

Evaluation of ERP Acceptance from the UTAUT Model: A Qualitative View in a Multiple Case Study

Avaliação da Aceitação do ERP a partir do Modelo UTAUT: Uma Visão Qualitativa em um Estudo de Caso Múltiplo

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Abstract

One of the types of information systems that enables the integration of business activities and processes is the Integrated Management System (IMS)/ the Enterprise Resource Planning (ERP). This study aims to evaluate the acceptance of an information system use by members of four organizations. The question of the research is: what are the outstanding elements in ERP acceptance considering the perspective of UTAUT evaluation model? The importance of the research is in the prevention of business risks when implementing technologies. The UTAUT evaluation model is a synthesis of several theoretical models and it is widely used due to its characteristics of user perception evaluation, the real system users. The model verifies four determining factors and four moderating conditions of acceptance and intention of Information Technology use. It is a descriptive and qualitative research and it uses the multiple case study method. The analyses showed unanimity regarding the concern about the lack of trust in the users who feed the system and consequently in the generated information. There was a productivity increase in companies where partial implementation of the system occurred. In contrast, there was productivity increase in companies with full implementation of the system. In companies where the system was of optional use, those who did it gained empathy from managers. Most users were dissatisfied with the usability of the systems, as they were not considered appropriate to the business types in which they were used.

Keywords: User acceptance of information technology. ERP. UTAUT Model. Multiple case study. Integrated Management System.

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Resumo

Um dos tipos de sistema de informação que possibilita a integração das atividades e processos do negócio é o Sistema Integrado de Gestão/Enterprise Resource Planning – ERP. O objetivo desta pesquisa é avaliar a aceitação do emprego de um sistema de informações por integrantes de quatro organizações. A questão de pesquisa é: quais elementos se destacam na aceitação de ERPs tendo em vista a perspectiva do modelo UTAUT de avaliação? A importância da pesquisa está na prevenção de riscos para os negócios com a implantação de tecnologias. O modelo UTAUT de avaliação é uma síntese de vários modelos teóricos e é amplamente utilizado devido à sua característica de avaliação da percepção dos usuários, os reais utilizadores dos sistemas. O modelo verifica quatro fatores determinantes e quatro condições moderadoras da aceitação e intenção de uso da Tecnologia da Informação. Esta pesquisa é descritiva e qualitativa e utiliza o método de estudo de caso múltiplo. As análises evidenciaram unanimidade referente à preocupação com a falta de confiança nos usuários que alimentam o sistema e por consequência nas informações geradas. Nas empresas em que ocorreu a implantação parcial do sistema, houve queda da produtividade. Em contrapartida, houve aumento de produtividade nas empresas com implantação total do sistema. Em empresas nas quais o sistema era de uso opcional, quem o fazia ganhava empatia por parte dos gestores. A maior parte dos usuários mostraram-se insatisfeitos com a usabilidade dos sistemas, pois não eram considerados adequados aos tipos empresariais em que eram utilizados.

Palavras-Chave: Aceitação de uso de tecnologia da informação. ERP. Modelo UTAUT. Estudo de caso múltiplo. Sistemas Integrados de Gestão.

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1 Introduction

The entrepreneurial development is leveraged by the informational demand growth and consequently by the data storage and analysis by means of information systems (Reuben, Obura, & Oginda, 2019). The companies present functional areas or organizational processes with specific needs both for their best performance and for their information systems (Reuben, Obura, & Oginda, 2019; SJ Shim & MK Shim, 2019). One of the types of information system which makes the integration of the business activities and processes possible is the Integrated Management System – IMS: Enterprise Resource Planning – *ERP* (Reuben, Obura, & Oginda, 2019).

As to the implementation and adoption of this type of system, the need for caution to minimize the implementation failure risk is emphasized, as it often has a high required investment (Reuben, Obura, & Oginda, 2019;

Venkatesh, Morris, Davis, & Davis, 2003). Thus, the present research is dedicated to the study of acceptance details of ERP system implementation in four companies. For this purpose, an evaluation model which has already been validated was used, the UTAUT one (Unified Theory of Acceptance and Use of Technology).

The importance of this kind of research lies in the business risk prevention for implementing technologies, as the UTAUT evaluation model verifies four determining factors and four moderating conditions of acceptance and intention of Information Technology use by the persons of the organizations. The determining factors influence the intention and the acceptance of use directly, which are: the performance expectancy; the effort expectancy for the use; social influence; and the facilitating conditions. However, the moderating conditions influence the intention and the acceptance of use indirectly (Venkatesh *et al.*, 2003).

The problem which has motivated this study is: what are the outstanding elements in the acceptance of integrated management systems//Enterprise Resource Planning in organizations by considering the perspective of the UTAUT model? The main target is to evaluate the acceptance of integrated management systems//Enterprise Resource Planning and their reflexes in four cases of separate organizations by using the UTAUT model.

