
THE EFFECT OF ORGANIZATIONAL CULTURE ON STRATEGIC THINKING: FIELD
STUDY ON PETROLEUM COMPANIES IN EGYPT

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ABSTRACT: *This research investigate the relation between organizational culture and strategic thinking. It depend on 16 hypotheses which were refused and accept the alternative hypotheses. The research depend on three companies in petroleum sector in Egypt.*

KEYWORDS: organizational culture, strategic thinking, field study, petroleum companies, Egypt

INTRODUCTION

Organizational culture includes an organization's expectations, experiences, philosophy, as well as the values that guide member behavior, and is expressed in member self-image, inner workings, interactions with the outside world, and future expectations. Culture is based on shared attitudes, beliefs, customs, and written and unwritten rules that have been developed over time and are considered valid (The Business Dictionary). Culture also includes the organization's vision, values, norms, systems, symbols, language, assumptions, beliefs, and habits (Needle, 2004). Simply stated, organizational culture is "the way things are done around here" (Deal & Kennedy, 2000). While the above definitions of culture express how the construct plays out in the workplace, other definitions stress employee behavioral components, and how organizational culture directly influences the behaviors of employees within an organization. Under this set of definitions, organizational culture is a set of shared assumptions that guide what happens in organizations by defining appropriate behavior for various situations (Ravasi & Schultz, 2006). Organizational culture affects the way people and groups interact with each other, with clients, and with stakeholders. Also, organizational culture may influence how much employees identify with their organization (Schrodt, 2002).

In its simplest form, strategic thinking is an ability to plan for the future. It's the capacity to prepare strategies and conjure ideas that will both cope with changing environments and consider the various challenges that lie ahead. Candidates that possess strategic thinking skills will be seen as top talent, and it's a quality that makes many managers, directors and executives the successful leaders they are. Here's our advice on becoming a powerful strategic thinker. Bring to your mind a professional [leader](#) you admire. Have you chosen them because of their innovation, intelligence or ability to engage audiences? Or maybe you like their capacity to critique process and procedure while still being receptive to feedback and change? If your model leader possesses any of the above qualities, they're a strategic thinker.

LITERATURE REVIEW

Organizational culture

Herskowitz conceived a wider definition of culture by suggesting that culture was a »human-made part of the environment« (Herskowitz, 1955). Organizational culture is the collective effect of the common beliefs, behaviours, and values of the people within a company. Those norms within any organization regulate how employees perform and serve customers, how they co-operate with each other, whether they feel motivated to meet goals, and if they are sincerely into the company's overall mission. How are employees getting their work done? Independently or collaboratively? Do employees feel inspired, committed, and engaged, or annoyed, overworked, and underappreciated? (Groysberg, Lee, Price & Cheng, 2018).

When we talk about organizational culture, we are talking about the employee experience, the internal view. What do the employees think? What is it like, to work here? How can the leadership keep them engaged, loyal, and devoted? Organizational culture, the employee experience, is a steady setting for every organization's daily operations. (Inholland, 2018). Organizational culture tends to be unique to a particular organization, composed of an objective and subjective dimension, and concerned with tradition and the nature of shared beliefs and expectations about organizational life. It is a powerful determinant of individual and group behavior. Organizational culture affects practically all aspects of organizational life from the way in which people interact with each other, perform their work and dress, to the types of decisions made in a firm, its organizational policies and procedures, and strategy considerations (Buono et al., 1985, p. 482).

Organizational or corporate culture is the pattern of values, norms, beliefs, attitudes and assumptions that may not have been articulated but shape the ways in which people in organizations behave and things get done. 'The culture of an organization refers to the unique configuration of norms, values, beliefs and ways of behaving that characterize the manner in which groups and individuals combine to get things done. Eldridge and Crombie (1974) Culture is a system of informal rules that spells out how people are to behave most of the time. Deal and Kennedy (1982) A pattern of basic assumptions – invented, discovered or developed by a given group as it learns to cope with the problems of external adaptation and internal integration – that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think and feel in relation to these problems. Schein (1985) Culture is the commonly held beliefs, attitudes and values that exist in an organization. Put more simply, culture is 'the way we do things around here'. Furnham and Gunter (1993)

Martins and Martins (2003, p 380) state the general definition of organisational culture as "a system of shared meaning held by members, distinguishing the organisation from other organisations". Arnold (2005, p 625) indicates that "organisational culture is the distinctive norms, beliefs, principles and ways of behaving that combine to give each organisation its distinct character". These two definitions suggest that organisational culture distinguishes one organisation from another organisation. Therefore, organisational culture is to an organisation what personality is to an individual (Johnson, 1990).Schein (1985, p 9) also defines organisational culture as "a pattern of basic assumptions invented, discovered, or developed by a given group as it learns to cope with its problems of external adaptation and internal

integration that has worked well enough to be considered valid, and therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems".
 rown (1998, p 9) defines organisational culture as "the pattern of beliefs, values and learned ways of coping with experience that have developed during the course of an organisation's history, and which tend to be manifested in its material arrangements and in the behaviours of its members".

