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OUTSOURCING AND OFFSHORE: AN ANALYSIS OF THE ACADEMIC LITERATURE

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Abstract

Outsourcing and offshore are strategies adopted by businesses to manage their Information Systems. There has been an increase in the volume of literature devoted to outsourcing and offshore during the past years. This paper provides a review of articles about outsourcing and offshore published in various journals. This list of journals was obtained by consulting the Journal Citation Report with an impact factor of over 3.0 in the last five years. This research was a survey with data collection from the following journals: Information & Management, Information Systems Journal, Information Systems Research, Journal of Information Technology, Journal of Management Information Systems and MIS Quarterly. The results obtained are: the majority of articles have two or three authors (83,9%); the majority of co-authors work in different universities (73,8%); the majority of the authors are associated with a USA-based university (54,5%). The result of this research assists in the identification of researchers and research gaps in this subject.

Keywords: offshore, outsourcing, information system, literature analysis

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1. INTRODUCTION

The field of outsourcing evoked interest way back in the 1950's, but it was only in the 1980's that outsourcing began to be widely adopted by enterprises and came to have an impact on the way in which they compete with each other (Hätönen and Eriksson, 2009; Tan and Sia, 2006). Outsourcing can be conceptualized as activities and processes contracted out to be performed by another organization (Olsson, Conchúir, Agerfalk and Fitzgerald, 2008).

Currently, outsourcing Information Technology (IT) is a business trend (Krishnamirthy, Jegen and Brownell, 2009). Gonzalez, Gasco and Llopis (2006) analyzed articles on outsourcing in Information Systems (IS) published in journals, dividing the content into five perspectives: customer, supplier, customer-supplier relationship, economic theories, and others. The largest percentage of the reviewed articles (48.7%) was seen to address the customer's perspective. However, in the period since 2001, there has emerged a balance in the number of published articles on the customer's perspective (12.1%), the supplier's perspective (10.2%) and the relationship between customer and supplier (7.3%). The authors also identified an increase in the number of articles related to offshore outsourcing or global outsourcing.

Offshoring is the relocation of some activities of an enterprise beyond the limits of its country of origin (Olsson Conchúir, Agerfalk and Fitzgerald, 2008). Currently, according to Olsson, Conchúir, Agerfalk and Fitzgerald (2008), the definition of offshoring is changing, because activities are no longer being moved to any place, but to low-cost countries, also called emerging or developing countries. Technology companies such as Microsoft and Google, have moved part of their research and development activities to countries like India, China and Russia (Levina and Vaast, 2008).

Offshoring is about location and involves activities developed in a country other than that of the main operation of the company, while outsourcing concerns governance and involves an activity undertaken by another organization (Olsson, Conchúir, Agerfalk and Fitzgerald, 2008). Considering these two concepts, companies have four choices: onshore in-house – a company develops its activities in its home country; onshore outsourcing – another company, based in the same country, is contracted to develop activities; offshore in-house – activities are developed by the company in another country, in a branch of it's own company; offshore outsourcing – another company, based in another country, is contracted to develop activities.

Authors highlight cost reduction as the initial motivation for offshoring and outsourcing (Levina and Ross, 2003; Hätönen and Eriksson, 2009; Krishnamirthy, Jegen and Brownell, 2009). However, other factors can also be prime motivations and considerations, for example, access to skilled labor or entry into new markets (Kotlarsky and Oshri, 2008).

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From an academic standpoint, the importance of outsourcing and offshoring topics in the field of Information Systems can be seen by the increasing number of published articles, as shown in the research of Gonzalez, Gasco and Llopis (2006). In the business world, offshoring and outsourcing are among the main concerns of the directors in most large firms (Joshi and Mudigonda, 2008).

The aim of this paper is to review the studies on offshoring and outsourcing, taking in account all papers published in the journals Information & Management, Information Systems Journal, Information Systems Research, Journal of Information Technology, Journal of Management Information Systems and MIS Quarterly. The result of this research will help to identify topics for future research.

