to keep the business on a safe

path of development with smooth and successful practices without any large risk that may directly damage the organization. The most talented and creative people in organizations are those who come up with open innovation ideas to increase the sustainability of a business, and provide additional value for customers [3].

# Need and importance of the study

This research was recommended by previous research as described below. Jyoti and Dev argued that the relationship between transformational leadership and employee creativity must be studied in future research [4].

# Objective of the study

The purpose of this study is to measure the variables affecting innovation in Lebanese organizations and to build a causal model that measures the direct and indirect variables of the antecedents preceding innovation in Lebanon.

# Statement of the research question

The research problem is as follows: "What is the relative importance of collaborative leadership to the explained variation in open innovation in Lebanese organizations?" A supplemental question is: "What problems may occur when leaders do not consider the importance of these factors to the success of the business?

This addresses the effectiveness of leadership and how leaders can help in promoting successful behaviors and performance in a global world of threats, risks, uncertainty and competition. Leaders must develop new tools and techniques of performing operational as well as the strategic decisions and actions.

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# Research hypotheses

The hypotheses to be studied in this thesis are the following:

H0: Organizational leadership promotes organizational innovativeness to be adopted in diverse business practices.

H1: Organizational leadership doesn't promote organizational innovativeness to be adopted in diverse business practices.

## Literature Review

# Organizational leadership

Leadership is of a primary importance in the development of organizations, and questions about the effectiveness of leaders and their success continue to be a major concern for researchers globally. Leaders have a story to tell for their followers, inspiring them, to be able to believe in it, understand, share, and adopt it. In order to successfully present this story, and to gain the support of followers, leaders adopt advanced well-structured procedures, performing critical steps for obtaining successful development, implementation, and control of stories and related ideas and meanings [5].

Leadership is demonstrated in the way a person develops, acts, and makes decisions, along with the behaviors resulting from and following those decisions. Sternberg found that leadership is mainly characterized by the following traits: wisdom, intelligence, and creativity [5].

Leaders adopt various approaches to leadership according to the situation [6]. Although different theories of leadership are in continuous development, the most important pattern remains the transactional-transformational leadership theory [7]. These patterns have been widely studied and Pearce mentions four different types of behaviors that may result in transactional-transformational theories: directive, transactional, transformational, and empowering. Directive leaders behave using commands and orders to give directions to followers and may use punishments to adjust behaviors. Transactional leaders behave based on expectancy and reinforcing theories and use exchanges or transactions as rewards. Transformational leaders behave by inspiring people and encourage them to pursue a given vision and to stay motivated to find innovative solutions and new methods of performing and reaching the highest potential. Empowering leaders focus on developing characteristics of self-management and selfleadership, which open new opportunities for followers to be more effective and to influence the whole team [8].

A survey of 1500 workers by Harvard Business Review researchers found that a leadership style in which the leaders are characterized by humility, empowerment of others, courage, and recognition of employees, in other words, a selfless leadership style, is needed to increase the acceptance of the individuals within the group and to obtain higher rewards.

Charisma is an important trait for leaders, and they strive to develop it. Ciampa found that charismatic leaders understand what followers need, and structure their messages to have the highest influence; they are excellent storytellers, optimistic, risk takers and are admired by followers [9]. These positive factors and characteristics, however, are constrained by a reality that the continuous loyalty that comes with charisma may make leaders develop negative behaviors. Early on, followers may perceive the leader as someone who does not want to be questioned, spurring complaints. Next, followers restrain their questions and the leader becomes overconfident and dominates the decision making. Followers become passive individuals and the flow

of work is negatively influenced. Leaders then complain about the need for their personal intervention. Followers then become pessimistic, with less listening, limited creativity, and decreased productivity [9]. To avoid negative issues, and in order to maintain effectiveness, leaders must consider two main important factors: organizational culture and their leadership style. The latter must include open communication and meetings to discuss strategies and feedback [9].

A historical icon of leadership is US President Abraham Lincoln, an example of integrity and values based on the principles of liberty and equality. Lincoln had unmatched vision about America, and he was continually using the principles on leadership to present himself as a strong source of inspiration for others An example is his saying: "Leave nothing for tomorrow which can be done today" (1850). This article found that by paying attention to details, strategy, and an extreme work ethic, Lincoln was able to convert passion into action with continual calculation and deep planning [10].

