The Impact of Internal Control system according to COSO Framework   on the Effectiveness of Decision-making: a case study at Fertialcompany-annaba in Algeria

أثر نظام الرقابة الداخلية وفق إطار COSO على فاعلية اتخاذ القرارات : دراسة حالة بشركة فرتيال ـ عنابة في الجزائر

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Abstract:

This study aims to investigate the impact of internal control system on the effectiveness of decision-making. The population consists of all managers in the company, with total number 58. The questionnaires distributed were 58, from which 46 were returned, therefore the sample was determined in a random manner, and the hypotheses were tested using the regression analysis.

The results revealed the compliance with the components of the internal control system, and a significant positive impact of internal control on the effectiveness of decision-making in the company under study, upon which some recommendations were suggested.

Keywords: Decision-making; Effectiveness; Internal control.
JelClassificationCodes: C44, D7, D83.

ملخص: (الخط:SakkalMajalla، حجم الخط 14)

تهدفهذهالدراسةإلىمعرفةتأثيرنظامالرقابةالداخليةعلىفعاليةاتخاذالقرار.

يتكونالمجتمعمنجميعالمديرينفيالشركة،وعددهماالإجمالي 58. تم توزيع58 استبانة،   46 منهاتم

استرجاعها،لذلكتمتحديدالعينةبطريقةعشوائية،وتماختبارالفرضياتباستخدامتحليلالانحدار.

أظهرتالنتائجمدىالتزامبمكوناتنظامالرقابةالداخلية،وأثرمعنوي أساسها إيجابيللرقابةالداخليةعلىفاعليةاتخاذالقرارفيالشركةقيدالدراسة،حيثتمعلى اقتراحبعضالتوصيات.

كلمات مفتاحية: عملية اتخاذ القرار.، الفعالية.،الرقابة الداخلية.

تصنيف JEL : D83, D7, C44.

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1. Intrduction:

Many management writers, thinkers, and practitioners believe that decision-making is the essence and basis of the management process. Rather, it is the standard that is taken as a basis to distinguish between successful and unsuccessful managers in achieving the institutions objectives. Therefore, the success of the institution depends mainly on the efficiency of management in taking the right and appropriate decisions, and this of course will be only if the appropriate information are available. Since," information quality is a key in making decisions towards achieving the organizational effectiveness".(Mohanad S. & Shahizan, 2016, p. 131)

The modern management thinking has been reflected in the concept of internal control and its objectives, that it is not limited to the protection of cash and other assets, like at the beginning of its emergence, but beyond that to include technical, administrative and productive functions. Therefore, the interest in internal control has increased by economic institutions, even more after the financial crises in major countries such as the United States and Russia , where it has received great attention from researchers and other professional bodies by research and question about the role of internal control in the reduction of crises.

following the failure of a number of major US companies the National Commission on Fraudlent Financial Reporting, which is known "Treadway", was established, and called for the sponsoring organizations to collaborate in an effort to integrate internal control concepts and definitions into a common framework. in 1992 The Committee Of sponsoring Organizations (COSO) responded to Treadway Commission by promulgating Internal Control- Integrated Framework. This frame, referred to as the COSO Model of Internal Control, was widely accepted by many professional bodies.(Kent N. & lana , p. 4)

Since "all of organizations ought to enhance the adequacy of internal control systems, internal audit function and organization commitment because they improve good governance".(Cornelius, Caroline , & Edwine , p. 1), and the frameworks which have been developed in the form of internal control systems aimed primarily at improving production efficiency, through taking and implementation appropriate and effective decisions, therefore, the objective of the study is to examine the impact of internal control according to COSO frame work on the effectiveness of decision-making.

1.1.The problematic :

Most economic companies in Algeria suffer from many problems that lead to poor performance and consequently the failure to achieve their objectives,which could be due to the ineffectiveness of decisions taken based on aweak internal control system, that is the basis for providing the information and convenient environment for effective decision-making. Fertial Company-annaba is one of the institutions of great importance in the Algerian economy, and considering that the internal control system under the COSO framework has become the basis that is used by institutions, to keep with current developments, therefore, the problematic of this study is crystallized in the following main question:

"Does the COSO internal control system with its dimensions (Control environment, Risk Assessment, Control Activities,Information and communication, monitoring) have statistically significant effect, at the level of ($\alpha \leq 0.05$), on the effectiveness of decision-making in Fertial-Annaba company?"