In the following section, the theoretical framework which reviews the Integrated Management System (IMS)//Enterprise Resource Planning (ERP) and the acceptance and the use of an information system is presented. In the third section, the methodological procedures used in the study are described. Furthermore, in the fourth section, the collected information was analysed by means of interviews based on the UTAUT model, And, in section five, the final considerations on the obtained results and also the recommendations for further studies are presented.

2 Theoretical Framework

2.1 ERP – Enterprise Resource Planning

The information systems have the objective of distributing information in order to support the decision making (Reuben, Obura & Oginda, 2019). To understand how a system is used, not only the technological dimension should be considered but also this dimension together with the human and organizational ones. The human dimension presents itself as a relevant component as persons use the information processed by the system (Laudon & Laudon, 2010).

The ERP is a kind of system which enables the organizations to integrate business processes by providing support to relevant information of all organizational levels (Hustad & Olsen, 2013; Magal & Word 2017; Reuben, Obura & Oginda, 2019). This system stands out for its objective of integrating the company from its modules (Al Majali, Masa'deh, & Tarhini, 2015). These systems are “generally divided into modules, that represent sets of functions which normally deal with one or more departments of the company” (Zwicker & Souza, 2003, p. 64).

Due to this integration characteristic, the ERP systems are seen as organizational problem solving, by eliminating operation redundancy and by automating processes (Chandrakumar & Parthasarathy, 2016; Françoise, Bourgault, & Pellerin, 2009; Haddara & Elragal, 2013; Reuben, Obura & Oginda, 2019). The this system benefits can only be reached from the ERP implementation and real adoption (use) by the whole organization (Rezvani, Khosravi & Dong, 2017). In this sense, the importance of the management process in a system adoption which involves the company as a whole stands out (Chandrakumar & Parthasarathy, 2016; Robbins, 2007; Schniederjans & Yadav, 2013).

2.2 Acceptance of an Information System – UTAUT Model

The acceptance of information technology has been studied due to the amount invested by organizations and the voluntariness of a proper return

of such investment through the use of the systems by their employees (Dwivedi, Rana, Jeyaraj, Clement, & Williams, 2019; Bhattacharjee & Lin, 2015). Among the acceptance evaluation methods and the use of available and validated technology information is the UTAUT one, which was developed from unifying several theoretical models which preceded it and it is largely used for identifying human dimension characteristics which influence whether or not to adopt an information technology in their activities (Dwivedi *et al.*, 2019; Venkatesh *et al.* 2003).

The UTAUT has four determining factors and four moderating conditions in its model. The determining factors are: performance expectancy, effort expectancy for the use, social influence, and the facilitating conditions. And as to the moderating conditions of acceptance and intention of Information Technology use, they are as follows: gender, age, experience and the voluntariness of use by the user. The relation among these factors and the Information Technology acceptance and the intention of use by the system user is in Figure 1.

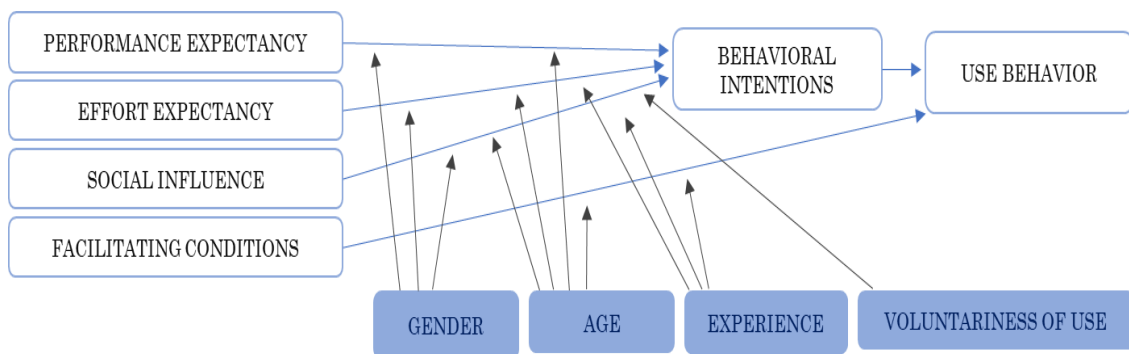


Figure 1. Unified Model of Acceptance and Information Technology Use
Source: adapted from Venkatesh *et al.* (2003).

In the UTAUT model, some conditions influence the factors and act indirectly from the information technology use intention in organizations. These factors, according to the proposed model, influence the main factors, determining ones of intention and technology use. One can say that indirect

factors (gender, age, experience and voluntariness of use) moderate or modulate the other factors and, therefore, are determined as moderating conditions (Venkatesh *et al.* 2003). With regard to the determining factors, the definitions are in Figure 2.