There is no single definition for the concept of the organizational culture. Instead, there are several. For instance, "the process of thinking helps in establishing one member from another on the basis of cognitive thinking" (Geert, et al., 2010). "The success guidance based upon different values and norm that makes culture effective" (Schein, 2004); "the set of beliefs, behavior, norms and values helps in making culture most effective" (Kotter, et al., 1992).

The term "organizational culture," or "company culture," is a relatively recent addition to our vocabulary from the 1980s. Most simply, organizational culture involves how an organization functions and expresses itself. (Gaalup ,2013)

Strategic Thinking

Mintzberg □1987a) puts forward five formal definitions of strategy: plan; ploy; pattern; position; and perspective. For most people, strategy is generally perceived as a plan, a consciously intended course of action that is premeditated and deliberate. Planned strategies can be general or specific. Strategy can also be viewed as a pattern "in a stream of actions" taken by members of an organisation. If strategy as plan refers to deliberate, intended strategy that may or may not be realised, then strategy as pattern suggests unplanned, emergent strategy patterns or consistencies that are realised despite, or in the absence, of intentions □Mintzberg and Waters, 1985).

Bonn (2001) suggests that organizations that successfully develop and integrate strategic thinking at individual and organizational levels can create a core competency[1] that becomes the basis of enduring competitive advantage. Seen from this perspective, the role of strategic thinking has to become central for the future health of a business. The importance and relevance of this capability is highlighted by Liedtka (1998). He argues that in the face of an unpredictable, highly volatile and competitive market place, a capacity for divergent strategic thinking at multiple organization levels is seen as "central to creating and sustaining competitive advantage." It follows, therefore, that organizations would benefit highly from encouraging and helping to develop strategic thinking in as large a number of their employees as practicable.

Other authors have focused on strategic management processes. Some of them stated explicitly that good strategic planning contributes to strategic thinking (Porter, 1987); and some assumed implicitly that a well designed strategic management system facilitates strategic thinking within an organization (Thompson and Strickland, 1999; Viljoen, 1994). Garratt (1995) defined strategic thinking as a process by which senior executives "can rise above the daily managerial processes and crises" (p. 2) to gain a different perspective of the organization and its changing environments. Heracleous (1998) suggests that strategic thinking and strategic planning are interrelated and equally important for effective strategic management. Thompson and Strickland (1999) concur and state that a well-designed strategic management system facilitates

strategic thinking within the organization. (Abbas Monnavarian, Gita Farmani and Hajar Yajam).

For the past 25 years, studies have identified top leaders' absence of strategic thinking as a major detractor of organizational performance (Bonn, 2001; Essery, 2002; Mason, 1986; Zabriskie and Huellmantel, 1991). The concept of strategic thinking and its importance is discussed in the extant literature (Table AI), it can be defined as the attitude of an organisational thinking process which drives smart actions and the will to inspire the entire firm to work towards a goal (Hamel and Prahalad, 1994; Mintzberg, 1987; Bonn, 2005; Alsaaty, 2007; Dhir et al., 2018; Dhir, 2016, 2017), achieving the competitive advantage over the competitors and asserting an act of creating a new business venture (Shaheen et al., 2012; Kazmi and Naaranoja, 2015).

Research objectives:

- 1- Explore the relationship between strategic thinking and organizational culture
- 2- Explore the relation between strategic dimension, value dimension , symbols, and support dimension and thinking in time, thinking in opportunities, depending on hypotheses and systematic thinking .

RESEARCH METHODOLOGY

The researcher used two types of data as follow:

First: study methodology

a- Secondary resources:

The researcher depends on Arabic and English books and scientific journals which research in the topic of the study, and the researcher depends on published and unpublished secondary data backing to libraries in which the researches lies between 2010 and 2020.

b- Primary resources: the primary data was collected from all the employees in petroleum companies. , to get their opinions which serve the research topic to test the hypotheses in addition to make interviews as follows:

1- Questionnaire : the questionnaire was designed to know employees directions in petroleum companies in Egypt, the questionnaire was prepared to include all the study variables and its classified into two parts as follow:

First part: the part of organizational culture dimensions.

Second part: the part of strategic thinking dimensions.

2- The interviews: the researcher depends on making interviews to get answers for some information and data and notes from interviewee.

3- Analytical study: the questionnaire was analyzed to get the finding and recommendations.

Second: study population and sample:

1- Study population:

The study population is all the employees that works in petroleum companies in Egypt which is 13451 unit and this according to data in 2019.

