European Journal of Accounting, Auditing and Finance Research
Vol.5 No.3, pp.21-40, March 2017
Published by European Centre for Research Training and Development UK (www.eajournals.org)

THE EX-POST EVALUATION OF INVESTMENTS IN ACCOUNTING INFORMATION SYSTEM: THE ROLE OF CONTENT, CONTEXT AND PROCESS

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ABSTRACT: *Investments in Accounting Information System (AIS) play an important supporting role in most sectors of the economy. This study was designed to answer the question related to the roles of contextual factors, namely «content », « context» and « process» on the ex-post evaluation of investments in information technology. The model was tested using survey data collected from 269 companies. The results of analyzing structural equation support the proposed model and highlights positive and significant relationship of AIS investment and business performance of the companies. The same the analysis multiple groups also show the important moderating role of «content» , «context» and «process» on the relationship between AIS investments and business performance.*

KEYWORDS: Accounting Information System (AIS), Performance, Content, Context, Process.

INTRODUCTION

The role of accounting information system (AIS) in organizations has been highlighted in the literature of information system for decades. The last decade is marked by an increasing flow of business operations which were characterized by the growing use of AIS. Similarly, technological change affects the way companies manage their business. Today, information system is often identified as a source of competitive advantage and enhances the capacity of the company to fight against environmental turbulence (Cotton and Bracefield, 2000; Huerta and Sanchez, 1999; Ismail and King, 2005; Lubbe and Remenyi, 1999).Increasing IT spending (Ismail and King, 2005; Remenyi and Sherwood-Smith, 1999; Irani and Love, 2002) and the risk of use of information system in organizations lead the managers to take into consciousness the important role of AIS in companies survival and in achieving a competitive advantage.

Although many studies have led this decade; on the ex-post evaluation of AIS investments, especially to investigate the relationship between AIS investments and companies performance (Bharadwaj, 2000; Scott and Terry, 2000; Lee and Bose, 2002; Dehning, et al, 2003; Dehning et al, 2005; Mashal, 2006; Weill and Aral, 2006; Huang, 2007; Kobelsky et al., 2008, Bazaee, 2010), it has rarely been shown, and in a questionable way, the impact of contextual factors namely «content », « context» and « process» (CCP) on this relationship.

Based on a hypothetical deductive approach, the main objective of this research is to study and investigate the impact of contextual factors, CCP, on the ex-post evaluation of AIS investments. In other words, in conducting this study, we must answer the following question : What is the role of the content, context and process on the ex-post evaluation of AIS investments?

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

In what follows, we present, at the beginning, a review of literature on the ex-post evaluation of AIS, particularly on the relationship between these investments and companies performance, as well as creating scales measurement of contextual factors to investigate their roles in the ex-post evaluation of AIS investments. Then, we develop hypotheses and research methodology. Finally, the analysis and discussion of research results.

LITERATURE/THEORETICAL UNDERPINNING

AIS investments and firm performance

It is well admitted that the benefits arising from the adoption of investment in IT are not as effective as when they can be measured (Ward et al 1996, Li et al., 2011; Irani et al., 2006; Love et al., 2006; Leckson-Leckey, 2011; Irani, 2010). In particular, the ex-post evaluation is crucial because it provides the possibility to compare the expected results with the expected benefits and then any deviation will be documented. However, as has been discussed, projects are often a source of uncertainty and change, and therefore, the post-project evaluation is an important step in determining the outcome of an investment.Several researches have attempted to explore evaluation practices in organizations due to the importance of ex post evaluation (Hallikainena Nurmimaki, 2000; Ward et al., 1996; Asosheh et al., 2010; In and Byoung-Chan, 2010).

A positive association between AIS alignment and SME strategy and performance measures has been discovered by the study made by Ismail and King (2005) in which it offers scant evidence of the relationship between these AIS and performance measures. Also, in the Spanish case, Naranjo-Gil (2004) posits an indirect relationship between AIS and business performance. Beke (2010) proposed improving the accounting quality and the decision price associated with the use of AIS.

Existing literature on the relationship between AIS and performance measures; Ismail and King (2005) find a positive association between AIS alignment and SME strategy and performance measures. In the Spanish case, Naranjo-Gil (2004) posits an indirect relationship between AIS and business performance. Beke (2010) proposed improving the accounting quality and the decision price associated with the use of AIS.In the study of Urquia et al. (2011) which also examined the impact of the accounting information system (AIS) on performance measures in Spanish SMEs, has found that Saira et al. (2010) examined the information system and performance of firms in Malaysian SMEs using panel data.