This paper is structured as follows: the next section outlines the basics of offshoring and outsourcing, following which there is a description of the methodological criteria adopted, after that we discuss the empirical results and finally, conclusions are drawn and guidelines for future research into offshoring and outsourcing are identified and presented.

2. OFFSHORE AND OUTSOURCING

Outsourcing is not restricted to small and medium enterprises that lack their own infrastructure for information technology (Barthélemy and Geyer, 2005). According to Javalgi, Dixit and Scherer (2009), outsourcing has become a widespread competitive strategy for companies of all sizes and sectors. In outsourcing, suppliers may be traditional companies like IBM, Oracle and Hewlett Packard as well as new companies, such as Wipro and Satyam, located in emerging countries (Gonzalez, Gasco and Llopis, 2006).

According to Gartner's research in 2007, the motivations for companies to adopt outsourcing are to reduce costs, achieve speed and agility and to focus staff on more strategic activities, among others (Krishnamirthy, Jegen and Brownell, 2009). Tan and Sia (2006) suggest that beyond the benefits achieved through outsourcing, there are adverse repercussions too, for example, the possible loss of business flexibility. The research by Morgan Chambers in 2004 pointed to innovation as one of the top ranking business needs, and one of the last any company gains when adopting outsourcing (Krishnamirthy, Jegen and Brownell, 2009). In a dynamic global environment, flexibility and innovation are key factors for business survival and should be considered carefully when opting for outsourcing.

Global interconnectivity provides another strategy for global companies. Offshoring, like outsourcing, is initially motivated by the opportunities for cost reduction (Javalgi, Dixit and Scherer, 2009). This is the reality of the largest multinationals in the Information Technology industry, such as Dell and IBM (Javalgi, Dixit and Scherer, 2009). Another example is GXS, which is headquartered in the

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USA, but spends $ 30 on an employee in Bangalore (India), while the employee in the USA would cost $ 100 (King, 2003). In this latter example of offshore in-house, the employees in Bangalore receive the same training, use the same tools and processes as their counterparts in the USA, the only difference is the cost to the company (King, 2003).

The prime motivations for companies to adopt offshoring are the potential cost reductions, time reductions (by taking advantage of time zones), that is companies follow the sun; access to larger number of alternatives with respect to the labor force (Olsson, Conchúir, Agerfalk and Fitzgerald, 2008).

As with onshore outsourcing, with offshore outsourcing also there are ob-stacles for the company as well as benefits. In the case of offshore outsourcing, cultural differences (language, respect for authority, etc.) are identified as a signif-icant barrier to the success of operations or even to the savings achieved (Krishna, Sahay & Walsham, 2004; Davis, Ein-Pain, King and Torkzadeh, 2006).

Mudigonda and Joshi (2008) define a set of attributes which should be considered when choosing the country for offshoring: cost advantages (com-munication, incentives, etc.), advantages in human resources (quantity, quality, adaptability), risk factors (political stability, currency stability etc.), and facilitat-ing factors (training institutes, infrastructure quality, etc.). Among the emerging countries where most offshore operations are set-up are India, China, Russia and Brazil (Olsson, Conchúir, Agerfalk and Fitzgerald, 2008).

According to Javalgi, Dixit and Scherer (2009), despite these problems, the strategy of offshore outsourcing is a trend that can bring positive results for orga-nizations. The use of information technology professionals in countries such as India and China can not only help companies reduce costs, but also provide a dif-ferent and innovative perspective (Javalgi, Dixit and Scherer, 2009). Outsourcing and offshoring strategies are relevant to businesses, so it is important that each company identify the strategy that best contributes to its sustainable competitive advantage.

3. RESEARCH METHOD

To achieve its purpose, this research used a survey to collect data from jour-nals. The decision to search only in journals was based on the contention of Gon-zalez, Gasco and Llopis (2006), who claim that journals are the preferred vehicle by which academics and business people acquire and disseminate knowledge.

The journals were selected using the Journal Citation Report (JCR) of the Social Sciences Edition (2008), which was consulted on March 8th, 2010. The list of journals was obtained with reference to the topic "Information Science & Library Science", with an impact factor of over 3.0 in the last five years. Although

the decision to consider only this topic may be viewed as a limitation of this research, the purpose was to focus on articles in the field of Information Systems.