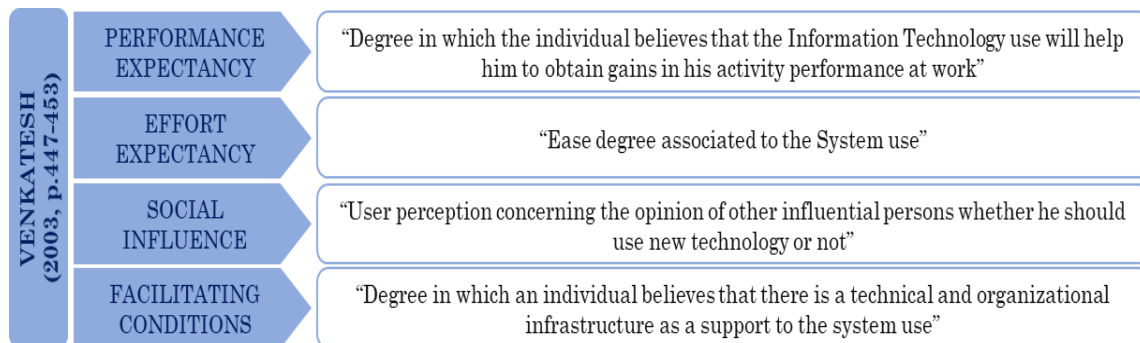


Figure 2. Definition of the UTAUT determining factors
Source: adapted from Venkatesh *et al.* (2003).

There was a study from the UTAUT to evaluate the factors which determine the acceptance of ERP use training among business students from India during the academic term (Chauhan & Jaiswal, 2016). The authors were able to measure that “on-line access convenience, information technology innovation, performance expectancy, effort expectancy and facilitating conditions act as determining factors of *ERP software* training acceptance, whereas social influence does not lead to its acceptance” (Chauhan & Jaiswal, 2016, p. 261), partially confirming the UTAUT model.

3 Method

The present research is characterized as a descriptive one concerning the aim, and as a qualitative and analytical case study concerning the procedures (Flick, 2008). It is descriptive due to the use of standardized data collection techniques, aiming at the description of characteristics of a certain population or phenomenon (Flick, 2008). The chosen methodological procedure is the study of a multiple case for being adequate to situations in which their perception related to the research issue is emphasized through

“a set of cases with exemplary results concerning some evaluation questions” (Yin, 2005, p. 65).

This research was carried out in four organizations and it evaluates the acceptance of an ERP system and its reflexes in the company by means of a UTAUT model use. For such purpose, a data collection guide which unfolds content blocks in topics and the latter in questionings was developed. The block content follows the UTAUT model (Venkatesh *et al.*, 2003), presented in item 2.2. The research was carried out by using interview with open questions, in which the respondents are required to offer their own answers.

	COMPANY 01	COMPANY 02	COMPANY 03	COMPANY 04
BUSINESS TYPE	Small Business	Public Company	Small Business	Corporate Group
AREA	Agribusiness Spare Parts	-	Furniture Distribution	Several Operational Segments
LOCATION	Passo Fundo/RS	South Region	Porto Alegre/RS	Porto Alegre/RS
SECTOR	Accounting	Accounting	Commercial	Accounting
RESPONDENTS	3	6	4	5

Figure 3. Studied cases

The analysis units are professionals subjected to the ERP system implementation in their company and who were identified from convenience, data opening for research and closeness to the analysed companies. Different kinds of companies and entrepreneurial areas were chosen in order to enrich the obtained collection and information (Figure 3).

The answers obtained from the interviews were used in the qualitative data analysis. The audio files were transcribed, read and analysed according to the content analysis technique. Thus, after the interview transcripts, the content modalizers used by the respondents in order to characterize the content blocks according to the UTAUT model were identified and the significant descriptions which represent the respondents' opinions on this were selected

4 Result Discussion

4.1 Acceptance and IT Use – Moderating Conditions

Regarding to the moderating conditions of IT acceptance and use in the participating companies, the following criteria were analysed: gender, age, previous experience and voluntariness of use. In company 01, it was identified that all the respondents were male, one of them over 60 years old, the other two aged 30 to 40 years. Regarding to company 02, three male and three female employees between 32 and 63 years old were chosen. And, in Company 03, the four collaborators from its commercial area were interviewed, two men and two women between 27 and 30 years old. Regarding to Company 04, five respondents from the company accounting area were randomly chosen, all male ones, between 25 and 50 years. Figure 5 shows a summary of the moderating conditions.

MODERATING CONDITIONS	COMPANY 01	COMPANY 02	COMPANY 03	COMPANY 04
GENDER	100% male	50% female 50% male	50% female 50% male	100% male
AGE	30-60 years	32-63 years	27-30 years	25-50 years
PREVIOUS EXPERIENCE	3 respondents	2 respondents	NI	NI
VOLUNTARINESS OF USE	optional	compulsory	compulsory	compulsory

Figure 4. Acceptance and IT Use: Moderating Conditions

As to the voluntariness of use, Company 01 was the only one to present some divergence. In this company, the oldest respondent was reluctant to accept the system use, another one thought it was extremely important and the last one said that its implementation was “complicated”, although by considering it as a good idea. All the others were in favor of the system implementation, as they expected greater agility and ease in the accomplishment of their routine activities.