# Collaborative leadership

Transformational leadership consists of leaders who inspire and encourage others in the company, as well as in society, to seek and work toward achieving higher goals and outcomes. Transformational leadership consists of the reorganization of a business, and following a new vision that will result into a development of organizational culture [11]. Thus, in this leadership style, the leader focuses on influencing people to develop on the following levels: professionally, personally, emotionally, and intellectually. This will change the relationship between leaders and their followers, and will result in a positive transformation in the followers [11].

While a transformational leadership style focuses on influencing and encouraging followers; a transactional leadership style focuses on exchanges between the leader and the followers as a method to empower the latter towards achieving organizational goals. Leaders provide rewards and positive incentives on timely basis, which make this style more useful, focusing on specific purposes. This leadership style is based on contingency, and on the principles of rewards and punishment, in which everything needed from the followers is known according to a prepared structure and the leaders guide the followers throughout the tasks [12]. Hansen and Ibarra used a case of salesforce. com in the implementation of its chatter application to study the absence of collaborative environment in businesses [13]. They found that some leaders adopt a "command and control" style, which is unsuccessful in the current world where a collaborative leadership style is required. Collaborative leaders possess strong skills in the following areas: connecting people together, appealing to diverse capacities and talents in individuals, showing collaboration, and making the needed efforts to prevent a team from being stuck in debates. Successful leaders are proven to be pioneers in collaborative leadership. People who cannot deal with connectivity and collaboration will fail in a global world shaped by fast technological development, new trends in social media, and the abundance of virtual teams that will require additional transition to adopt collaborative leadership style. Collaborative leaders promote an environment, in which ideas, people, and resources are well connected in the company as well outside it, and this is related to knowledge and capacity of knowing when to exercise influence, when to decide, and when to call the team to discuss job-related issues [13].

Goman conducted qualitative research on collaborative environments and found the following features of collaboration: sharing information between departments is essential to increasing efficiency, productivity, and preventing power scuffles; collaboration

is mainly a change in employees' behavior; organizational change cannot be achieved without commitment, collaboration, intelligence, involvement of the employees and a common purpose; diverse teams resolve problems; strong interpersonal relationships in the workplace help a team to be more productive; trust and sharing knowledge between leaders and employees are mandatory to obtain a strong open collaboration based on complete information and continuous communication; and body language is essential in collaborative leadership [14].

Technological development and electronic advancements in a globalized world are changing the way business is conducted while disruption is happening in many industries. Collaborative leadership benefit from technological development but many efforts of collaboration face failures. Successful collaborative leaders are trustworthy, aggressive, transparent, deal with resources as instruments and not assets, and develop and maintain proper and formal documentation of decision rights, accountability, and rewards.

# Organizational innovativeness

Innovation is a set of steps to elaborate, develop, and apply new ideas, decisions, products and services to methods of doing business and dealing with diverse stakeholders. Innovation may be related to a manager's response to a change and innovation should not be considered a solution for all problems in organizations because sometimes, it can worsen them [15]. Failures in innovative experiments can be very costly, reduce performance, and negatively influence a business or its functions. Innovation may be used to prevent companies from having a rigid situation of innovation, and flexibility in innovation is highly required. Businesses must innovate in positive as well as negative situations to survive and develop [15].

"Innovate or die," a bold statement by Peter Drucker, has sparked continuous debates. Innovation requires an investment in R and D, which is costly in terms of time and money [16]. This is achieved through the establishment of "a minimum viable innovation system", which has a life span of 90 days, and is less expensive, with no need to add additional employees. This system can be completed by a thorough focus on intuition, and on a good assessment of the situation in question and the whole system [16].

Most companies innovate to beat competition, and a frame for the business activities is bounded by information and knowledge about current products and services, markets, and value. Companies may therefore miss important content that is hidden by pre-conceived and known frames. The results may be an improvement in costs and/or quality only, without going further into a breakthrough [17].

Substitute products and services are major sources of competition for any business in different industries, and have direct influence on the decision making of buyers who compare product/services with their substitutes before any purchase, sometimes even unconsciously. Among strategic groups, firms need to know the reasons behind decisions of buyers to switch from one group to another. In most industries, companies have a traditional definition of a customer as an individual to target, but in reality, there are many direct and indirect customers, because the people who purchase a product are not always those who use it. There are many individuals influencing a purchase decision. Continuous innovation and continuous study of the market are needed to face the changes in today's markets. Substitute products, companies with similar strategies but different pricing levels, and the creation of new markets are keys to fostering innovation [17].