For the purpose of facilitating the answer, the problematic was divided into sub-questions as follows:

1) Does the control environment have statistically significant effect on the effectiveness of decision-making at the level of ($\alpha \leq 0.05$),in Fertialcompany?"

2)Does the risk assessment have statistically significant effect on the effectiveness of decision-making at the level of ($\alpha \leq 0.05$),in Fertial company?"

3) Does the control activities have statistically significant effect on the effectiveness of decision-making at the level of ($\alpha \leq 0.05$),in Fertial company?"

4) Do communication and information have statistically significant effect on the effectiveness of decision-making at the level of ($\alpha \leq 0.05$),in Fertial company?"

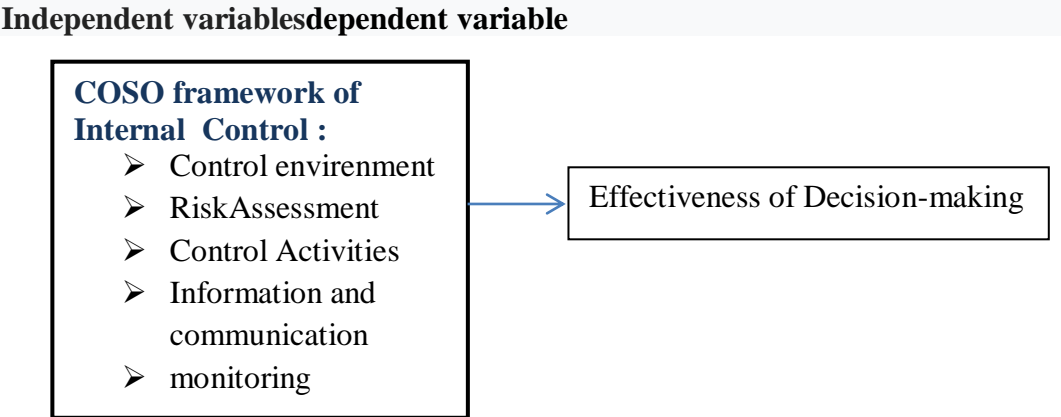5) Does monitoring have statistically significant effect on the effectiveness of

decision-making, at the level of $(\alpha \leq 0.05)$, in Fertial company?"

1.2. The study importance and purpose

The importance of the study lies in the importance of the components of the internal control system, which ensure the achievement of compliance with the policies and instructions that the institution is subject to, and its role in revealing the risks that threaten the achievement of the stated objectives, and achieving reports of quality and appropriate for decision-making.

The main purpose of this study is to know to what extent the internal control system according to COSO framework is applied, and its impact on the effectiveness of decision-making in FERTIALcompany. The research conceptual framework shown in figure.1 below illustrates the relation between independent variables and dependent variable.

Fig.1. Conceptual Framework

Independent variablesdependent variable

COSO framework of Internal Control :
- ➢ Control envirement
- ➢ RiskAssessment
- ➢ Control Activities
- ➢ Information and communication
- ➢ monitoring

Effectiveness of Decision-making

Source: Prepared by the researcher based on the study variables

1.3. Limitation of the study :

The study was restricted to managers at the various levelsof the Fertial company. The data used in the study were collected during the period 10/05/2019 to 25/05/2019.

2. Literature Review

2.1. Definition of terms and variables:

1) **Internal control system** : By definition, Internal control system is "the integration of the activities, plans, attitudes, policies, and efforts of people of an organization working together to provide reasonable assurance that the

organization will achieve its objectives and mission "(Bthayna, Rand, & Ali,
2016, p. 23).

2) **Internal control**:It is defined by COSO نعمة، عصام و أحمد، حسين يوسف، حسين)
(72 صفحة، 2008 as " a process that is implemented by an entity's board of directors
and other personnel, which is designed to provide reasonable assurance that the
entity will achieve three categories of objectives: (1)Effective and efficient
operations; (2) Reliable financial reporting; (3)Compliance with the applicable
laws and regulations.

3) **Internal control system Components**: There are five components of the
COSO internal control system:

1- Control environment: Control environment sets the tone of an organization,
influencing the conscience of its people. It includes, ethical values, and
competence of the entity's people, management philosophy and operating style,
the way management assigns authority and responsibility, organizes and develops
its people (Bthayna, Rand, & Ali, 2016, p. 23).