There are studies that establish a positive relationship between IT investment and economic profitability, financial profitability and value added (Menachemi et al., 2006, Huang and Liu, 2005, Ravichandran and Lertwongsatien, 2005, Dos and Peffers, 1995, and Barney et al., 1995), and the results obtained in this study,. Other research shows that there is no relationship between this type of investment and performance indicators. (Dibrell et al., 2008, Bharadwaj, et al., 1999, Rai et al., 1996).

Similarly, they argue that many companies have invested in IT and fail to achieve institutional goals. Although quality-service research is more abundant in large companies, analysis of the impact on small businesses becomes particularly important investment in these technologies can give them a competitive advantage and the possibility of being positioned For better results.

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

The results are more flexible and have a better response capacity (Pérez et al., 2010, Tanabe and Watanbe, 2005, Izushi, 2003, Larsen and Lomi, 2002).

Given that ISAs are a core component of technology in general, the key question is whether the application of accounting information systems contributes to improved business performance. In view of the state of affairs the following research hypotesis is defined:
H1 : The AIS investments have a direct and positive impact on firm performance.

Contextual factors: Content, Context and Process
Based on a literature review on the evaluation of investments in IS (Irani et al., 2006; Love et al., 2006; Sedera et al., 2003; Serafeimidis and Smithson, 1999; Hemestra and Kusters, 2000), this research identifies three variables (content, context and process) that moderate the relationship between AIS investments and business performance.

The content
A key factor in any evaluation study is the understanding of what is being measured. The content evaluation includes the purpose of the evaluation and the lack of agreement on the criteria and evaluation measures. Some researchers advocate a move away from simple measures such as the narrow quantification of costs/benefits to include other measures such as intangibles, risks and strategic opportunities offered by the information system (Serafeimidis and Smithson, 2000; Love et al., 2006; Irani et al., 2006). The changing nature of IS and its uses indicate that the elements of "content" have changed and new methods are needed to account for intangibles (Irani, 2002; Love et al., 2006; Irani et al., 2006). This does not mean that all the traditional technical tools will be eliminated or that there is one instrument that is able to capture all aspects of assessment (Mirani and Lederer, 1998). The adoption of IS can significantly affect aspects of social, economic and organizational. Therefore, it is necessary to consider tools that are able to capture the overall impact of investments in IS to manage their adoption and effective use (Smithson and Hirschheim, 1998).

The use of techniques to face financial investments in IS can reduce the effectiveness of the measure (Land, 2000). Similarly, the use of financial techniques in organizations is explained by the presence of abundant financial executives in groups of Investment Evaluation of IS (Irani and Love, 2002; Mogollon and Raisinghani, 2003).

The "content" assessment is a complex task that is strongly influenced by the stakeholders and the organizational context.

H2 : The "content" of evaluation has a moderating effect on the direct relationship between AIS investment and performance of the company.

The context
Some researchers have called for a review of the role of "context" in the evaluation of investments in IS (Avgerou, 2001; Trauth, 2001). The "context" focuses on understanding the internal and external characteristics of organizations. Internal influences are summarized in the organizational structure (Symons, 1991; Willcocks, 1992; Irani and Love 2002), organizational culture (Huerta and Sanchez, 1999; Irani and Love, 2002), hierarchical structures and organizational processes (Willcocks, 1992; Farbey et al., 1995; Ward et al., 1996; Huerta and Sanchez, 1999; Remenyi and Sherwood-Smith, 1999; Jones and Hughes, 2001).

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

External influences are summarized in external factors such as social, political, economic and technological (Symons, 1991; Vetschera and Walterscheid, 1995; Smithson and Hirschheim, 1998; Huerta and Sanchez, 1999; Remenyi and Sherwood-Smith, 1999; Serafeimidis and Smithson, 2000), Jones and Hughes, 2001).

The organizational context determines the result of the evaluation, stakeholder influence, and also requires the why and the part responsible for the assessment. The purpose of an evaluation tends to be to assess the value, to measure the success or identifying benefits (House, 1980; Guba and Lincoln, 1989). However, the evaluation can be used to enhance an existing organizational structure for political or social reasons and to be a ritual rather than efficient.
The complexity of the evaluation approach owes much to the different perceptions and beliefs of different actors (Boulmetis and Dutwin 2000, Jones and Hughes, 2001; Irani et al., 2006).

H3 : The "Context" of evaluation has a moderating effect on the direct relationship between AIS investment and the performance of the company.