# **Empirical Methodology**

# Methodology

The research instrument adopted in this study for collecting data is a structured questionnaire based on closed-ended questions. All of the respondents completed the survey in writing, and the answers were analyzed quantitatively to obtain patterns and trends.

The instrument in this research study is used as metrics to gather data about the impact of organizational leadership on promoting open innovation, creativity, and organizational learning. Based on the review of the literature and previous studies, the researcher constructed a structured questionnaire composed of 65 statements, and presented it to a sample of 302 managers in Lebanon.

### Variables and their measurement

In this study, the independent variable is: leadership and the dependent variable is the open innovativeness. Each variable is measured by a number of statements on a survey questionnaire using a Likert 5-point type scale, in which 1 indicates "strongly disagree" and 5 indicates "strongly agree".

The dependent variable "open innovativeness" is measured by eight statements taken from previous researches [2,3,15,18,19].

The first independent variable "leadership" is measured by 16 statements taken from previous researches: [1,6,7,11,20-24].

## Conceptual framework for analyzing data

The researcher conducted all of the following statistical methods: graphical and tabular representation of data, factor analysis (preceded by two tests: the Kaiser-Meyer-Olkin (KMO) test, and Bartlett's Test of Sphericity), reliability analysis.

Cronbach's alpha ( $\alpha$ ) was introduced in 1951 by Lee Cronbach to identify the consistency in a group of data obtained in a test. When correlation exists in data, the value of alpha will be higher [25]. This value must be obtained each time a test is performed; a researcher cannot rely on existing values of alpha [26]. Cronbach's alpha is a common metric to study internal reliability in cases of Likert questions or in any questionnaire that composes a scale. Many tables are obtained in statistics, and one of them is the table of reliability statistics that provide the value of Cronbach's alpha [25].

The need for valid and reliable results is the base of statistics. Reliability consists of having consistent data. This characteristic is related to the validity of data, but it does not only depend on the validity of the information [25]. Defining alpha remains a popular method; however, obtaining a high alpha does not necessary mean that there is a high degree of internal consistency. The length of a test may be behind this result [25].

A commonly accepted level of reliability is 0.7, while 0.8 and higher is an index of good reliability, and 0.95 and higher is an index that there is high reliability [27].

Factor analysis is a statistical method used to divide a large amount of data into smaller parts to be able to manage and understand them more effectively. The researcher can than know how they relate, and discover hidden patterns. Factor analysis is used for complex sets of data. A "factor" is a group of tested variables: a set of observed variables with similar response models linked to a variable that is not directly measured [28].

Two types of factor analysis exist: exploratory and confirmatory. Exploratory factor analysis is used when we do not have any information about existent dimensions in a set of variables and about their structure. When this information is known, we may use the confirmatory factor analysis [28].

The Kaiser-Meyer-Olkin (KMO) test is used to test suitability of data to factor analysis, and its value ranges between 0 and 1. When it is between 0.8 and 1, the sampling is adequate; but if it is under 0.6, the sampling will be inadequate and changes should be made [29]. According to Kaiser, the values are as follows: 0.00 to 0.49: unacceptable, 0.50 to 0.59: miserable, 0.60 to 0.69: mediocre, 0.70 to 0.79: middling, 0.80 to 0.89: meritorious, and 0.90 to 1.00: marvelous [29].

Bartlett's Test of Sphericity is used to compare the observed correlation matrix to the identity matrix, to test any existence of redundancy between variables or the factors [30]. This test relates to the significance of the study, and it shows the validity and suitability of collected data to the problem being addressed through the study [31].

# Population and sample selection

Valid and reliable studies require special attention to the population and sample chosen in terms of important variables like the size and the sample's representation of the population. In addition, a researcher must be aware of how to obtain authorization to contact the sample in question. In this study, the population is composed of managers from diverse industries in Lebanon. The sample is very large, composed of 302 managers at the front line level and above from different SMEs in Lebanon. The findings are based on responses from 262 valid and reliable questionnaires.

The chosen sample is representative of the whole population, and contains diverse characteristics of the population. In addition, the results may be generalized to a larger population using sampling statistics that add value to the work; this was a main concern in this work, along with reducing bias to a minimum. As for the sampling frame, the sampling units from which the sample is drawn are individuals having managerial authority, who are leaders in organizations at a high level in the hierarchy.