2- Study sample:

From the sample table study sample is 373.5

Third: validity and reliability variables for questionnaire:

a- Validity :

From analysis revealed that validity variable for each dimension of the study greater than .60 and validity for all the questionnaire is .901 which is high rate of validity.

Table 1

N	Dimensions	Validity	Reliability	Paragraphs number
1	Strategic dimension	.712	.844	5
2	Values dimension	.742	.861	5
3	Symbols	.692	.832	5
4	Support	.681	.825	5
5	Thinking about time	.689	.830	5
6	Thinking about opportunities	.788	.888	5
7	Depending on hypotheses	.802	.896	5
8	Systematic thinking	.853	.924	5
	Questionnaire	.901	.949	40

b- Reliability: the reliability is .60 for each dimension of dimensions of the study and reliability for the questionnaire as a whole is .949 and this consider a good rate which mean that questionnaire is reliable to measure each dimension.

Forth: study limitations:

The human limitations:

The field study is on the employees of the companies (top, middle and bottom line management) at three companies of petroleum in Egypt.

The spatial limitation:

The study was applied on three companies of petroleum in Egypt.

Time limitation:

The data was collected between June 2020 and July 2020

Fifth: hypotheses testing:

Null hypothesis: there is no significant relation between organizational culture and strategic thinking.

The first sub hypothesis:

There is no significant relation between strategic dimension and thinking in time.

To test this hypothesis the researcher conducted the following tests:

a- Correlation table 2

Variable	Test	Strategic dimension	Thinking about time
Strategic dimension	Pearson correlation	1	.553
	Sig.	0.000	0.000

This table emphasize that there is statistical relation at percent 55.3% at significant level .05 between the two variables.

b- Model summary: table3

Independent variable	R Square	Adjusted R square	Std . Error of the estimate
Strategic dimension	0.305	0.303	3.32997

The previous table clarify that $R^2 = .305$ which mean that strategic dimension explain the change in thinking in time at percent 30.5% , the remaining percent explained by another variables.

c- ANOVA Test:

Table4

Sig.	F	Mean Square	Df	Sum of Squares	Model
0.000	139.799	1550.189	1	1550.189	Regression
		11.089	318	3526.199	Residual
			319	5076.387	Total

The previous table clarify that there is positive relation between strategic dimension and thinking in time which explained by the value of F which have significant level .05 .

d- Regression analysis: table 5

Sig.	T	Standardized Coefficients	Unstandardized Coefficients		The model
		Beta	Std. Error	B	
0.000	7.003		0.904	6.332	Constant
0.000	11.824	0.553	0.05	0.588	Strategic dimension

The previous table clarify that T test for strategic dimension have significant level at .05 and that clarify the strong relation between two variables.

We can summarize from the previous table the following:

pearson and regression variable less than .05 which mean that there is statistical relation between the two variables .

pearson was positive which mean that there is positive relation between the two variables.

Beta clarify that independent variable affect the dependent one at different percentage and that is not by chance

from previous the researcher can accept the alternative hypothesis:

“There is significant effect between the two variables “

2-Second sub hypothesis:

a- Correlation:

The following table clarify correlation between strategic dimension as independent variable and thinking in opportunities as dependent variable

Table 6

Variable	Test	Strategic dimension	Thinking about opportunities
Strategic dimension	Pearson correlation	1	.535
	Sig.	0.000	0.000

And from the previous table there is correlation between two variables at percentage of 53.5% at significant level .05.

b- Model Summary: table 7

Independent variable	R Square	Adjusted R square	Std . Error of the estimate
Strategic dimension	.287	.284	3.39069

The previous table clarify that $R^2 = .287$ which mean that strategic dimension explain the change in thinking in time at percent 28.7%, the remaining percent explained by another variables.

c- ANOVA Test table8

Sig.	F	Mean Square	Df	Sum of Squares	Model
0.000	127.81	1469.403	1	1469.403	Regression
		11.497	318	3655.969	Residual
			319	5125.372	Total

The previous table clarify that there is positive relation between the two variables which explained by the value of F which have significant level .05 .

d- Regression : table 10

Sig.	T	Standardized Coefficients	Unstandardized Coefficients		Model
		Beta	Std. Error	B	
0.000	8.043		0.921	7.405	Constant
0.000	11.305	0.535	0.051	0.573	Strategic dimension

The previous table clarify that T test for strategic dimension have significant level at .05 and that clarify the strong relation between two variables.

We can summarize from the previous table the following:

Pearson and regression variable less than .05 which mean that there is statistical relation between the two variables .

Pearson was positive which mean that there is positive relation between the two variables.