The processes
Guidance on the evaluation process requires information to explain how it will be undertaken (Symons, 1991). There are a plethora of different methods and tools that can be used to examine how the evaluation, such as simulation modeling (Giaglis et al., 1999), cost/benefit analysis, return on investment (Ballantine and Stray, 1999) and the traditional measure of user satisfaction (Bailey and Pearson, 1983; Ives and Olson, 1984; Goodhue et al., 2000). Thus, many factors that can significantly influence the conduct of the evaluation are ignored. They include the identification of the role of evaluation in organizational learning, a thorough examination of the strategic value systems and exploration of the easiest methods for the calculation of benefits (Farbey et al., 1993). There are arguments that informal assessment procedures are often ignored by senior management (Jones and Hughes, 2001), while the informal communication is an essential element in the effective evaluation (Serafeimidis and Smithson, 1994; Smithson and Hirschheim, 1998; Farbey et al., 1999; Jones and Hughes, 2001).
Other researchers (Remenyi and Sherwood-Smith, 1999; Farbey et al., 1999) predict that the evaluation process differs depending on the nature of the assessment are in the number of two: Formative and summative evaluation. Remenyi and Sherwood-Smith (1999) argue that continuous formative assessment helps to reduce failure, whereas summative evaluation is timely and based on a financial evaluation aimed at assessing the impacts and outcomes.
H4 : The "process" of evaluation has a moderating effect on the direct relationship between AIS investment and the performance of the company.

Creating scales of contextual factors
The operationalization of moderating variables (contextual factors) requires the construction of multi-item scales to measure in a meaningful way the concepts of content, context and process. The paradigm of Churchill (1979) is a highly recommended approach in the research process and helps to build instruments with rigorous multi-item measure. Further, the paradigm of Churchill has been extended by some authors including Anderson and Gerbing (1988) and Gerbing and Hamilton (1996). According to these authors, exploratory analyzes can only be preliminary. In other words, the incorporation of confirmatory factor analyzes will be more relevant to validate the measuring instrument. Therefore, we used this paradigm to develop scales of moderating variables. We integrated the confirmatory analysis at the last phase of the paradigm to validate the measurement of "content", "context" and "process".

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

According to Evrard and al (2003), the paradigm of Churchill (1979) is an eight-step procedure divided into three main phases, namely:

- Defining the conceptual domain through a clear and precise theoretical reflection on "content", on "context" and on "process".
- The exploratory phase: This phase is devoted to the generation and purification of items relating to the scale of measurement of "content", of "context" and of "process".
- The validation phase: at this level, we will check the reliability and validity of the measurement scale of the "content", of the "context" and of the "process".

Step 1: Defining the field of building

It is basically to build a tool to measure “content”, “context” and “process”. The examination of the various definitions and measures of this concept allows the identification of different favorable facets its operationalization.

A number of researchers suggest that methodological issues on the evaluation of IS should be considered in terms of prospects "content" and "context" and "process" (Sedera et al., 2003; Serafeimidis and Smithson, 1999; Hemestra and Kusters, 2000). The content evaluation includes the purpose of the evaluation, criteria and measures. The process refers to the evaluation time and the tools and techniques applied mode. Finally, the context of evaluation focuses on understanding the internal and external characteristics of the organization such as culture, experience and the competitive environment. In this way, issues that affect the evaluation of investments in IS can be classified into these three elements. The following table shows some of his questions as documented in the literature.

Table 1 . Factors influencing the assessment practices of investment decisions

List of factors
Content
- Lack of agreement on the criteria and evaluation measures.
Process
- Difficulty in identifying the costs and benefits, - Difficult to quantify the costs and benefits, - Lack of appropriate evaluation techniques, - Lack of skills or knowledge of project evaluation.
Context
- Lack of organizational rules that support the evaluation and use of evaluation techniques ; - Non priority for the evaluation of IS ; - Lack of staff for the evaluation of IS ; - Lack of funding for the evaluation of IS ; - Lack of organizational structure to define responsibility of evaluation.

Source (Serafeimidis *and Smithson (2000), Love et al. (2006), Khalifa et al. (2001), Irani (2002) , Mirani and Lederer (1998), Farbey et al. (1995) , Seddon et al. (1999), Guba and Lincoln (1989), Walsham (1993), Irani and Love (2002), Mogollon and Raisinghani (2003)).*

According to the table, these issues can be summarized as follows: 1/ In terms of content of evaluation, the lack of agreement on the criteria and evaluation measures that limit in significant

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way the development of appropriate criteria for evaluating investments in AIS. 2/ In terms of the evaluation process, organizations today still seem unable to identify and quantify the costs and benefits of investments in AIS as well as the lack of appropriate skills and techniques for their investment initiatives. 3/ In terms of evaluation context, the majority of factors appear to be related to the lack of formal rules of evaluation, or lack of professional staff or funds necessary rules to effect killing evaluation activities.