The sampling technique adopted is a random technique, in which all units have the chances to be selected as members of the population, in order to increase the validity of the research.

# **Findings**

Since the researcher in this study did not have access to all names and characteristics of all managers in the small and medium enterprises (SMEs) in Lebanon, he decided to depend on the skills of trained interviewers, who were asked to visit SMEs in Lebanon and to use a convenient large sample, in addition to using surveymonkey.com (Table 1).

One hundred and sixty eight out of the two hundred and sixty two respondents are males (64.1 valid per cent). Figure 1 shows the representation of the gender of the two hundred and sixty two respondents.

Kaiser-Meyer-Olkin measu	0.945	
Bartlett's test of sphericity	Approx. Chi-Square	8811.662
	Df	1128
	Sig.	0

Table 1: KMO and Bartlett's test.

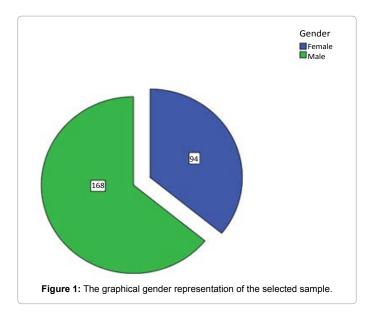


Figure 2 shows the graphical representation of the age distribution of the two hundred and sixty two respondents. As shown in Figure 2, the age variable is approximately normally distributed with an average age close to 42 years for Lebanese SMEs managers.

Figure 3 shows that the experience on the current job of the respondents is approximately moderately positively skewed with an average close to 9 years of experience. Their average on previous experience is 12.417 years.

Figure 4 shows the graphical representation of year of education for two hundred and sixty two respondents. The education variable is approximately normal with an average of 17 years of education. Furthermore, fifty per cent of the selected sample has 18 years of education or more.

# Reliability analysis and Cronbach's alpha

**Collaborative leadership:** Tables 2-5 show that the first dimension entitled "Collaborative Leadership" is highly reliable with Cronbach's alpha equals 0.955.

**Innovativeness:** Tables 6-9 shows that the second dimension entitled "Innovativeness" is highly reliable with Cronbach's alpha equals 0.915.

Testing the Relative Importance of the Independent Variables to the Explained Variation in the Dependent Variable.

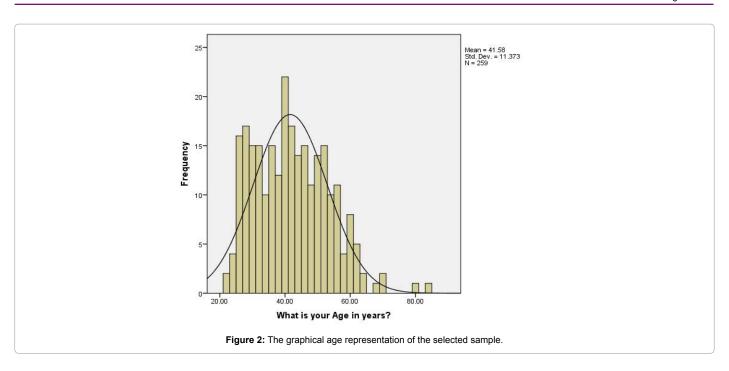
The regression was performed for the dependent variable "Innovativeness" on the following independent variable: "Collaborative Leadership."

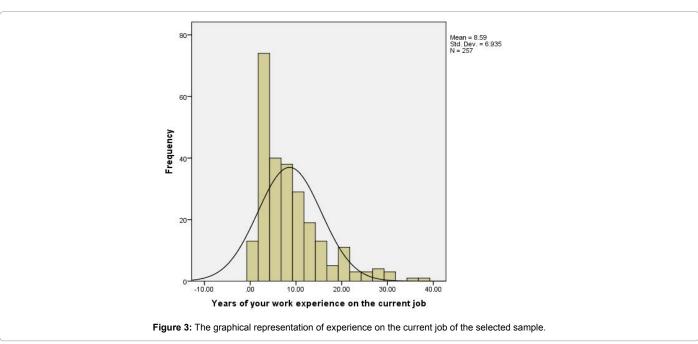
It is found that the regression equation is highly significant (F=7.199, p=.000) and the  $R^2$  is 0.304. Tables 10-12 shows that variation in "Innovativeness" is determined by the explanatory variables out of thirteen independent variable: Collaborative Leadership.