Age proved to be an important factor in the system implementation resistance, as well as the inexperience in management systems. Concerning

gender, no relevant differences, which could be applied to this issue, were observed. Hence, it can be pointed out that the technology non-acceptance causes may stem from individual and organizational aspects and not necessarily from the developed system (Robbins, 2007).

4.2 Acceptance and IT use – Performance Expectancy

The reliability aspect was verified in three out of the four participating companies (01, 02 and 04). In Company01, it was identified that the system was quite reliable, but its feeding is not always correctly performed by the user, causing errors and preventing integration with accounting, as a company partner states: “the only one who is going to provide the system with reliability is the person who is managing it”.

In Company 02, over 80% of the respondents is concerned about the system, due to the user bad feeding and only two of them believed that the information reliability would increase with the system implementation. Indeed, information had to be reviewed and corrected, due to the difficulty of the system correct feeding which often included incorrect information (generally caused by employees from other areas). Nonetheless, an outstanding aspect concerning the fact that the system allows access restriction according to the environment and operations and also the transaction history control was reported, being able to track the user performance and to improve the information quality.

In Company 04, the respondents believed that the ERP would bring “much safer information”, provided that “the system reliability depends a great deal on whom enters the information”. After the implementation, one of the respondents said that the system reliability was low in the beginning, due to the lack of attention and accuracy in information feeding from the several sectors, which used it. Another one mentioned that he/she does not trust the system information, as it is not always “consonant with reality”. Finally, it is worth pointing out that for being an entrepreneurial group, in which implementation did not occur concomitantly, the reliability pointed

out by the respondents varied according to the level of system maturity, i.e., the ones who were using the system for a longer period of time have higher trust levels.

In the three evaluated companies, the reliability aspect was shaken by the inefficiency perception of those who were responsible for feeding the system with information. Such positioning was present both before the implementation, through the expectancy reports, and afterwards through the incorrect information reports which were found in the system.

The productivity aspect was perceived in the four participating companies, evaluated by the perception about the fulfillment of daily tasks, agility in the accomplishment of tasks and perceived performance increase. In Company 01, the expectancy was that the system would facilitate and simply the fulfillment of daily tasks, allowing more time for the users to perform other activities and thus ensure the productivity improvement (“to accelerate in order to waste less time”). In practice, the system met the expectations and provided greater automation to the company, positively influencing productivity and the fulfillment of daily tasks.

In Company 02, the respondents mentioned expectations concerning greater speed in their routine performances, gaining time in task accomplishment and qualifying their work. They also had in mind that the system use would generate development in accounting and removal of “blue-collar work”. The system parametrization was criticized, as it was still being performed when the system in fact started the production phase. The chosen ERP did not perfectly meet the company needs, being more directed to other kinds of businesses. In addition, the system *layout* was considered complex, jeopardizing the user agility. Only some functions allowed the speed of tasks.

In Company 03, there was simplification of the activities after the system implementation, making it possible “to optimize the user time a great deal” and to obtain greater information control and reduction in the processes, supporting the business strategic planning. After the

implementation, one of the respondents said that “the system would not help him” and that it did not aggregate anything to his tasks (only to the company as a whole), occurring insecurity and dissatisfaction feeling regarding the system operation in the company, “specially concerning the management performed by the company up to the moment”.

Company 04 respondents presented expectation of productivity increase and of greater information control. The respondents confirmed the expectation, by affirming that in fact the system automated the information, due to new available resources and to work reduction and productivity increase, in addition to improvement possibilities in these issues.

As to the productivity, there was no consensus among the companies. Both in Company 02 and in Company 03, the reports were of dissatisfaction concerning the system complexity and the perceived utility, jeopardizing the activity accomplishment. On the other hand, Company 01 and 04 participants confirmed their expectations of productivity increase. An outstanding aspect in this issue is the strength of the reports, being more extreme when the expectation is not reached (Companies 02 and 03) than when it is (Companies 01 and 04).

The improvement of the activities was perceived in the four companies, identified as: general improvement of work, utility, growth, simplification of activities and benefits from the system. In Company 01, the respondents pointed out the expectation concerning the time reduction for task accomplishment, by stating “spare time to dedicate to another sector” and also “aid in information of values”, obtaining a more comprehensive internal control.

In Company 02, it was expected to be more useful than the current system and thus to eliminate the need for using other tools (such as *excel*, for instance). Only one respondent believed that the system would not bring any “progresses” for being “more difficult than the host system”. In practice, the system was “far from the expected”, as the *excel* did not cease to be used due to the fact that the system does not perform some operations on its own.