Subsequently, we selected those journals that had regular articles on this topic of research (by searching the keywords offshore, offshoring, outsource and outsourcing). The six selected international journals were:

1. Information & Management,
2. Information Systems Journal,
3. Information Systems Research,
4. Journal of Information Technology,
5. Journal of Management Information Systems
6. MIS Quarterly.

The articles analyzed were selected in the journals via Proquest as follows:

- Advanced search considering the journal name and keywords (excluding literary criticism, dissertations and journals);
- The keywords adopted were *offshore*, *offshoring*, *outsource* and *outsourcing*;
- Another Search was made regarding citation and abstract.

The results obtained by searching "citation and abstract" were adopted because it is the most comprehensive because it incorporates the title, abstract and keywords. However, after selecting the list of selected documents (102 articles), it was not possible to access nine articles, which were excluded. These nine articles were not available via Proquest. Thus, the column "final number" in Table 1 shows the total number of articles reviewed in each journal. The reference list of the 93 reviewed articles can be found in Appendix A.

TABLE 1

Number of Articles Selected from the Journals

Journal Name	Initial number of articles	Final number	Period of the analyzed articles
Information & Management	28	25	1995 to 2009
Information Systems Journal	4	4	1997 to 2010
Information Systems Research	10	10	2003 to 2009
Journal of Information Technology	25	25	1997 to 2008
Journal of Management Information Systems	14	8	1992 to 2005
MIS Quarterly	21	21	1998 to 2009
Total	**102**	**93**	**1992 to 2010**

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The collected data were organized in an electronic spreadsheet, according to three dimensions: Identification of the journal – journal name, year, volume and number. Identification of the article – article title, number of authors, authors' names, affiliation and country of the author and thirdly – Identification of the article contents – key words, the method (theoretical x empirical), classification of content (onshore in-house, onshore outsourcing, offshore in-house, offshore outsourcing).

In analyzing the data, the presence or absence of variables in the articles (quantity) were considered, while thematic content analysis, following the recommendations of Bardin (1977) was used for the classification of articles.

4. DISCUSSION OF THE RESULTS

The two oldest analyzed articles were published in 1992 in the Journal of Management Information Systems (Message management systems: concepts, motivations and Strategic effects by Kimbrough and Moore; Determinants of information technology outsourcing: a cross-sectional analysis, by Loh and Venkatraman). The distribution of the number of articles per year is presented in Table 2, where there is a noticeable upward trend, which was also observed in the study by Gonzalez, Gasco and Llopis (2006). Only one article was identified in 2010 because the data collection was made early in the year on March 8th, 2010.

Gonzalez, Gasco and Llopis (2006), who studied journals in the period 1988-2005, found that 24% of articles had been written by a single author and 39% by two authors. Although the journals and the period of analysis are different, there is a perceptible change in the pattern of these results in terms of a reduction in the percentage of articles with one author, which was 9.7% in this study.

In this study the highest percentage (45.2%) is associated with articles co-authored by two authors, and most of the articles have two or three authors (83.9%). Articles with more than one author might signal a maturing of research on this subject, due to the increasing interaction between researchers in order to generate relevant contributions. Table 3 shows the number of authors in the articles.

The articles having two or more authors (62 out of 84 articles) in 73.8% cases are affiliated to different institutions. This may be due to various reasons such as: a small number of researchers who study the subject in each institution; partnerships that occur due to affinity between researchers regardless of the institution to which they are affiliated, the visit of a researcher to another institution for a period of time due to a sabbatical year or some kind of exchange, etc. Table 4 shows the number of institutions involved in each article.