2- Risk assessment: It is the estimate of the likelihood and impact of risks from
internal and external sources. "The organization identifies risks and then analyses
for the possibility of their effects. Once the risks have been identified it is then the
management responsibility to formulate an approach for risk management and
decide on the internal control activities to be used to solve the risks and achieve
the internal control goals and objectives." (Duke D, 2018, p. 4). When
management could not avoid the risk occurrence it should determine whether to
accept the risk, reduce it up to the acceptable levels, or avoid.(Umar & Umar,
2018, p. 19).Therefore, the risk assessmentrequires the implementation of
mechanisms to identify, analyse and manage risks that threaten and prevent the
achievement of established objectives at every level in the organization.

3-Control activities: This element includes policies and procedures which are
designed and executed to address the risks identified by management in the risk
assessment level (Kent N. & lana , p. 5). Accordingly, the control activities
procedures in an organization involve, performance reviews, information
processing, physical control and segregation of duties in the organization. Control
activities are important in supporting qualitative efficiency for organization which
carries out activities that focus on examination (Duke D, 2018, p. 4).

4-Information and communication: This component represents the capture and
transfer of data needed by the business to conduct and control operations.

Whichmeans that, this component of the internal control system is to be able to obtain information and ensure communication among employees. It requires for the management information system and its information subsystems to be arranged in a disciplined and responsive manner.(Umar & Umar, 2018, p. 20).

5-Monitoring: It represents the function that aims to monitor and modify the entire internal control process when the need arises. It is the assessment of internal control performance over time. The reason for monitoring is to figure out if internal control is adequately designed, properly executed, and effective. Monitoring aims at determining whether organizational members are carrying out or have carried out their tasks efficiently and effectively as required by the organization policies. (Cornelius, Caroline , & Edwine , p. 5).

4) **Decision-making Effectiveness**:

- Decision-making: It was defined as"the conscious and human process involving both individual and social phenomenon based upon factual and value premises, which concludes with a choice of one behavioural activity from among one or more alternatives with the intention of moving toward some desired state of affairs."(Al-Shaikh, 2010, p. 5)Decision-making process is the essence of managerial activity as it relates to problem solving. Management in its strict sense is the process of making decisions, and decision is the output of managerial work.Decision-taking is the choice of the best alternative from among several alternatives. They may be routine decisions that are accustomed to being taken in frequent normal circumstances, or emergency decisions related to new events and variables, as they may be strategic or tactical decisions. Whatever it is, it is a continuous process that requires several stages, starting from the stage of defining the problem at issue to choosing the appropriate alternative. "Decisions usually involve several identifiable stages, first is the recognition that a problem exists, second is the identification of alternatives, then evaluate them and select one alternative or more for implementation." (Boumzaid, 2007, p. 40).Making effective decision means making the correct choice among several options. But to do so, it depends on the quality of information available to the decision maker (Mohanad S. & Shahizan, 2016, p. 128).Decisions are classified according to administrative levels into three types:

-Strategic decisions: These decisions are taken at the level of senior management, and are concerned with the long-term goals of the institution.

- Tactical decisions: They are decisions taken by the middle management, which are represented by the heads of departments and divisions.

- Executive decisions: These are those which are taken at the level of lower management, they are related to routine work and are characterized by repetition.

The decision- making effectiveness has three dimensions to be considered. First is the Quality which refers to the extent to which the decision maker is confident in his/her decision, and whether the decision is comprehensive, reliable, and understood by subordinates. Second is Commitment which refers to the extent to which a subordinate is committed to accepting the decision in order that it may be successfully implemented. The third dimension is Satisfaction, that is defined as the extent to which the sum of one's feelings or attitudes towards the decision. (Mohanad S. & Shahizan, 2016, p. 129).It should be noted that the importance of decisions varies according to the administrative levels that issue them.

2.2. Previous studies relevant to the subject of the study:

1. The study of(Mohanad S. & Shahizan, 2016) **, "Information Quality and Decision-making Effectiveness: A study of Banks in Palestine"**.This study focused on how information quality affects decision making in order to reveal its important role decision making effectiveness. To achieve the aim a sample of 146 bank managers in Palestinian banks was recruited. The data analysis was undertaken by using the partial least squares-structural equation modeling was used for descriptive and hypothesis testing. The result indicated the relevance and importance of information quality to decision making effectiveness.