In Company 03, the respondents' expectation related to the new system was that of better results and of tools which stimulated the professional growth. Such expectation can not be confirmed, as the employees feel insecure and dissatisfied regarding the system in the company; in addition, the way the system is used today provides no professional development. There would merely be activity simplification after the system is fully used and parametrized.

At last, in Company 04, the respondents believed that the information quality would increase and there would be time reduction for establishing results. Some respondents also believed that the new system would meet the need of information support which the current one "left something to be desired". Most of the respondents informed that "they would not count on other persons to perform tasks any longer", as their work depended on collecting information which would be available in an automated way by using the system, and all these expectations were in fact confirmed. Only one of them stated that he/she did have "an effective work reduction" yet on account of the "implementation problems".

		COMPANY 01	COMPANY 02	COMPANY 03	COMPANY 04
PERFORMANCE EXPECTANCY	RELIABILITY	<ul style="list-style-type: none"> - Quite reliable system - Information feeding is not correctly performed by users 	<ul style="list-style-type: none"> - Suspicion concerning system reliability - Information had to be reviewed and corrected - Access restriction of unauthorized person 	NI	<ul style="list-style-type: none"> - Expectation of much safer information - The system information is not always trustworthy concerning reality - The ones who used the system longer had higher levels of trust
	PRODUCTIVITY	<ul style="list-style-type: none"> - Expectancy that the company would facilitate and simplify the daily activity fulfillment - System provided greater automation to the company 	<ul style="list-style-type: none"> - Expectancy of greater speed in routine achievements - System parametrization was criticized - System did not meet the company needs well; - System with complex layout, harming the user agility 	<ul style="list-style-type: none"> - Activity simplification; - Greater information control - Process reduction - Insecurity and dissatisfaction feeling concerning the system operation 	<ul style="list-style-type: none"> - Expectancy of productivity increase - Expectancy of greater information control - System automated information - Work reduction and productivity increase
	ACTIVITY IMPROVEMENT	<ul style="list-style-type: none"> - Expectancy of time reduction for task accomplishment - More comprehensive internal control 	<ul style="list-style-type: none"> - Expectancy of greater utility - System does not perform some operations on its own 	<ul style="list-style-type: none"> - Expectancy of better results - Expectancy of professional growth stimulus; - Employees feel insecure and dissatisfied - There is no professional improvement 	<ul style="list-style-type: none"> - Expectancy of information quality increase - Expectancy of time reduction in the result calculation - Sufficient information

Figure 5. Performance Expectancy

As it is related to the productivity issue, the improvement in the activities was divided into two groups: met expectations (Companies 01 and 04) and unmet ones (Companies 02 and 03). It was possible to perceive that the dissatisfaction report carries a stronger figure of speech (“more difficult”, “far from the expected”) than the report of expectation fulfillment (Figure 5).

4.3 Acceptance and IT Use – Effort Expectancy

The ease of use was found in the four companies, addressing elements such as simplicity of use, difficulty in learning, agility and usability. In Company 01, the respondents understood that the system learning “would not be easy”, but as “information goes very fast” nowadays, adaptation could not take long for the systems are, in a certain way, standardized. Regarding the simplicity of use, the belief was that “it would not be easy to use”, but it would over time. After the implementation, it is pointed out the oldest respondent thought that “it was difficult in the beginning”, to the detriment of the younger ones who saw no difficulty in the system handling, by mentioning that their learning “was easy and simple”. They understood that “the chosen system is very easy to use” and that there was simplicity in obtaining the information at the moment when they wanted to. The respondents reported problems related to the system financial module, by saying that “there is no one who can deal” with it.

In Company 02, the expectation was that the system offered a simple and clear interaction. Due to the high system fame, it was considered by some as “the best of all worlds”; on the other hand, there were those who believed that the interaction would be complicated due to the quantity of offered resources. As to the agility in the system use, some understood that it would be really fast and others that it would not be due to the complexity. The impression concerning the ease of the system use was that “it would not be easy”. In practice, the limitations were known early in the testing phase, frustrating the expectations of a “perfect system”. The standard version had

to go through various customizations in order to suit the company reality and some respondents pointed out that “the ERP should be more intuitive”. The impression concerning the agility in the system use was confirmed, and the excess of information jeopardized its use.

Many difficulties became evident in Company 03, which demonstrates a non-achievement of expectation concerning the system. The respondents reported that “there is a great deal of loose information in the system, making its browsing difficult”. The system operation is not clear and the employees had “little time to adapt” to the new functions. Some of them also stated that “a lot of time is wasted on registers, records and search for information which is not used in the management”.

In Company 04, the respondent believed that information should be integrated and the *layout* a simple and intuitive one; all these expectations were confirmed. In general, the respondents affirmed that the system was didactic, practical, faster and easy to use. They also affirmed that the system was “more modern and simple”, although it had more functions.