# **Conclusion and Recommendations**

# Conclusion

The researcher in this study agrees with Barsh et al. that "Innovation is a big idea with a big potential. But it is wise to approach it in small steps, implementing just one or a few of the ideas we propose and



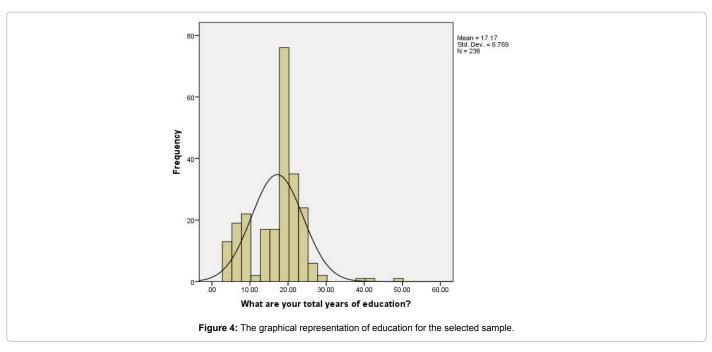


		N	%
Cases	Valid	262	100
	Excludeda	0	0
	Total	262	100
al istwice deletion based on al	I variables in the procedure	·	

Table 2: Case processing summary.

Cronbach's Alpha	Cronbach's Alpha based on standardized items	N of items
0.955	0.955	16

Table 3: Reliability statistics.



	Mean	Minimum	Maximum	Range	Maximum/minimum	Variance	N of items
Item means	3.513	3.172	3.733	0.561	1.177	0.024	16

Table 4: Summary item statistics.

	Mean	Std. deviation	N
Management in our company creates a sense of community among employees.	3.645	1.11759	262
Management in our company promotes teamwork rather than individual decision making	3.7214	1.21084	262
Management in our company spends the time to form friendly relationships with employees	3.3817	1.2408	262
Management in our company does not consider itself above the employees	3.355	1.27455	262
Management in our company allows employees to do what they do well	3.5344	1.19255	262
Management in our company involves employees in suggesting new ideas	3.6679	1.11092	262
Management in our company listens to employees	3.7328	1.06007	262
Management in our company enhances employees' problem-solving skills	3.5534	1.14261	262
Management in our company does what it promises to do	3.6145	1.20036	262
Management in our company makes me feel like I work with him/her, not for him/her	3.542	1.24266	262
Employees in our company feel recognized	3.5	1.209	262
Employees in our company feel valued	3.4885	1.22469	262
Employees in our company are trained to be creative	3.1718	1.23374	262
Employees in our company are rewarded for suggesting new product or service	3.2901	1.25938	262
Everyone's concerns in our company are freely expressed	3.4466	1.19826	262
Everyone's point of view in our company is freely expressed	3.5611	1.11507	262

Table 5: Item statistics.

		N	%
Cases	Valid	262	100
	Excluded <sup>a</sup>	0	0
	Total	262	100
<sup>a</sup> Listwise d	leletion based on all varial	bles in the procedure.	

Table 6: Case processing summary.

building from there. And for many companies, the initial steps on this value-creating journey are the most critical of all" [32].

Different statistical techniques were used in this study including:

- 1. Graphical and Tabular Representation of Data
- 2. Factor Analysis
- 3. Reliability Analysis

The researcher in this study can conclude that promoting innovation is a result of collaborative leadership, and leaders must adopt a collaborative leadership style in order to achieve more effectively the organizational goals.

The first hypothesis was accepted and therefore Organizational leadership promotes Organizational innovativeness to be adopted in diverse business practices.

# Recommendations

**Recommendations for decision making:** Findings of this study coincide with the findings of Akbar and his associates who found that leaders can utilize a combination of both transformational and transactional leadership styles considering different situations and conditions to influence their employees' creativity and innovation." [33].

	Mean	Std. deviation	N
During the last years, my company improved methods of manufacturing or producing goods or services	3.7176	1.08119	262
During the last years, my company improved methods of distributing goods or services	3.6679	1.04333	262
During the last years, my company improved maintenance systems or operations for purchasing, accounting, or computing	3.6718	1.04638	262
During the last years, my company obtained advanced machinery, equipment and computer hardware or software	3.6412	1.10081	262
During the last years, my company launched procedures and technical preparations	3.5267	1.15688	262
During the last years, my company increased its range of goods or services	3.6183	1.09655	262
During the last years, my company entered new markets or increased market share	3.6069	1.06225	262
During the last years, my company improved flexibility of production or service provision	3.5229	0.99301	262

Table 7: Item statistics.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.915	0.916	8

Table 8: Reliability statistics.