2.The study of(Bthayna, Rand, & Ali, 2016)**, Examining the Effect of Internal Control System on Organizational Effectiveness,: A Jordanian Empirical Study.** This study aimed to investigate the impact of COSO internal control system on organizational effectiveness in Jordan, through three approaches which are organizational ability to achieve its goals, organizational ability to control and maintain the needed resources and the multiple constituency which deals with organizational competitiveness, job satisfaction, and customer satisfaction. The study data were collected using questionnaire from 151 employees occupying different managerial levels in Jordan, and some hypotheses were proposed. The results of the multiple regression test indicated a high positive impact of the study variables on organizational effectiveness.

3. The study of(Duke D, 2018) **, "The impact of internal control on the profitability of microfinance institutions in Senegal"** . This study aimed to

establish the relationship between internal control and profitability of microfinance institutions in Senegal. A questionnaire was used to collect data on a sample of 118 MFI's, to establish the influence of internal control on Earnings Per Share (EPS) , on return on assets (ROA) , and on equity (ROE) , and the influence of internal control on profit margin. The researcher used the quantitative analysis based on multiple regression analysis. The hypothesis was tested at 95% confidence interval. The result of the study found out that all dimensions of internal control were positively and significantly associated with the four indices of MFI's in senegale profitability.

4.The study of Helaimi I. and Ahmad guaid N.(2019 ، هلايلي و أحمد قايد) **'The contribution of the accounting information system to improving the decision making process of the economic institution'**. The aim of this study was to learn how the accounting information system contributes to improving the decision making process by identifying the parts of accounting information system through the decision making process, and find out its contribution. The most important result that the accounting information system had a basic role in the administrative information system with its financial information, which was used by internal users and must be throughout the process of decision making to improve decisions quality.

5.Naouel Keffous , Hakim Meliani(2019 ، كفوس و ملياني)**"The Extent of Adoption of the Internal Control According to COSO Framework in the Algerian companies – A Field Study on a Group of Companies in Setif"**. This study aimed to investigate the extent to which the internal control according to COSO framework was adopted by the Algerian Companies. To reach the aim of the study a questionnaire was designed and distributed to 16 industrial companies in setif. The result revealed the compliance of the Algerian companies in setif with the requirements for applying the internal control.

The current study is distinguished from the previous studies that it could be considered as a complementary to them. Since the majority of studies in Algeria related to this topic are limited to the extent of application of the internal control system in a sample of institutions, this study is distinguished because it is related to an important company in the industrial sector in Algeria, in addition to the importance of decision –making effectiveness as a dependent variable related to the subject of the current study, which is the basis of the management process.

3. The study methodology

The researcher followed the descriptive analytical approach, because it cares about the phenomenon as it is in reality, describes and analyse it,and then links it to other phenomena(7 صفحة ،2017 سهيل نعيم).The data used are primary and secondary data.Primary data was collected questionnaires, because it allows the researcher to reach a large sample with a limited time (Cornelius, Caroline , & Edwine , p. 7) .

3.1. Population and Sample of the Study

The study population consists of all managers at the various administrative levels of the institution under study, who are empowered to make decisions, with total number 58 managers. The number of questionnaires distributed was 58, and upon compiling them, 46 questionnaires were returned, with response rate of 79.31%. Therefore the study sample was determined in a stratified random manner.Table1.Illustrates the respondent characteristics:

Table1. Respondent Characteristics

Characteristics	Category	Frequency	%
Gender	Male	39	84.8
	Female	07	15.2
Education level	Secondary	07	15.2
	Licence	12	26.1
	Master	01	2.2
	State engineer	17	37
	Postgraduate	08	17.4
	others	01	2.2
Administrative level	top –level	01	02.17
	Middle–level	23	50
	First–level	22	47.83

Source: Prepared by the researcher based on the SPSS outputs

The table.1 above shows that, of the total responseswhich is (46), there were 39 (84.8%) respondents who identified themselves as male, while 7 (15.2%) respondents identified themselves as female. The results indicate that the majority of respondents 38 (82.7%) have a high level of education with university degrees, which means that they are able to apply the principles of internal control and decision-making.