The ease of use is a very important element for being directly connected to perception and even to user motivation when interacting with the system (Venkatesh et al, 2003). The companies which presented greater ease of use were exactly the ones where the performance expectation, analysed in the previous section, was achieved (Companies 01 and 04). By understanding that the system is easy to be used, the users tend to consider their expectations as achieved ones and their work as a facilitated one (Venkatesh et al, 2003); the opposite which was reported by the respondents in Companies 02 and 03, whose difficulty concerning the use and the system resources was greater.

The system adequacy was found in the four studied companies, involving: interaction with the new system, time consumption and the interaction experience itself. In Company 01, the expectation of work adequacy was that the system would provide subsidies mainly regarding the inventory control. There was improvement report after the system

implementation and the single exception was: “one of the big problems that I consider, regarding those who make the program, he does not have a great deal of accounting knowledge”, which makes it jeopardizing for the users, as they do not identify how a certain datum was reached.

In Company 02, the respondents expected that they would not have any difficulties in learning how to deal with the system, but they admitted that there could be some problems due to its complexity and limitations. The learning difficulty in practice “was not very big” and some reported “quiet learning”. The need for a cultural change regarding the interaction among system, user and company was identified as a critical success factor.

The lack of support from the supplier was outstanding among the reports of Company 03; the users at times had to use the system without any learning aid. It is worth pointing out that the system was not entirely parametrized and, therefore, the effort to use it and time consumption were greater than the expected. There is unanimity among the respondents when they believe that after the system total parametrization, it is going to “work correctly” and “reduce the time of the activities”.

In Company 04, the respondents’ expectation was that the system adequated itself to the needs of the company, and it should also be implemented gradually with training from experts - “the adequacy has to be both from the system to my tasks and from me to the system”. As to the ease of learning, a respondent understood that “the better the persons are trained in the beginning of the process the better information will be for the accounting”; in addition, due to the system complexity, good training was the ideal one in order to avoid having difficulties. In practice, the system demonstrated to be faster than the previous one, with longer time for the employees to perform analytical tasks. The respondents stated that they did “a lot more things by spending the same amount of time due to the information improvement” and that “the system supported me, . . . it improved my tasks”. Only one of them stated that it was “a bit hard in the

beginning” due to the old system difference which he was already accustomed to.

It was perceived in the reports that the system adequacy is something seen as user responsibility. Unlike the ease of use, with positive and negative aspects placed as the system result, adequacy highlighted training and cultural change elements, more connected to the users than to the system resources (Figure 6).

		COMPANY 01	COMPANY 02	COMPANY 03	COMPANY 04
EFFORT EXPECTANCY	EASE OF USE	<ul style="list-style-type: none"> - It would not be easy to learn how to use the system - It would not be easy to use the system, but it would be as time went by - Older users had more difficulty in the implementation than the younger ones 	<ul style="list-style-type: none"> - Expectancy that the system would offer a clear and simple interaction - The system had to go through several customizations in order to adequate itself to the company reality - Excess of information jeopardized the system use 	<ul style="list-style-type: none"> - Failure to meet the expectancy regarding the system - A great deal of “loose” information in the system; - The system operation was not clear - Short time to adapt to the new system 	<ul style="list-style-type: none"> - There was information integration - The system had a simple and intuitive layout - The system was didactic, practical, faster and easy to use
	SYSTEM SUITABILITY	<ul style="list-style-type: none"> - Daily improvement of work - Program without accounting knowledge (there is no information on how a certain datum were reached) 	<ul style="list-style-type: none"> - Need for cultural change regarding the interaction among system, user and company 	<ul style="list-style-type: none"> - Lack of support from the supplier - The system was not fully parametrized - Hopeful users considered that the system will work properly after its full parametrization 	<ul style="list-style-type: none"> - The system should be implemented gradually; - The better the person is trained, the better information is for the accounting; - Users with more time for analytical tasks

Figure 6. Effort Expectancy

4.4 Acceptance and IT Use – Social Influence

Companies 01 and 04 did not evaluate the Social Influence of the system, due to the voluntary implementation. In the environments of voluntary use, the social influence variables only interfere in the perception about the technologies, but they do not impact on their use significantly (Venkatesh et al., 2003). Figure 7 shows the main analysed information.

	COMPANY 01	COMPANY 02	COMPANY 03	COMPANY 04
SOCIAL INFLUENCE	Voluntary Implementation	<ul style="list-style-type: none"> - There were cases of positive and negative influence regarding the opinion of influential persons - There was expectancy that the manager would actively take part in the system implementation - The manager did not help actively in the implementation 	<ul style="list-style-type: none"> - Pressure from the managers in order to use the system - There is sympathy from those who use the system; - Positive characteristics access to information, faster communication and greater harmony among the departments 	Voluntary Implementation

Figure 7. Acceptance and IT Use – Social Influence

Three main aspects of social influence could be identified in Companies 02 and 03: influence of specific users, prestige and/or status in the system use, and the manager and the organization role in this process. In Company 02, concerning the opinion of influential persons, most respondents did not expect to be influenced by them, whereas others listened to their most admired colleagues' opinion only, with cases of positive and negative influence concerning the system. In Company 03, some of the respondents declared pressure from the managers for the system use, "in order to improve the processes". Another one understands that "there is no influence" from the managers, which it is only regarding the recognition that the system benefits the employee performance and reduces the time of the processes.