Beta clarify that independent variable affect the dependent one at different percentage and that is not by chance

from previous the researcher can accept the alternative hypothesis:

“ there is significant effect between the two variables “

3-Third sub hypothesis:

a- Correlation:

The following table clarify correlation between

Table 11

Variable	Test	Strategic dimension	Thinking about opportunities
Strategic dimension	Pearson correlation	1	.535
	Sig.	0.000	0.000

From the previous table its clarify that there is a relation between the two variables at percentage 51.1% at significant level .05.

b- Model summary: table 12

Std. Error of the Estimate	Adjusted R Square	R Square	Model
3.59853	0.259	0.261	Strategic dimension

$R^2 = .261$ which mean that the independent variable explain the change in the dependent variable at percent 26.1 % .

c- ANOVA Test: table 13

Sig.	F	Mean Square	Df	Sum of Squares	Model
0.000	112.396	1455.463	1	1455.463	Regression
		12.949	318	4117.924	Residual
			319	5573.387	Total

The previous table clarify that there is positive relation between the two variables which explained by the value of F which have significant level .05 .

d- Regression: table 14

Sig.	T	Standardized Coefficients	Unstandardized Coefficients		Model
		Beta	Std. Error	B	
0.000	6.877	0.511	0.977	6.719	Constant
0.000	10.602		0.054	0.57	Strategic dimension

The previous table clarify that T test for strategic dimension have significant level at .05 and that clarify the strong relation between two variables .

We can summarize from the previous table the following:

pearson and regression variable less than .05 which mean that there is statistical relation between the two variables .

pearson was positive which mean that there is positive relation between the two variables.

Beta clarify that independent variable affect the dependent one at different percentage and that is not by chance

from previous the researcher can accept the alternative hypothesis:

“ there is significant effect between the two variables “

4-forth sub-hypothesis:

There is no significant effect to strategic dimension on systematic thinking

a- Correlation: table 15

Variable	Test	Strategic dimension	Systematic thinking
Strategic dimension	Pearson correlation	1	.470
	Sig.	0.000	0.000

From the previous table its clarify that there is significant relation between two variables at percent 47.0%

b- Model Summary: table 16

Std. Error of the Estimate	Adjusted R Square	R Square	Model
3.98482	0.218	0.221	Strategic dimension

$R^2 = .221$ which mean that the independent variable explain the change in the dependent variable at percent 22.1 % .

c- ANOVA Test: table 17

Sig.	F	Mean Square	Df	Sum of Squares	Model
0.000	90.141	1431.337	1	1431.337	Regression
		15.879	318	5049.46	Residual
			319	6480.797	Total

The previous table clarify that there is positive relation between the two variables which explained by the value of F which have significant level .05 .

d- Regression : table 18

Sig.	T	Standardized Coefficients	Unstandardized Coefficients		Model
		Beta	Std. Error	B	
0.000	7.071		1.082	7.651	Constant
0.000	9.494	0.470	0.06	0.565	Strategic dimesnsion

The previous table clarify that T test for strategic dimension have significant level at .05 and that clarify the strong relation between two variables.

We can summarize from the previous table the following:

pearson and regression variable less than .05 which mean that there is statistical relation between the two variables .

pearson was positive which mean that there is positive relation between the two variables.

Beta clarify that independent variable affect the dependent one at different percentage and that is not by chance

from previous the researcher can accept the alternative hypothesis:

“ there is significant effect between the two variables “

5-Fifth sub-hypothesis:

There is no significant relation between value dimension and thinking in time

a- Correlation: table 19

Variable	Test	Value dimension	Thinking in time
Value dimension	Pearson correlation	1	.727
	Sig.	0.000	0.000

From the previous table its clarify that there is significant relation between two varibles at percent 72.7%

b- Model summary: table 20

Std. Error of the Estimate	Adjusted R Square	R Square	Independent variable
2.74143	0.528	0.529	Value dimension

$R^2 = .529$ which mean that the independent variable explain the change in the dependent variable at percent 52.9% .

c- ANOVA TEST: table 21

Sig.	F	Mean Square	Df	Sum of Squares	Model
0.000	357.463	2686.483	1	2686.483	Regression
		7.515	318	2389.905	Residual
			319	5076.387	Total

The previous table clarify that there is positive relation between the two variables which explained by the value of F which have significant level .05 .

d- Regression analysis: table22

Sig.	T	Standardized Coefficients	Unstandardized Coefficients		Model
		Beta	Std. Error	B	
0.000	7.212	0.727	0.656	4.732	Constant
0.000	18.907		0.038	0.725	Value dimension

The previous table clarify that T test for strategic dimension have significant level at .05 and that clarify the strong relation between two variables.

We can summarize from the previous table the following:

pearson and regression variable less than .05 which mean that there is statistical relation between the two variables .

pearson was positive which mean that there is positive relation between the two variables.