3.2. Data Collection Study tool

The study tool used to collect primary data was questionnaire. The questionnaire was prepared according to the study variables, and upon literatures review and previous studies relevant to the study. It consists of two parts, the first part has been developed to obtain demographic data on the respondent. The second part is concerned with the study areas, it contains 38 paragraphs distributed on two axes**.**

First axis: consists of 20 paragraphs,   to measure the application of internal control system components, distributed as follows:(محمد حامد، 2016، صفحة 125)
Control environment (5 paragraphs, from 1 to 5); Risk assessment (5 paragraphs, from 6 to 10); Control activities (5 paragraphs, from 11 to 15); Information and communication (5 paragraphs, from 16 to 20); Monitoring (5 paragraphs, from 21 to 25)

Second axis : consists of 13 paragraphs numbered 26 to 38 ,to measure the degree of decision-making effectiveness.(هشام عيسى، 2017، صفحة 136)

The questionnaire used to collect data is withLikert rating scale method as it is easy to complete. The gradient chosen is 1 to 5, which means the answer to 5 indicated very high approval on what is stated in paragraphs concerned. There were five possible responses to each paragraph, Strongly Disagree (1); Disagree (2); Neutral (3); Agree (4); Strongly agree (5).Depending on the likert five-way scale the range and field length are as follow: (Bensedira & Bouhroud, 2020, p. 122) Range $= 5 - 1 = 4$,   field length $= 4/5 = 0.8$

 Therefore, the weighted mean which was used to judge the response level is according to the following table:

Table2. Response level according to weighed mean

The weighted mean	the response level
From 1 to 1.89	Very low
From 1.80 to 2.59	Low
From 2.60 to 3.39	Medium
From 3.40 to 4.19	High
From 4.20 to 5	Very high

Source:(عز حسن، 2008، صفحة 592)

3.3. Validity and reliability of the questionnaire

After the questionnaire had been prepared, it was presented to some experts at the university of Annaba for scrutiny and advice. The internal consistency was verified using the correlation coefficient between each topic and the overall score

of the study. Validity and reliability were tested using Cronbach's Alpha. The results for correlation coefficient were above 0.75 , and above 0.89 for Cronbach's Alpha, which means the instruments are reliable and valid , Because the ratios exceed the statistically acceptable value for Alpha coefficient which should be greater or equal to 0.60.

4. Results analysis and discussion

The data were analysed by the Statistical Package for Social Science (SPSS) for Windows, V20. The researcher used some descriptive statistical tools as they assist in variable response comparison and give a clear indication of response frequencies (Cornelius, Caroline , & Edwine , p. 7). They are including the computation of frequencies, percentages of demographic data. Means and standard deviations were computed for the level of the five component of the COSO internal control system , and the degree of decision-making effectiveness . However hypotheses were tested by regression coefficient.

For the purpose of answering the hypotheses, the analysis requires the necessity of identifying the degree of commitment of the institution under study to the components of the control system according to the coso model, This was done by determining the arithmetic mean and the standard deviation for each paragraph , and then for the axis as a whole:

4.1. Respondents opinions on control environment :

From the table 3 bellow, according to the arithmetic mean of the paragraphs, the response level for control environment was betweenmedium and high. Calculated mean scores ranged between 2.76 and 3.76. .Through the overall mean of the paragraphs, it turns out that the implementation of the control environment, according to coso, was in an medium degree, by the overall mean of the paragraphs which is 3.30 , with standard deviation 0.995.

Table3. Arithmetic mean and response level for the dimension of control environment

Nbr	Paragraph	Mean	S.Dev iation	Response level
1	The management is concerned with the reports issued by the internal audit committees	3.76	0.766	High
2	The management conducts periodic reviews of business strategies and	3.37	1.019	Medium

Nbr	Paragraph	Mean	S.Deviation	Response level
	policy			
3	Control is the responsibility of all employees of the institution	3.50	0.888	High
4	Management of the company distributes responsibilities and specifies the supervisory roles for workers	3.09	0.962	Medium
5	Salary systems and incentives are based on competency	2.76	1.099	Medium
	Total	3.30	0.995	Medium

Source : Prepared by the researcher based on the SPSS outputs

4.2.Respondents opinions on Risk Assessment :

The table (4) shows that the Risk assessment degree, basing on the arithmetic mean of the paragraphs is between 3.59, and 3. This result means that the degree of commitment to risk assessment was high, and it is confirmed by the overall mean of the paragraphs which is 3.716, with standard deviation 0.766.