The status and prestige aspect in Company 02 diverged among the users. There were others who noticed that who uses the tool well receives greater recognition, and is consequently more required, and the ones who affirm that they did not "notice any difference". In Company 03, the respondents understand that there is no difference, but "sympathy for those who use the system instead". The system use mostly occurs merely for the process standardization, by considering its use as a compulsory one for the order fulfillment and for the client registration.

At last, as to the manager and organization role in this process, the expectation was that the manager had active participation in supporting the

system implementation, by following up the employees' needs in Company 02. In practice, the expectations were frustrated, and although the manager was enthusiastic about the system implementation, he did not actively help the users. There was also a manager replacement and although the new one had not participated in the system implementation, he was more active and participative and, in turn, the respondents state that they feel “more supported and safer” in order to use the ERP. In Company 03, organizational advantages of use established by the respondents as access to information, faster communication and greater harmony among the departments were pointed out. Only one respondent believes that there are no advantages in its use, as “the results are the same”. The main disadvantage pointed out was concerning the non-use of information collected by the system to be used in “businesses” with clients and suppliers.

4.5 Acceptance and IT Use – Facilitating Conditions

As a main facilitating condition, support elements as support for the system choice, technical operational support specialized in implementation and technical support throughout its use were identified in three out of the four companies. Figure 8 shows the main analysed information. In Company 03, the system was implemented in steps and, therefore, all the functionalities were not available yet; then, this company was not considered in this dimension. Even so, it is pointed out that the respondents stated that there is no ease in the use of tools and guides in the stage the system is. But they believe that the system will help when it is entirely implemented with all the available functionalities. The respondents stated that “an organized strategy of implementation of use was not planned”, i.e., the system did not take into account the characteristics and needs of each occupation area. Hence, the system required a great deal of rework and parametrizations. Finally, some respondents stated that the previous experience “in other systems” helped in the current one use.

	COMPANY 01	COMPANY 02	COMPANY 03	COMPANY 04
FACILITATING CONDITIONS	<ul style="list-style-type: none"> - The software should be adequate to the employees' needs - Need for technical physical support for problem solving; - The system did not meet the users' needs effectively 	<ul style="list-style-type: none"> - The employees should help in the evaluation of the ERP needs - A closer technical support was expected - The technical support team changed constantly, becoming something negative 	Not 100% implemented yet	<ul style="list-style-type: none"> - A consultant who understands the system should act with the employees - There should be a better system parametrization - A long wait for the technical support

Figure 8. IT Acceptance and Use – Facilitating Conditions

In Company 01, the expectation of the respondents regarding the support for the system choice was that the program should be adequate to their needs, and that the system programmer should create useful information for the users, by taking “the company basic needs” into account. Regarding the specialized technical and operational support in the implementation, the respondents believed that it would be necessary to have “a course in order to be adequate” to the system functionalities and “in order to overcome the shortcomings that we (users) may face”. Concerning the technical support in order to solve the difficulties, one of the respondents stated that it should be with physical presence and not on the telephone, while another one believed that it would not depend on how it would be supported, but on a quick solution for problem solving instead, by saying that “I do not have any time to remain inactive”.

After the implementation, the users noticed that the system was not for the company specific business and, therefore, it did not always meet all their needs efficiently. It was identified that the interaction between the system and the employees improves over time, and also that “in order to adapt yourself it is as you use it”. It is worth highlighting that the respondents did not have many problems after the implementation and that “when they did, the technicians solved them rather fast”, feeling satisfied regarding the facilitating conditions of the system use.

In Company 02, with respect to the support for the system choice, the respondents expected it to meet the real company needs, and that the employees should also have their share of ERP evaluation together with its operations, verifying its utility. In addition, the technical support was expected to be focused on “how the ERP would work in the company” and to have a closer follow-up from the computer systems department. The respondents thought that they needed a specialist team to quickly and efficiently answer questions which arose in the initial phase in addition to an “immediate demand” fulfillment, although “there was no need to be exclusive”.

In the early stage, the employees were called in order to verify the department needs, but still “the chosen system did not seem to be the most suitable one”, and the standard version did not meet many routine needs, “requiring many parametrizations”. Furthermore, the respondents said that the support was “weak” and the training was “quite generalized”. Another complaint from the respondents was concerning the turnover of the consulting team professionals (support); the bond was lost and the new consultants did not take the project peculiarities into account, causing rework. Some of them believe that “there is no support currently” and that the service is not immediate, becoming necessary “to open support requests” which take long to be answered. Finally, it is worth pointing out that the respondents said that they obtain greater aid from a former employee who took part in the implementation and who has a great deal of ERP knowledge.