Beta clarify that independent variable affect the dependent one at different percentage and that is not by chance

from previous the researcher can accept the alternative hypothesis:

“ there is significant effect between the two variables “

6-sixth sub hypothesis:

There is no significant relation for value dimension on thinking in opportunities

a- Correlation:

Table 23

Variable	Test	Value dimension	Thinking in time
Value dimension	Pearson correlation	1	.749
	Sig.	0.000	0.000

From the previous table its clarify that there is significant relation between two variables at percent 74.9%

b- Model summary:

Table 24

Std. Error of the Estimate	Adjusted R Square	R Square	Model
2.65916	0.56	0.561	Value dimension

$R^2 = .561$ which mean that the independent variable explain the change in the dependent variable at percent 56.1% .

c- ANOVA TEST: table25

Sig.	F	Mean Square	Df	Sum of Squares	Model
0.000	406.828	2876.744	1	2876.744	Regression
		7.071	318	2248.628	Residual
			319	5125.372	Total

The previous table clarify that there is positive relation between the two variables which explained by the value of F which have significant level .05.

d- Regression analysis: table 26

Sig.	T	Standardized Coefficients	Unstandardized Coefficients		Model
		Beta	Std. Error	B	
0.000	8.028	0.749	0.636	5.109	Constant
0.000	20.17		0.037	0.75	Value dimension

The previous table clarify that T test for independent variable have significant level at .05 and that clarify the strong relation between two variables.

We can summarize from the previous table the following:

pearson and regression variable less than .05 which mean that there is statistical relation between the two variables .

pearson was positive which mean that there is positive relation between the two variables.

Beta clarify that independent variable affect the dependent one at different percentage and that is not by chance

from previous the researcher can accept the alternative hypothesis:

“ there is significant effect between the two variables “

7-seventh sub-hypothesis:

a- Correlation : table 27

Variable	Test	Value dimension	Depending on hypotheses
Value dimension	Pearson correlation	1	.740
	Sig.	0.000	0.000

From the previous table its clarify that there is significant relation between two variables at percent 74%

b- Model summary: table 28

Std. Error of the Estimate	Adjusted R Square	R Square	Model
2.81421	0.547	0.548	Value dimension

$R^2 = .548$ which mean that the independent variable explain the change in the dependent variable at percent 54.8% .

c- ANOVA Test: table 29

Sig.	F	Mean Square	Df	Sum of Squares	Model
0.000	385.729	3054.894	1	3054.894	Regression
		7.92	318	2518.494	Residual
			319	5573.387	Total

The previous table clarify that there is positive relation between the two variables which explained by the value of F which have significant level .05 .

d- Regression analysis: table 30

Sig.	T	Standardized Coefficients	Unstandardized Coefficients		Model
		Beta	Std. Error	B	
0.000	5.93	0.74	0.674	3.994	Constant
0.000	19.64		0.039	0.773	Value dimensnion

The previous table clarify that T test for independent variable have significant level at .05 and that clarify the strong relation between two variables .

We can summarize from the previous table the following:

pearson and regression variable less than .05 which mean that there is statistical relation between the two variables .

pearson was positive which mean that there is positive relation between the two variables.

Beta clarify that independent variable affect the dependent one at different percentage and that is not by chance

from previous the researcher can accept the alternative hypothesis:

“ there is significant effect between the two variables “

8-Eighths sub-hypothesis:

There is no significant relation between value dimension and systematic thinking .

a- Correlation :

Table 31

Variable	Test	Value dimension	Systematic thinking
Value dimension	Pearson correlation	1	.787
	Sig.	0.000	0.000

From the previous table its clarify that there is significant relation between two varibles at percent 78.7%.

b- Model summary: table 32

Std. Error of the Estimate	Adjusted R Square	R Square	Model
2.78584	0.618	0.619	Value dimension

$R^2 = .619$ which mean that the independent variable explain the change in the dependent variable at percent 61.9% .

c- ANOVA Test: table 33

Sig.	F	Mean Square	Df	Sum of Squares	Model
0.000	517.059	4012.835	1	4012.835	Regression
		7.761	318	2467.961	Residual
			319	6480.797	Total

The previous table clarify that there is positive relation between the two varibles which explained by the value of F which have significant level .05 .

d- Regression analysis: table 34

Sig.	T	Standardized Coefficients	Unstandardized Coefficients		Model
		Beta	Std. Error	B	
0.000	4.442		0.667	2.961	Constant
0.000	22.739	0.787	0.039	0.886	Value dimension

The previous table clarify that T test for independent variable have significant level at .05 and that clarify the strong relation between two variables.

We can summarize from the previous table the following:

pearson and regression variable less than .05 which mean that there is statistical relation between the two variables .

pearson was positive which mean that there is positive relation between the two variables.