Step 2: Generating a sample of items

This step is devoted to the generation of a sample of items to develop a multi-item instrument of measurement of "content", of "process" and of "context". The literature on these concepts and qualitative interviews provide enough relevant and favorable to the generation of information items.

From the first step of the paradigm of Churchill (1979), the definition of the field and built based on the work of Wang (2006) , Irani et al. (2006) , Irani and Love (2003) , Khalifa et al. (2001), Lin and Pervan (2001), Heemstra and Kusters (2000), Ballantine and Stray (1999) Farbey et al. (1999a), Fink (1998) and qualitative interviews (20 interviews), we generated a list of items to measure the context, the content and the process.

Table 2. List of items retained for the content, context and process

Items of content, context and process
The content
Conten1: Difficulty of choice of the appropriate techniques.
Conten2: Difficulty of application of the evaluation techniques.
Conten3: Lack of agreement on the criteria for evaluation and measurement.
The context :
Contex1: Lack of time
Contex2: Lack of organizational rules that support the evaluation and use of evaluation techniques.
Contex3: No priority evaluation of AIS.
Contex4: Evaluation is considered as an option rather than a necessity.
Contex5: Lack of staff for the evaluation of AIS.
Contex6: Lack of funding for the evaluation of AIS.
Contex7: Lack of organizational structure to define the evaluation responsibility.
Contex8: " Expend which is budgeted"; and then the evaluation is not necessary
Processes :
Proc1: Difficulty in identifying the costs and benefits with current evaluation methods.
Proc2: Difficulty of quantifying the costs and benefits with current evaluation methods.
Proc3: Lack of familiarity with evaluation techniques investment in AIS.
Proc4: A general lack of technical evaluation appropriate or methodology.

Steps 3 and 4: Data collection and purification of the measuring instrument

Measurement indicators obtained were subjected to a first test. Indeed, we have distributed in a preliminary investigation, a questionnaire to a sample of 120 companies. The data collected in this test to determine the nature and the number of dimensions of scale of the "content" of the "context" and of the "process". This test also provides the ability to test the psychometric and the internal consistency of the dimensions obtained for the following quality levels.For the measurement scale of the "context" before proceeding to an exploratory factor analysis (EFA),

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

we eliminated items Contex1, Contex4 contex8 because they presents a very low response rate. Thereafter, the EFA results allowed us to have a one-dimensional structure. This dimension represents 64.805% of the total variance explained.
In addition, we used the Cronbach's Alpha to measure the reliability of the measurement scale of the "context". The results obtained after purification yielded excellent values that exceed the minimum acceptance threshold of 0.6 (α with context = 0.857).

For the measurement scale of the "content", the results of the EFA allowed us to have the one-dimensional structure. This dimension represents 72.731% of the total variance explained.In addition, we used the Cronbach's Alpha to measure the reliability of the measurement scale of the "content". The results gave satisfactory values that exceed the minimum acceptance of 0.6 (α with content = 0.809).For the measurement scale of the "process" the results of the EFA allowed us to have a one-dimensional structure. This dimension represents 63.632% of the total variance explained.

In addition, we used the coefficient customer Cronbach's alpha to measure the reliability of the measurement scale of the "process". The results gave satisfactory values that exceed the minimum acceptance of 0.6 (α with process = 0.803).

Steps 5, 6, 7 and 8: Glue coast final data and estimation of reliability and validity
The second collection has achieved a second exploratory factor analysis followed by a confirmatory factor analysis on a second convenience sample of 269 companies. Finally, reliability and validity of the measurement scales were checked.The use of confirmatory factor analysis of the "Process" and the "context" to check the reliability and the adjustment of the measurement model obtained. Moreover, the estimation of the measurement model using the technique of Maximum Likelihood (ML) encourages us to verify normality and multinormality observed data. This precaution allows us to deal with the problems of violation of multinormality.