In Company 04, the expectation of the respondents was that a consultant who understood the systems would act with the employees during the implementation and would explain its functioning. The employees also affirmed to be important to have the system parametrization taking the accounting demands into account. In practice, the system satisfied the respondents “to a certain extent”, as they stated that the support in implementation “was weak” and “it could have been better”, and

it was also inferred that the training was quite generalized and brief, leaving blanks which are filled in with routine and continuous knowledge exchange among the colleagues. Finally, the respondents understand that the “technical support is good”, but the problem lies in the extremely long waiting time for the support due to the lack of specialized personnel.

4.6 Acceptance and IT Use: Implications of the Studied Cases

From the result conjoint analysis, a first aspect which stands out is the concern unanimity regarding the lack of trust in the information generated by the system; it not due to lack of credibility of the system itself, but instead due to the information feeding which is accomplished by users who are frequently untrained or who have little understanding on other department issue and on the impacts generated by the system incorrect feeding. Such aspect is consistent with the literature when it shows that persons, who use the system information for their daily activity performance, are one of the main components of an information system, thus showing the need and the importance of human dimension to be aligned with the type of information generated by the system and analysed (Laudon & Laudon, 2010).

In Companies 01 and 04 there was a positive impact on the system user productivity, by declaring improvement in the activities, work reduction and also spare time to dedicate to more analytical activities, with the characteristics of the management integrated systems, which improve their user productivity, due to the fact that data entering is performed only once in the system and their impacts triggered in different areas. Companies 02 and 03 had their productivity negatively affected by the system mainly due to the non-full adhesion (only some modules were available). The great ERP highlight is in the company integration from its modules (Almajali, Masa'deh & Tarhini, 2015); therefore, with the partial system adhesion, its use benefits may not be effective ones.

It was a consensus among the 4 companies that the systems reduced the time for the users to accomplish tasks, enabling a more analytical work stage which was not accomplished previously. One of the companies (02) stated that the system is rather complex if it is compared to the old one and that some users resisted to its use; it is understood that causes of technology non-acceptance may stem either from individual or from organizational aspects and they are not always related to the system which is used (Robbins, 2007).

Company 03 presented difficulties in using the system due to the fact that the *layout* was not in line with the generated information (“loose information”). Company 02 System was famous and dear, but it was neither didactic nor intuitive and, thus, it jeopardized the employees. Companies 01 and 04 chose a simple and didactic system which met the users’ expectations and some of the benefits of using an ERP such as: better process integration, improvement of area performance, rework reduction, process standardization, greater company and employee efficiency, ease to withdraw information reports and so on can be found in these companies. (Oliveira & Hatakeyama, 2012).

Company 01 was a small business and stated that it was not prepared to receive the system; nonetheless, it obtained very good results with the implementation, such as: productivity and information increase. Companies 03 and 04 affirmed that the users who were already experienced in using other systems integrated better with the new one, as the language and the *layout* presented by the systems follow a pattern. There was social influence analysis only in two companies; the others implemented the system voluntarily. In the two analysed companies (02 and 03) the system use by the users was not compulsory and, therefore, it was reported that who did it had empathy from the managers. Furthermore, company 03 employees kept presenting the same results of those who did not join the system and thus there was no perception of higher "status" for the ones who used it.

Aspects related to the received technical support were analysed in 3 companies. In companies 01 and 02, the fact that the chosen system is not the most appropriate one to the company core business jeopardized the usability, increasing the need for and the complexity of technical support. Company 01 stated a proper and quick support consultancy. In the other two companies, the users were dissatisfied with the technical support due to the delay in the help desk activities and to the inefficiency in problem solving.

5 Conclusions

This research aimed to identify highlighting elements in the acceptance use of management integrated systems//enterprise resource planning (ERP) and their reflexes in the company in a multiple case study, by using the UTAUT model as the basis for the evaluation. The analyses showed unanimity regarding the concern about the lack of trust in the users who fed the system and consequently in the generated information.

In the companies in which occurred full system implementation there were productivity increase, activity improvement and work accomplishment reduction. The companies who faced partial system implementation had their productivity negatively affected, that is, it generated rework even with work accomplishment reduction, as there was no total integration with other areas. These are the identified highlighted elements.

In companies in which the system use by the users was not compulsory, it was reported that who joined the system had empathy from the managers. Finally, most companies showed dissatisfaction regarding the system technical support; companies which did not have the most appropriate chosen system to their core business had the necessary usability and support jeopardized.

As it is a multiple case study, there was difficulty in identifying and analyzing all the evaluation criteria of the UTAUT model, considering that each company has its peculiarity, and the information disclosure is

jeopardized at times. As future researches, the use acceptance analysis of integrated systems is highlighted in other entrepreneurial sectors and types as well as the generated interdepartmental impacts and the acceptance analysis by using other acceptance models of validated use.

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