Table 4. The arithmetic mean and response level for the dimension of Risk Assessment

Nbr	Paragraph	Mean	S.Deviation	Response level
6	Risks are classified based on their levels of influence on the workflow	3.91	0.626	High
7	Risks are determined whether controllable and not controllable	3.65	0.737	High
8	Mechanisms to assess all kinds of risks are identified	3.63	0.799	High
9	Quick actions are taken to address risks	3.59	0.909	High
10	Internal control contributes to determining the acceptable level of risk	3.80	0.719	High
	Total	**3.716**	**0.766**	**High**

Source: Prepared by the researcher based on the SPSS outputs

4.3.Respondents opinions on control activities:

The results obtained from the analysis of the data showed in the table (5), that the Control Activities degree according, basing on the arithmetic mean of the

paragraphs is between 3.83 and 3.39, which means that the degree of commitment to the dimension of Control Activities was between medium and high. The overall mean of the paragraphs, which is 3.716, with standard deviation 0.766,indicates that the degree of the application of this dimension was high.

Table 5. Arithmetic mean and response level for the dimension of control activities

Nbr	Paragraph	Mean	S.Deviation	Response level
11	Periodic monitoring reports are submitted	3.41	0.933	High
12	The principle of tasks separation is applied	3.39	0.829	Medium
13	Administrative and financial reports are used as an oversight tool	3.83	0.570	High
14	Regulatory reports include a periodic comparison between the results of the relevant periods	3.76	0.603	High
15	Regulatory reports include recommendations and suggestions for treatment	3.74	0.713	High
	Totat	**3.626**	**0.758**	**High**

Source: Prepared by the researcher based on the SPSS outputs

4.4.Respondents opinions on information and communication :

 From the table 6, the degree of the responses of the study sample members about this dimension, was confined between medium and high. The overall mean of the paragraphs which is 3.44, with standard deviation 0.954 indicates that the degree ofthe application of this dimension was high.

Table 6. The arithmetic mean and response level for the dimension of Information   and Communication

Nbr	Paragraph	Mean	S.Deviation	Response level
16	The activity of the institution is based on written and clear instructions.	3.37	1.103	Medium
17	There are effective communication channels that ensure workers understand the policies and procedures related to the	3.59	0.884	High

Nbr		Mean	S.Dev iation	Response level
	internal control system			
18	There is a clear assertion of powers and responsibilities through an effective communication system.	3.37	0.878	Medium
19	The organization's information system contributes to improving internal control procedures.	3.61	0.977	High
20	The financial and operational information system is impenetrable	3.28	0.911	Medium
	Totat	**3.44**	**0.954**	**High**

Source: Prepared by the researcher based on the SPSS outputs

4.5.Respondents opinions on monitoring:

According to table.7, the degree of the responses of the study sample members about the data of monitoring dimension was at high level. The overall mean of the paragraphs which is 3.65, with standard deviation 0.782 indicates that the degree of the application of this dimension was high.

Table7. The arithmetic mean and response level for the dimension of monitoring

Nbr	Paragraph	Mean	S.Dev iation	Response level
21	Internal control activities are dealt with as a daily duty.	3.43	0.886	High
22	Employees have the right to see documents and records for the purpose of control.	3.87	0.653	High
23	Workers in the control and auditing department have scientific qualification and long experience	3.52	0.809	High
24	Workers in the Control and Auditing Department are independent.	3.74	0.743	High
25	The results of the oversight reports are used to address shortcomings and improve performance	3.70	0.756	High
	Totat	**3.65**	**0.782**	**High**

Source: Prepared by the researcher based on the SPSS outputs

4.6. Respondents opinions on thedegree of decision-making effectiveness

It is clear from the Table 8, that the decisions of the company under study are based on the conditions of effectiveness, because it has the majority of factors

related to measuring this axis, with anoverall mean   3.40 and a standard deviation 0.947, therefore the degree of the application of this dimension was high.

Table 8. The arithmetic mean and response level for the dimension of decision-making effectiveness

Nbr	Paragraph	Mean	S.Deviation	Response level
26	The decisions made are related to the vision and strategic goals	3.48	0.863	High
27	The alternatives available when making decisions are evaluated according to clear criteria.	3.35	0.948	Medium
28	The participation of workers in making decisions is necessary.	2.87	1.024	Medium
29	The information necessary for the decision-making process are clear and illustrated.	3.20	0.980	Medium
30	Decisions are made according to the capabilities available to the institution.	3.63	0.799	High
31	When making decisions, earning employee confidence is the key to success.	3.48	0.983	High
32	Decisions regarding the duties of employees are discussed in consultation with them.	3.33	0.967	Medium
33	They take into account the possibility of unexpected consequences from decisions taken.	3.46	1.005	High
34	Decisions taken are canceled when necessary.	3.48	0.888	High
35	The right time for decisions to be announced is chosen after they are made.	3.85	0.666	High
36	The appropriate means and methods for implementing the decisions taken are well chosen.	3.52	0.913	High
37	The process of implementing decisions is closely followed.	3.20	1.003	Medium
38	There is continuous interest in following up the results of the stages	3.35	0.971	Medium