Table 3. Model fit Measurement Process

	Index	**Chi-square / df**	**GFI**	**AGFI**	**RMR**	**RMSEA**	**TLI**	**CFI**
Process	Worth	3,131	0,989	0,945	0,022	0,089	0,97 0	0,990
	P = 0,044							
Context	Worth	3,437	0,988	0,939	0,021	0,095	0,982	0,994
	P = 0.032							

The measurement model of the "Process" has a good fit (Table 4). Indeed, the chi-square normalized gives a ratio slightly higher than 3 and less than 5, the GFI, the AGFI, NFI and CFI converge to the value of 1. Finally, the RMR and RMSEA are less than 0.1 and very close to 0. Similarly, the measurement model of the "context" has a good fit (Table 5). Indeed, the chi-square normalized gives a less than 3 ratio, GFI, the AGFI, NFI and CFI converge to the value of 1. Finally, the RMR and RMSEA are less than 0.1 and very close to 0.

The scale remains to validate consists of three items. Factors of three items are called just identified (Bagozzi and Heatherton, 1994), which makes impossible the confirmatory factor analysis.

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Table 4. The contributions of items Content

Items	Contributions of items
Conten1	0, 934
Conten2	0, 785
Conten3	0, 509

The values of all indicators are acceptable. Thus all loadings are superior above the selected threshold except the value of the item Conten3 which approximates the acceptable limits.The reliability of the variables is measured by the Rho of Joreskog of which is an indicator of reliability. Unlike Cronbach's Alpha, the Rho Joreskog is independent of the number of items in the scale. It thus overcomes the weakness of the Cronbach's alpha in this area (Roussel et al., 2002). A threshold of Rhô is superior than 0.7 or 0.8 according to the authors (Fornell and Larcker, l98l) is sought. The following table presents the results of reliability test.

Table 5. Reliability of moderating variables

Factors	Rho Jöreskog
Content	0, 799
Context	0, 898
Process	0, 823

The facial validity or content validity is based on the judgment of the investigator and experts, and is estimated qualitatively. This is to verify that the items contained in the scale capture well the studied concept. The wording of the items should accurately reflect the concept studied.
Convergent validity assesses the internal consistency and checks whether each indicator shares more variance with its built with the error term. Convergent validity is satisfied when the variance shared between a construct and its measurement items is greater than 0.5 (Fornell and Larcker, 1981). Convergent validity is checked, the rho convergent validity indices are all higher than 0.5.

Table 6 . Convergent validity of the model variables

Factors	Rho convergent validity
Content	0, 583
Context	0, 696
Process	0, 548

Discriminant validity is satisfied if the shared variance between the constructs is less than the variance shared between the constructs and their measurement (Fornell and Larcker, 1981). The convergent validity of each construct should be superior than the squared correlations with various other constructs. Table 8 presents the results of correlations of the square built by comparing it with the Convergent validity is shown diagonally.

Table 7 . Convergent and discriminant validity of the model variables

Index	Content	Context	Process
Content	**0,583**		
Context	0,0023	**0,696**	
Process	0,0265	0,030	**0.548**

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

METHODOLOGY

This article aims to present the impact of contextual factors on ex-post evaluation of AIS investments. Data are analyzed empirically whether the content, context and process influences or not the relationship between AIS investment and business performance. In this study, companies which are using the AIS in their activities were chosen as the study population. Analysis was performed using data that has been obtained from companies with a questionnaire in 2011 and 2012. To measure investments in AIS, this study adopted a scale of Weill (1992) evaluated the investment in AIS as a percentage of total sales. For reasons of confidentiality and difficulties in quantifying these budgets for the companies in the sample, scales metric intervals were used.
[0-5% [; [5% -10% [, [10% -15% [, [15% -20% [, More than 20%

For the performance of the company, the measurement scale consisted of five items designed to measure the perceptions of the company about the impact of AIS investments on firm performance (Powell and Dent-Micallef, 1997 Paopun, 2000). These elements are1/productivity, 2/sales trends, 3/competitive position, 4/profitability and 5/overall performance. Respondents were asked the extent that investments in AIS achieve their goals. The 7-point Likert scale where 1 = Strongly Disagree, 2 = Disagree, 3 = somewhat disagree, 4 = neutral, 5 = somewhat agree, 6 = agree and 7 = strongly agree, was used for the five elements.

However, for the moderating variables, we created a scale and asked respondents to rate on a Likert scale of seven points (1: Most inhibitor, ... , 7: Lowest inhibitor).The questionnaires were applied to 300 companies. Among them, however, only 17 questionnaires could not be used for the analysis because of incomplete response of respondents. After that, 14 questionnaires were also excluded from the analysis because of extreme values. Therefore, calculations were based on 269 questionnaires. The data collected from questionnaires were seized with SPSS 17.0 and Amos 18.0 software.