Beta clarify that independent variable affect the dependent one at different percentage and that is not by chance

from previous the researcher can accept the alternative hypothesis:

“ there is significant effect between the two variables “

9- ninth sub-hypothesis:

There no significant relation between symbol dimension and thinking in time .

a- Correlation: table 35

Variable	Test	symbol dimension	Thinking in time
symbol dimension	Pearson correlation	1	.640
	Sig.	0.000	0.000

From the previous table its clarify that there is significant relation between two variables at percent 64%

b- Model summary: table 36

Std. Error of the Estimate	Adjusted R Square	R Square	Independent variable
3.07006	0.408	0.410	Symbol dimension

$R^2 = .410$ which mean that the independent variable explain the change in the dependent variable at percent 41%

c- ANOVA Test: table 37

Sig.	F	Mean Square	Df	Sum of Squares	Model
0.000	220.593	2079.147	1	2079.147	Regression
		9.425	318	2997.24	Residual
			319	5076.387	Total

The previous table clarify that there is positive relation between the two variables which explained by the value of F which have significant level .05 .

d- Regression analysis: table 38

Sig.	T	Standardized Coefficients	Unstandardized Coefficients		Model
		Beta	Std. Error	B	
0.000	7.936		0.75	5.951	Constant
0.000	14.852	0.640	0.043	0.642	Symbol dimension

The previous table clarify that T test for independent variable have significant level at .05 and that clarify the strong relation between two variables.

We can summarize from the previous table the following:

pearson and regression variable less than .05 which mean that there is statistical relation between the two variables .

pearson was positive which mean that there is positive relation between the two variables.

Beta clarify that independent variable affect the dependent one at different percentage and that is not by chance

from previous the researcher can accept the alternative hypothesis:

“ there is significant effect between the two variables “

10- tenth sub-hypothesis:

There is no significant relation for symbol dimension and thinking in opportunities .

a- Correlation: table 39

Variable	Test	symbol dimension	Thinking in opportunities
symbol dimension	Pearson correlation	1	.613
	Sig.	0.000	0.000

From the previous table its clarify that there is significant relation between two variables at percent 61.3%

b- Model summary: table 40

Std. Error of the Estimate	Adjusted R Square	R Square	Model
3.17195	0.374	0.376	Symbol dimension

$R^2 = .376$ which mean that the independent variable explain the change in the dependent variable at percent 37.6%

c- ANOVA Test: table 41

Sig.	F	Mean Square	Df	Sum of Squares	Model
0.000	191.417	1925.893	1	1925.893	Regression
		10.061	318	3199.479	Residual
			319	5125.372	Total

The previous table clarify that there is positive relation between the two variables which explained by the value of F which have significant level .05 .

d- Regression analysis: table 42

Sig.	T	Standardized Coefficients	Unstandardized Coefficients		Model
		Beta	Std. Error	B	
0.000	9.235		0.775	7.156	Constant
0.000	13.835	0.613	0.045	0.618	Symbol dimension

The previous table clarify that T test for independent variable have significant level at .05 and that clarify the strong relation between two variables .

We can summarize from the previous table the following:

pearson and regression variable less than .05 which mean that there is statistical relation between the two variables .

pearson was positive which mean that there is positive relation between the two variables.

Beta clarify that independent variable affect the dependent one at different percentage and that is not by chance

from previous the researcher can accept the alternative hypothesis:

“ there is significant effect between the two variables “

11- Eleventh sub-hypothesis:

There is no significant relation between symbol dimension and depending on hypotheses.

a- Correlation: table 43

Variable	Test	symbol dimension	Depending on hypotheses
symbol dimension	Pearson correlation	1	.635
	Sig.	0.000	0.000

From the previous table its clarify that there is significant relation between two variables at percent 63.5%

b- Model summary: table 44

Std. Error of the Estimate	Adjusted R Square	R Square	Model
3.23242	0.402	0.404	Symbol dimension

$R^2 = .404$ which mean that the independent variable explain the change in the dependent variable at percent 40.4%

c- ANOVA Test: table 45

Sig.	F	Mean Square	Df	Sum of Squares	Model
0.000	215.412	2250.748	1	2250.748	Regression
		10.449	318	3322.64	Residual
			319	5573.387	Total

The previous table clarify that there is positive relation between the two variables which explained by the value of F which have significant level .05

d- Regression analysis: table 46

Sig.	T	Standardized Coefficients	Unstandardized Coefficients		Model
		Beta	Std. Error	B	
0.000	7.061		0.79	5.575	Constant
0.000	14.677	0.635	0.045	0.668	Symbol dimension

The previous table clarify that T test for independent variable have significant level at .05 and that clarify the strong relation between two variables .

We can summarize from the previous table the following:

pearson and regression variable less than .05 which mean that there is statistical relation between the two variables .

pearson was positive which mean that there is positive relation between the two variables.