	Mean	Minimum	Maximum	Range	Maximum/minimum	Variance	N of items
Item means	3.622	3.523	3.718	0.195	1.055	0.005	8

Table 9: Summary item statistics.

Model	R	R Square	Adjusted R Square	Std. error of the estimate
1	.552ª	0.304	0.262	0.8509334

<sup>a</sup>Predictors: (Constant), REGR factor score 9 for analysis 1 \_ SCS, Gender, What are your total years of education? , REGR factor score 5 for analysis 1 \_ Creativity, Years of your work experience on the current job, REGR factor score 3 for analysis 1 \_ Performance, REGR factor score 8 for analysis 1 \_ CSR, Years of your past work experience, REGR factor score 7 for analysis 1 \_ Delegation, REGR factor score 4 for analysis 1 \_ Benefits, REGR factor score 6 for analysis 1 \_ Learning, REGR factor score 1 for analysis 1 \_ Leadership, What is your Age in years?

Table 10: Model summary.

ANOVA <sup>a</sup>								
Model		Sum of Squares	df	Mean Square	F	Sig.		
1	Regression	67.77	13	5.213	7.199	.000ь		
	Residual	154.955	214	0.724				
	Total	222.725	227					

<sup>&</sup>lt;sup>a</sup>Dependent Variable: REGR factor score 2 for analysis 1\_ Innovativeness

<sup>b</sup>Predictors: (Constant), REGR factor score 9 for analysis 1 \_ SCS, Gender., What are your total years of education? REGR factor score 5 for analysis 1 \_ Creativity, Years of your work experience on the current job, REGR factor score 3 for analysis 1 \_ Performance, REGR factor score 8 for analysis 1 \_ CSR, Years of your past work experience, REGR factor score 7 for analysis 1 \_ Delegation, REGR factor score 4 for analysis 1 \_ Benefits, REGR factor score 6 for analysis 1 \_ Learning, REGR factor score 1 for analysis 1 \_ Leadership, What is your Age in years?

Table 11: ANOVA.

	Coefficient	:S <sup>a</sup>			
del	Unstandard	dized Coefficients	Standardized Coefficients	t	Sig.
	В	Std. Error	Beta		
(Constant)	0.281	0.335		0.838	0.403
What are your total years of education?	-0.005	0.009	-0.03	-0.513	0.608
What is your Age in years?	-0.007	0.011	-0.081	-0.657	0.512
Years of your work experience on the current job	0.011	0.012	0.073	0.916	0.36
Years of your past work experience	0.004	0.01	0.036	0.362	0.718
REGR factor score 1 for analysis 1 _ Leadership	0.204	0.079	0.204	2.597	0.01
REGR factor score 3 for analysis 1 _ Performance	0.032	0.061	0.032	0.522	0.602
REGR factor score 4 for analysis 1_ Benefits	0.137	0.066	0.138	2.084	0.038
REGR factor score 5 for analysis 1 _ Creativity	0.085	0.058	0.087	1.481	0.14
REGR factor score 6 for analysis 1_ Learning	0.133	0.07	0.131	1.899	0.059
REGR factor score 7 for analysis 1 _ Delegation	0.009	0.063	0.009	0.139	0.89
REGR factor score 8 for analysis 1 _ CSR	-0.062	0.063	-0.063	-0.977	0.33
REGR factor score 9 for analysis 1 _ SCS	-0.232	0.062	-0.234	-3.748	0
Gender.	-0.022	0.122	-0.011	-0.183	0.855

Table 12: Coefficients.

New rules and regulations are to be adopted by decision makers in businesses to create a healthy environment of trust, collaboration, and employees' satisfactions. **Recommendations for policy making:** Policy makers must promote collaboration, and improvement of team performance throughout the hierarchy, and any changes needed must be performed.

Makers must find a platform to secure, collect, and organize diverse inter-personal relationships with customers so as they will remain a competitive advantage for the brand.

**Recommendations for further research:** Future researchers are recommended to add additional items related to the organizational learning and creativity.

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