of implementing decisions.				
Total		**3.40**	**0.94′**	**High**

Source: Prepared by the researcher based on the SPSS outputs

5. Hypotheses test: Regression analysis was used to demonstrate acceptance or rejection of hypotheses, because it is known as a powerful statistical method that can help to examine the relationship between two or more variables. The results of the statistical analysis with respect to the hypotheses appeared accordas follow:

5.1.Main hypothesis test: This hypothesis states that:

Ho: "There is no statistically significant effect at the level (α ≤ 0.05) of the internal control system, according the COSO model with its all dimensions, on the effectiveness of decision-making in the Fertialcompany".

Results obtained using the regression coefficient analysis related to the main hypothesis are shown in Table 9.

Table 9. Results of the regression analysis testfor the effect of internal control with all its dimensions on the effectiveness of decision-making

R	R square	F	Sig	Analysis Result
0,701	0,491	42,446	0,000	Reject Ho

Source: Prepared by the researcher based on the SPSS outputs

Value of R explains the strength of association between independent variables and dependent variable and R value lies between 0-1.(Fatima, Ahmad, & Asvir, 2011, p. 265)**.** The basis to explain the values of the correlation coefficient,as follow: عز)
(254 حسن، 2008، صفحة

From 0.01 to 0. 29 : Very weak ; From 0.30 to 0. 49: Weak; From 0.50 to 0.69: Medium ; From 0.70 to 0.89: strong and from 0.90 to 0.99: very strong.

It is evident from Table.9 that the correlation coefficient R is equal 0.701, which indicates that there is a strong correlation relationship between Internal control according to COSO in all its dimensions and the effectiveness of decision-making, in the companyunder study. R value is near to 1, which shows a strong association between Internal control according to COSO in all its dimensions and the effectiveness of decision-making in the institution under study.On the basis of the statistical data, the coefficient of determination which is indicated by R square = 0.491, which means that internal control according to COSO has significantly positive effect on the effectiveness of decision-making in the company under

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study. The internal control brings 49.1% of changes in the effectiveness of decision-making.

From table.9 above , the calculated F = 42,446 which is > F tabulated = 4.06 with a significance level (probability value)Sig = 0.000, which is less thanα = 0.05 at a degree of freedom (1 and 44) , therefore this requires rejecting the null hypothesis and accepting the alternative hypothesis which states that " there is a statistically significant effect at the level of ($\alpha \leq 0.05$) of the internal control system according to the COSO model with its dimensions on the effectiveness of decision-making in the Fertial company ".Therefore the findings of the study reject the main hypothesis H_0 and accept and accept the alternative hypothesis H_1.

The main hypothesis is divided into five sub-hypotheses, each of which is related to the effect of one dimension of internal control, according to COSO, on the effectiveness of decision-making:

Ho_1: "There is no statistically significant effect at the level ($\alpha \leq 0.05$) of thecontrol environment according on the effectiveness of decision-making ".

Ho_2: "There is no statistically significant effect at the level of $\alpha \leq 0.05$) of the risk assessment on the effectiveness of decision-making ".

Ho_3: "There is no statistically significant effect at the level ($\alpha \leq 0.05$) of the control activities on the effectiveness of decision-making ".

Ho_4: "There is no statistically significant effect at the level ($\alpha \leq 0.05$) of theinformation and communication on the effectiveness of decision-making ".

Ho_5: "There is no statistically significant effect at the level ($\alpha \leq 0.05$) of the monitoring according on the effectiveness of decision-making ".

Results obtained using the regression coefficient analysis related to each independent variable for sub- hypotheses test are shown in Table10.