Beta clarify that independent variable affect the dependent one at different percentage and that is not by chance

from previous the researcher can accept the alternative hypothesis:

“ there is significant effect between the two variables “

12- the twelfth sub-hypothesis:

There is no significant relation between symbol dimension and systematic thinking .

a- Correlation:

Table 47

Variable	Test	symbol dimension	Systematic thinking
symbol dimension	Pearson correlation	1	.660
	Sig.	0.000	0.000

From the previous table its clarify that there is significant relation between two variables at percent 66%

b- Model summary : table 48

Std. Error of the Estimate	Adjusted R Square	R Square	Model
3.3911	0.434	0.436	Symbol dimension

$R^2 = .436$ which mean that the independent variable explain the change in the dependent variable at percent 43.6%

c- ANOVA Test : table 49

Sig.	F	Mean Square	Df	Sum of Squares	Model
0.000	245.568	2823.93	1	2823.93	Regression
		11.5	318	3656.866	Residual
			319	6480.797	Total

The previous table clarify that there is positive relation between the two variables which explained by the value of F which have significant level .05 .

d- Regression analysis: table 50

Sig.	T	Standardized Coefficients	Unstandardized Coefficients		Model
		Beta	Std. Error	B	
0.000	6.117		0.828	5.067	Constant
0.000	15.671	0.660	0.048	0.748	Symbol dimension

The previous table clarify that T test for independent variable have significant level at .05 and that clarify the strong relation between two variables .

We can summarize from the previous table the following:

pearson and regression variable less than .05 which mean that there is statistical relation between the two variables .

pearson was positive which mean that there is positive relation between the two variables.

Beta clarify that independent variable affect the dependent one at different percentage and that is not by chance

from previous the researcher can accept the alternative hypothesis:

“ there is significant effect between the two variables “

13- Thirteenth variable:

There is no significant relation between support dimension and thinking in time.

a- Correlation:

Table 51

Variable	Test	Support dimension	Thinking in time
Support dimension	Pearson correlation	1	.569
	Sig.	0.000	0.000

From the previous table its clarify that there is significant relation between two variables at percent 56.9%

b- Model summary: table 52

Std. Error of the Estimate	Adjusted R Square	R Square	Independent variable
3.28439	0.322	0.324	Support dimension

$R^2 = .324$ which mean that the independent variable explain the change in the dependent variable at percent 32.4 %

c- ANOVA TEST: table 53

Sig.	F	Mean Square	Df	Sum of Squares	Model
0.000	152.593	1646.054	1	1646.054	Regression
		10.787	318	3430.334	Residual
			319	5076.387	Total

The previous table clarify that there is positive relation between the two variables which explained by the value of F which have significant level .05 .

d- Regression analysis: table 54

Sig.	T	Standardized Coefficients	Unstandardized Coefficients		Model
		Beta	Std. Error	B	
0.000	6.752		0.891	6.018	Constant
0.000	12.353	0.569	0.052	0.638	Support dimension

The previous table clarify that T test for independent variable have significant level at .05 and that clarify the strong relation between two variables .

We can summarize from the previous table the following:

pearson and regression variable less than .05 which mean that there is statistical relation between the two variables .

pearson was positive which mean that there is positive relation between the two variables.

Beta clarify that independent variable affect the dependent one at different percentage and that is not by chance

from previous the researcher can accept the alternative hypothesis:

“ there is significant effect between the two variables “

14- Fourteenth sub- hypothesis:

There is no significant relation between support dimension and thinking in opportunities .

a- Correlation:table 55

Variable	Test	Support dimension	Thinking in opportunities
Support dimension	Pearson correlation	1	.606
	Sig.	0.000	0.000

From the previous table its clarify that there is significant relation between two variables at percent 60.6%

b- Model Summary: table 56

Std. Error of the Estimate	Adjusted R Square	R Square	Model
3.19263	0.366	0.368	Support dimension

$R^2 = .368$ which mean that the independent variable explain the change in the dependent variable at percent 36.8 %

c- ANOVA TEST: table 57

Sig.	F	Mean Square	Df	Sum of Squares	Model
0.000	184.839	1884.039	1	1884.039	Regression
		10.193	318	3241.333	Residual
			319	5125.372	Total

The previous table clarify that there is positive relation between the two variables which explained by the value of F which have significant level .05 .

d- Regression analysis:

Table 58

Sig.	T	Standardized Coefficients	Unstandardized Coefficients		Model
		Beta	Std. Error	B	
0.000	6.997		0.867	6.063	Constant
0.000	13.596	0.606	0.05	0.682	Support dimension

The previous table clarify that T test for independent variable have significant level at .05 and that clarify the strong relation between two variables.

We can summarize from the previous table the following:

pearson and regression variable less than .05 which mean that there is statistical relation between the two variables .

pearson was positive which mean that there is positive relation between the two variables.