ANALYSIS OF RESULTS

Factor analysis

The exploratory analysis was conducted in SPSS17. The dimensionality of the scales was assessed by a principal component analysis (PCA) with varimax rotation. Measuring instruments have good psychometric properties. All items selected are generally good factor contributions. Reliability and internal consistency of the items constituting a single dimension were evaluated based on Cronbach's alpha. All variables in the model have good Cronbach's alpha coefficients.

In a second phase, a confirmatory factor analysis was performed in 18 Amos to test the discriminant and convergent validity of the constructs. After this step, the analysis of construct validity yield acceptable results. The fit indices that can be considered good, given the complexity of the model and the sample size relatively small (Roussel et al., 2002). The first index (Chi-2/ddl=1,499) satisfies the recommended threshold. The RMSEA (0,043) is less than the threshold limit of 0,08. The CFI (0,978) and TLI (0,975) are superior to the critical threshold of 0.9. The GFI (0,916) and AGFI (0,891) are satisfying. The adjustment of the measurement

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model is therefore considered satisfactory (GFI = 0,916; AGFI = 0,891; CFI = 0,978; TLI = 0,975; RMSEA = 0,043; RMR= 0,045).

Presentation of the model checking and causal the assumption of causality :

The causal model of our research provides a good fit. Indeed, the absolute index, incremental and parsimony shown in Table 9 satisfy the empirical conditions generally recommended in previous research.

Table 8. Adjustment of the causal model

Index	Chi-deux/ddl	GFI	AGFI	RMR	RMSEA	TLI	CFI
Worth	1, 658	0,960	0, 935	0,024	0, 050	0,988	0,991

At this level, the causality of this model allows the validation of the hypothesis H1 of our research work. Indeed, the table 10 shows that all causal links are significant at the 5% level.

Table 9. Significance of causality of the causal model

Causation			**Student test**	**P**	**Estimate**	**Validation of assumptions**
H1	AIS investment	→ Business Performance	5,804	0,000 *	0, 368	Accepted
* P <0.05 (Significant)						

Testing moderating variables

To highlight the role of the moderator of the "content", "process" and "context" of the relationship between AIS investment and business performance, we conduct recommended multi groups such analysis by Baron and Kenny (1986) and Ho (2006).

Testing the moderating variable "content"

The implementation of multi groups' analysis proceeds in three steps. At the first step, we identify the groups by the classification of *Median Split.* The first group consists of companies with the contents of the evaluation less inhibitory (group 1, n1=138) and the second group consists of companies that have the highest content of inhibitor (Group 2, n2=131) assessment (Table 11).

Table 10. Number of observations in each class (content)

Classes	**Number**	**Percentage**
1 : Lowest inhibitor	138	51.30%
2 : Most inhibitor	131	48.70%
Total	269	100%

At the last step, we carry out a confirmatory analysis where we compare the two chi-two free model (model where a parameter is not equal between the two groups) to a chi-two constrained model (model where all parameters are equal between the groups). If the difference is significant chi-square between the two models, we conclude that the statute is moderator. Finally, we examine the regression coefficients and significance of the link and the standardized coefficients to check the direction of the influence of the moderating variable.

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Table 11. Test of difference Chi2 between the free model and the constrained model

Test Of Difference From Chi-Two			Free Model			Model Constrained		
Chi-two	**DDL**	**P**	**Chi-square**	**DDL**	**P**	**Chi-two**	**DDL**	**P**
20,101	8	0,010	100.762	68	0,006	120.862	76	0.001

Table (12) shows that the difference test of chi-square is significant at the 5% risk. In other words, the relationship between AIS investments and business performance depends on "content" ex-post evaluation of IT investments. Therefore, the hypothesis H2 is accepted. Thereby we can conclude that the variable "content" has a moderating effect in the impact of AIS investment on business performance.

In the final step, since the difference test of chi-square is significant, we will examine the nature and intensity of the moderating role of "content" at the impact of AIS investment on business performance. The results are obtained by comparing corresponding to each group coefficients.

Table 12. Effect moderator "content" the relationship Investments in AIS and business performance (multi-group analysis)

			Lowest inhibitor group			Most inhibitor group		
			Standardized coefficients	**CR**	**P**	**Standardized coefficients**	**CR**	**P**
Perf	←	Invest	0,451	5,088	0,000	0,263	2,850	0,004

Comparing the standardized coefficient of each business groups (0,263 <0,451) we deduce that the higher the evaluation content is less inhibitory over the impact of IT investment on business performance will be high. These results confirm the moderator role of the "content". Thus, the hypothesis ***H2*** is enabled.