Table 10.Results of the regression analysis test for the effect of each dimension on the decision-making effectiveness

Dimension	R	R square	F	Sig	Result
Control environment	0.666	0.444	35.078	0,000	Reject Ho_1
Risk Assessment	0.306	0;094	4.551	0.039	Reject Ho_2
Control Activities	0.430	0.185	9.964	0.003	Reject Ho_3
Inform&communication	0.623	0;389	27.972	0.000	Reject Ho_4
Monitoring	0.717	0.514	46.583	0.000	Reject Ho_5

Source : Prepared by the researcher based on the SPSS outputs

Table.10 indicates the individual effect regression test for each dimension (independent variable) on the decision-making effectiveness, if the others are constant. It is evident from the correlation coefficient (R) for all components is a positive relationship between each dimension and the effectiveness of decision-making in the company under study. Two of this dimensions (Risk assessment, control activities) have weak positive correlation relationship because $0.3 < R < 0.49$, however two others (control environment, information and communication) have a medium positivecorrelation relationship, because$0.50<R < 0.69$. But for last dimension which is (Monitoring) , thecorrelation relationship was positive and strong, because $0.70 < R < 0.89$.

On the basis of the coefficient of determination, which is indicated by R square, it means that all internal control components according to coso have significantly positive effect on the effectiveness of decision-making in the institution under study. It indicates that 44.4 % of changes in the effectiveness of decision-making is due to control environment, 09.4% of changes in the effectiveness of decision-making is due to Risk Assessment , 18.5% of changes in the effectiveness of decision-making is due to control activities, 38.9% of changes in the effectiveness of decision-making is due Information and Communication , and 51.4% of changes in the effectiveness of decision-making is due monitoring, while the remaining are the unexplained variability.

In addition to the above analysis, the results of the regression analysis test for the effect of each dimension indicate the coefficient F as follow:
- The effect of control environment on the effectiveness of decision-making indicates that F=35.078 which is > F tabulated = 4.06, with a significance level Sig = 0.000, which is less thanα = 0.05 at a degree of freedom (1 and 44). Therefore this requires rejecting the null hypothesis Ho_1, and accepting the alternative hypothesis.
- The effect of risk assessment on the effectiveness of decision-making indicates that, F= 4.551 which is > F tabulatedwith a significance level Sig = 0.000,which is less than α = 0.05 at a degree of freedom (1 and 44), therefore this requires rejecting the null hypothesis Ho_2 and accepting the alternative hypothesis.
- The effect of control activities on the effectiveness of decision-making indicates that F= 9.964 which is > F tabulated with a significance level Sig = 0.000,which is less than α = 0.05 at a degree of freedom (1 and 44). Therefore, this requires rejecting the null hypothesis Ho_3 and accepting the alternative hypothesis

- The effect of information and communication on the effectiveness of decision-making indicates that, F= 27.972 which is > F tabulated with a significance level Sig = 0.000,which is less than α = 0.05 at a degree of freedom (1 and 44) , therefore this requires rejecting the null hypothesis Ho_4 and accepting the alternative hypothesis.

- The effect of monitoring on the effectiveness of decision-making indicates that F= 46.583 which is > F tabulated with a significance level Sig = 0.000,which is less than α = 0.05 at a degree of freedom (1 and 44), therefore, this requires rejecting the null hypothesis Ho_5 and accepting the alternative hypothesis.

6. Conclusion

The main objective of this study was to examine the effect of the internal control with thecoso framework on the effectiveness of decision making in Fertial company-annaba in Algeria. The findings indicated the followings:

- High degree of commitment by managers at all levels to the components of the internal control system according to COSO framework. The researcher attributes this to the managers awareness of the importance of the internal control system. This result has a similar finding with (نوال كفوس ،و حكيم ملياني ، 2019).

- Positive correlation between the internal control system as a whole and the effectiveness of decision-making. This was due to the managers education level .

- Weak positive correlation relationship between (Risk assessment, control activities) and the effectiveness of decision-making.

- Moderate positivecorrelation relationship betweentwo dimensions (control environment, information and communication) and the effectiveness of decision-making.

-Strong positive correlation relationship between the dimension (Monitoring), and the effectiveness of decision-making.

-.The internal control has significantly positive effect on the effectiveness of decision-making in the company under study.

- The company has an effective information system that contributes significantly to improving the internal control procedure.

Therefore, the present study provides anevidence that there is a positive and significant relationship between the five components of internal control,according to coso framework, and the effectiveness of decision-making.Based on the results of the study, the researcher would suggest the following recommendations:

- The managers of the fertial company should concentrate on the internal control system with all its dimensions, to maximize the effectiveness of decision-making and the wellbeing of the company.
- The company should review the implementation of the internal control requirements, especially those related torisk assessment, and control activities.

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