Beta clarify that independent variable affect the dependent one at different percentage and that is not by chance

from previous the researcher can accept the alternative hypothesis:

“ there is significant effect between the two variables “

15- Fifteenth sub-hypothesis:

There is no significant relation between support dimension and depending on hypotheses .

a- Correlation : table 59

Variable	Test	Support dimension	Depending on hypotheses
Support dimension	Pearson correlation	1	.539
	Sig.	0.000	0.000

From the previous table its clarify that there is significant relation between two variables at percent 53.9%

b- Model Summary: table 60

Std. Error of the Estimate	Adjusted R Square	R Square	Model
3.53737	0.286	0.291	Support dimension

$R^2 = .291$ which mean that the independent variable explain the change in the dependent variable at percent 29.1%

c- ANOVA Test: table 61

Sig.	F	Mean Square	Df	Sum of Squares	Model
0.000	127.408	1594.255	1	1594.255	Regression
		12.513	318	3979.132	Residual
			319	5573.387	Total

The previous table clarify that there is positive relation between the two variables which explained by the value of F which have significant level .05

d- Regression analysis: table 62

Sig.	T	Standardized Coefficients	Unstandardized Coefficients		Model
		Beta	Std. Error	B	
0.000	6.512		0.96	6.252	Constant
0.000	11.288	0.539	0.056	0.628	Support dimension

The previous table clarify that T test for independent variable have significant level at .05 and that clarify the strong relation between two variables.

We can summarize from the previous table the following:

pearson and regression variable less than .05 which mean that there is statistical relation between the two variables .

pearson was positive which mean that there is positive relation between the two variables.

Beta clarify that independent variable affect the dependent one at different percentage and that is not by chance

from previous the researcher can accept the alternative hypothesis:

“ there is significant effect between the two variables “

16- Sixteenth sub-hypothesis:

There is no significant relation between support dimension and systematic thinking .

a- Correlation: table 63

Variable	Test	Support dimension	Systematic thinking
Support dimension	Pearson correlation	1	.599
	Sig.	0.000	0.000

From the previous table its clarify that there is significant relation between two variables at percent 59.9%

b- Model Summary: table 64

Std. Error of the Estimate	Adjusted R Square	R Square	Model
3.6147	0.357	0.359	Support dimension

$R^2 = .359$ which mean that the independent variable explain the change in the dependent variable at percent 35.9 %

c- ANNOVA TEST: table 65

Sig.	F	Mean Square	Df	Sum of Squares	Model
0.000	178.003	2325.792	1	2325.792	Regression
		13.066	318	4155.004	Residual
			319	6480.797	Total

The previous table clarify that there is positive relation between the two variables which explained by the value of F which have significant level .05

d- Regression analysis: table 66

Sig.	T	Standardized Coefficients	Unstandardized Coefficients		Model
		Beta	Std. Error	B	
0.000	4.989		0.981	4.895	Constant
0.000	13.342	0.599	0.057	0.758	Support dimension

The previous table clarify that T test for independent variable have significant level at .05 and that clarify the strong relation between two variables .

We can summarize from the previous table the following:

pearson and regression variable less than .05 which mean that there is statistical relation between the two variables .

pearson was positive which mean that there is positive relation between the two variables.

Beta clarify that independent variable affect the dependent one at different percentage and that is not by chance

from previous the researcher can accept the alternative hypothesis:“ there is significant effect between the two variables “

FINDING

- 1- According to findings the first sub hypothesis was refused and accept the alternative hypothesis .
- 2- the second sub hypothesis was refused and accept the alternative hypothesis .
- 3- the third sub hypothesis was refused and accept the alternative hypothesis .
- 4- the forth sub hypothesis was refused and accept the alternative hypothesis .
- 5- the fifth sub hypothesis was refused and accept the alternative hypothesis .

6- the sixth sub hypothesis was refused and accept the alternative hypothesis .
 7- the seventh sub hypothesis was refused and accept the alternative hypothesis .
 8- the eighth sub hypothesis was refused and accept the alternative hypothesis .
 9- the ninth sub hypothesis was refused and accept the alternative hypothesis .
 10- the tenth sub hypothesis was refused and accept the alternative hypothesis .
 11- the eleventh sub hypothesis was refused and accept the alternative hypothesis .
 12- the twelfth sub hypothesis was refused and accept the alternative hypothesis .
 13- the thirteenth sub hypothesis was refused and accept the alternative hypothesis .
 14- the fourteenth sub hypothesis was refused and accept the alternative hypothesis .
 15- the fifteenth sub hypothesis was refused and accept the alternative hypothesis ..
 16- the sixteenth sub hypothesis was refused and accept the alternative hypothesis .
 and by this the researcher can refuse the main hypothesis and accept the main alternative hypothesis.

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