Testing the moderating variable "context"

Based on median, we built a first step, two groups of cases. The first group consists of companies with an organizational context the least inhibitor (group 1, n1=147) and the second group consists of companies that have an organizational context the most inhibitor (group2, n2=122) (Table 14).

Table 13. Number of observations in each class (context)

Classes	**Number**	**Percentage**
1 : Lowest inhibitor	147	54,64%
2 : Most inhibitor	122	45,36%
Total	269	100%

We carry a confirmatory analysis where we compare the chi- two free model (model where a parameter is not equal between the two groups) to a chi-two constrained model (model where all parameters are equal between the two groups.) Table 9 shows that the difference test of chi-square is significant at the 5% risk. In other words, the relationship between IT investments and business performance depends on "context" ex-post evaluation of IT investments.

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Table 14. Test of difference Chi2 between the free model and the constrained model

Test Of Difference From Chi-Two			Free Model			Model Constrained		
Chi-square	**DDL**	**P**	**Chi-square**	**DDL**	**P**	**Chi-square**	**DDL**	**P**
14,416	8	0,037	111,922	68	0,001	126,338	76	0,000

Table 16 below shows the results for the two groups. In addition, if we measure the nature and strength of relationships vary from one group to another.

Table 15. Effect moderator "context" the relationship AIS investments and business performance (multi-group analysis)

			Lowest inhibitor group			Most inhibitor group		
			Standardized coefficients	**CR**	**P**	**Standardized coefficients**	**CR**	**P**
Perf		AIS	0,443	5,066	0,000	0,252	2,657	0,008

Furthermore, the results show that the impact of AIS investments on firm performance is higher if the organizational context is less inhibitory. In other words, unless the context of evaluation is an inhibitor, the greater the impact of AIS investment on technological performance is high. Thus, we can conclude that the content positively moderates the impact of IT investment on business performance. Thus, the ***H3*** hypothesis is validated.

Testing the moderating variable "process"

We performed a principal component analysis and then we recorded the factor scores of companies. Groups are formed on the basis of the median. This method allows you to share the variable "process" into two groups, the first group consists of companies with the evaluation process unless the inhibitor and the second group of companies with the most inhibitory evaluation process. The first group consists of companies that process evaluation least inhibitor (group1, n1=203) and the second group consists of companies that process evaluation of the most inhibitor (group2, n2 = 66) (Table 17).

Table 16. Number of observations in each class (Process)

Classes	**Number**	**Percentage**
1 : Lowest inhibitor	203	75,46%
2 : Most inhibitor	66	24,54%
Total	269	100%

To test the moderating role of "process", we have used the multi-group analysis to complete invariance (Amos 8). Calculating the difference test Chi-square allows determining a probability level we need to compare the recommended minimum level of 5%.

Table 17. Test of difference Chi2 between the free model and the constrained model

Test Of Difference From Chi-Two			Free Model			Model Constrained		
Chi-square	**DDL**	**P**	**Chi-square**	**DDL**	**P**	**Chi-square**	**DDL**	**P**
9,435	8	0,029	94,182	68	0,020	103,617	76	0,019

Table 18 shows that the difference test of chi-square is significant at the 5% risk. In other words, the relationship between AIS investments and business performance depends on the ex-post evaluation of AIS investment process.

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Since the test of chi-square difference is significant, we will examine the nature and intensity of the moderating role of the "process" at the impact of AIS investment on companies performance. The results are obtained by comparing corresponding to each group coefficients.

Table 18. Effect moderator of "process" on the relationship AIS investments and business performance (Multi-group analysis)

			Lowest inhibitor group			Most inhibitor group		
			Standardized coefficients	**CR**	**P**	**Standardized coefficients**	**CR**	**P**
Perf	←	Invest	0,375	4,841	0,000	0,357	2,874	0,00 4

Table 19 allows us to see that the impact of AIS investment on business performance is positive and significant for both groups. Moreover, the results show that the impact of AIS investment on performance the company is higher in the case where the process is less inhibitory. In other words, unless the process Evaluation is an inhibitor, the greater the impact of AIS investments on firm performance is high. Thus, we can conclude that "process" positively moderates the impact of AIS investment on business performance. The hypothesis ***H4*** is validated.

DISCUSSION OF RESULTS

AIS investments have a positive and significant impact on business performance. So, companies that invest more in AIS will have higher performance. This is consistent with previous work (Huang, 2007; Bazaee, 2010; Kobelsky et al., 2008; Lee and Bose, 2002; Kivijarvi and Saarinen, 1995; Mahmood and Mann, 1993).The results of our research also showed that the "content" represents relevant segmentation criteria. Indeed, the assessment content may vary based on companies function. Consequently, we could distinguish between the companies with «the lowest inhibitor content» and with « the most inhibitor content ».

In this regard, companies with the content of the less inhibitory evaluation have less difficulty in the selection and application of ex-post evaluation of technical AIS investments. Instead companies with content evaluation as inhibitor have more difficulty in the selection, implementation and agreement on the ex-post evaluation of technical AIS investments.

Thus, companies that choose and apply the best methods of evaluating AIS investments are those that have a higher performance. As a result, the content of evaluation is an important catalyst for businesses because his intervention makes the performance of now more sensitive to AIS investments. These results are entirely consistent with those of Serafeimidis and Smithson (2000), Love et al. (2006).

Similarly, the results of this research show that "context evaluation" represents a critical variable because it deeply affects the relationship between AIS investments and business performance. In addition, our result agrees with those of Avgerou (2001), Trauth (2001), Willcocks (1992), Irani and Love (2002) and Irani et al. (2006). The context of assessment refers to the organizational context and internal environmental in which it is integrated evaluation of IS investments. Thus, companies have rules and an organizational structure that facilitate the evaluation of AIS investments, so they hire the staff and funds needed for this evaluation have a higher performance. While companies have a structure and organizational rules and a lack of staff and funding for the ex-post inhibit the performance of these companies.

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The review of the literature, we found that the evaluation process is a critical variable because it greatly determines how the evaluation. The use of this variable in the context of the evaluation of AIS investments is an opportunity and makes it possible to understand the difference in performance in Tunisian companies. Our results are consistent with those of Seddon et al. (1999), DeLone and McLean (1992, 2003), Mogollon and Raisinghani (2003) and Love et al. (2006).
Companies that have more difficulties to identify and quantify the costs and benefits, as well as difficulties familiarity with these techniques are those that have the lowest performance.

IMPLICATION TO RESEARCH AND PRACTICE

In conclusion, based on the results, it was obvious that AIS investments have impact on business performance. Similarly, contextual factors play a crucial role in the success of the ex-post evaluation and more generally in the success of AIS investments to maximize profits in the business. Thus, companies that want to succeed in their AIS investments must take into account these factors. First, companies must be able to choose the valuation techniques and especially to apply these techniques and methods for AIS investment and be updated with the new techniques and methods of assessment. Then, organizations must be aware of the importance of ex-post evaluation of AIS investments and must be a priority and help to implement organizational rules that support the assessment and evaluation techniques, as well as the financial and human resources necessary for the success of this evaluation. Finally, companies must be able to identify and quantify the costs and benefits, and overcome the problems of familiarity with the techniques and methods of evaluation.

CONCLUSION

This study presents an effort thorough and systematic to examine the role of contextual factors CCP in the ex-post evaluation of AIS investments. The results show a positive and significant relationship between AIS investments and business performance. This one shows the role of this kind of investment in improving business performance through the creation of a competitive advantage, improves productivity and corporate profitability and improved sales business. In fact, the study found the importance of the moderating role of the CCP. Initially, the companies' with the lowest inhibitor content have the highest performance. In other words, companies that choose and apply the best methods of evaluating of AIS investments are those that have a higher performance. Second, companies with the lowest inhibitor context evaluation have the highest performance. So companies have rules and an organizational structure that support the evaluation of AIS investments, so they hire the staff and funding for this evaluation have a higher performance. Finally, the companies' with the lowest inhibitor process have the highest performance. This shows that these companies have more difficulties to identify and quantify the costs and benefits, as well as difficulties are familiar with these techniques are those which had the lowest performance.

FUTURE RESEARCH

These results are dependent on conditions and the type of data used the quality of representation and activity of the sample. The research we have just done is far from exhausting the questions that arise about the impact of investments in AIS on business performance and the role of CCP in this relationship, then extensions of this work are possible. The first is that this study can be

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improved and extended to a larger sample, which improves the quality of results and would test their validity. The second is to conduct a qualitative study of consultants working in AIS publishers that provide access to new or additional data to improve the quality of the results and to better understand the effect of contextual factors, CCP, on the ex-post evaluation of AIS investments.

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