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TABLE 2

Distribution of the Articles by Year

Year	Total number of articles
1992	2
1993	2
1995	2
1996	3
1997	5
1998	3
1999	2
2000	2
2001	3
2002	2
2003	5
2004	6
2005	7
2006	7
2007	5
2008	26
2009	10
2010	1

TABLE 3

Number of Authors of the Articles

Nr of authors in each article Journal	1	2	3	4	7
Information & Management	3	9	12	1	0
Information Systems Journal	0	1	3	0	0
Information Systems Research	0	5	5	0	0
Journal of Information Technology	4	13	5	2	1
Journal of Management Information Systems	0	4	4	0	0
MIS Quarterly	2	10	7	2	0
Total	9 9,7%	42 45,2%	36 38,7%	5 5,3%	1 1,1%

Although two institutions are involved in most co-authored articles, the number of studies involving authors located in more than one country is still very small. Only 25.8% of the articles with two or more authors are situated in two or three countries, as shown in Table 5.

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TABLE 4

Number of Institutions Involved per Article

Nr of Institutions Nr of Authors in Each Article	1 Institution	2 Institutions	3 Institutions	4 Institutions
2 authors (42 articles)	12	30	0	0
3 authors (36 articles)	9	17	10	0
4 authors (5 articles)	1	0	2	2
7 authors (1 article)	0	0	0	1
Total	22 (26,2%)	47 (55,9%)	12 (14,3%)	3 (3,6%)

TABLE 5

Number of Countries of the Authors per Article

Nr of countries Journal	1 country	2 countries	3 countries
Information & Management	22	3	0
Information Systems Journal	3	1	
Information Systems Research	5	5	
Journal of Information Technology	18	6	1
Journal of Management Information Systems	7	1	
MIS Quarterly	14	7	
Total	69 (74,2%)	23 (24,7%)	1 (1,1%)

The countries involved in the case of these twenty-four articles (25.8%) are: Australia, China, Denmark, Finland, France, Holland, India, Ireland, Japan, Korea, New Zealand, the UK, Singapore, Sweden, Switzerland and the USA. In most of the cases, the USA appears together with Asian countries. In general, these partnerships are facilitated when a researcher works in another institution for a period as a student or as a visiting professor. The existence of partnerships between researchers from different countries can facilitate comparative research between different cultures, which is important in the case of offshore in-house and offshore outsourcing.

The authors of most articles, whether first author or co-author, are mostly affiliated to institutions in the USA (from 122 – 54.5%), the remaining 102 authors are linked to nineteen countries. Table 6 presents the country of origin of the 93 articles analyzed.

Of the total ninety-three articles reviewed, there were one hundred seventy authors who participated in an article, nineteen authors who participated in two articles, four authors who participated in three articles, one author who participated in four articles and one author who participated in five articles. The authors that were first author on more than one article are:

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TABLE 6

Number of Authors per Country

Country	Nr authors (%)
USA	122 (54,5%)
United Kingdom	18 (8,1%)
Canada	10 (4,5%)
Australia	8 (3,6%)
China	8 (3,6%)
Netherlands	8 (3,6%)
Singapore	8 (3,6%)
Korea	8 (3,6%)
Ireland	7 (3,1%)
Germany	5 (2,2%)
Spain	4 (1,8%)
Denmark	3 (1,3%)
Finland	3 (1,3%)
France	3 (1,3%)
Sweden	3 (1,3%)
India	2 (0,9%)
Japan	2 (0,9%)
New Zealand	1 (0,4%)
Switzerland	1 (0,4%)

- three articles – Jae-Nam Lee (USA) and Michael Alan Smith (USA);
- two articles – Benoit A. Aubert (Canada), David Gefen (USA), Natalia Levina (USA), Shaila M Miranda (USA) and Soon Ang (Singapore).

The following journals published more than one article by the same author: Journal of Management Information Systems; Information & Management; Information Systems Research and MIS Quarterly. Table 7 shows the authors of more than one article and the name of the journal in which his/her articles were published. This repetition of the author of more than one article in the same journal may be associated with the type of research conducted by the author or because the journal published more articles on the subject than the others.

In Table 7 it can also be seen that thirteen authors are from the USA, i.e. 52% of the twenty-five authors who participated in two or more articles on the topic discussed. Gonzalez, Gasco and Llopis (2006) also found that the USA provided the largest number of contributions.

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TABLE 7

Name of the Authors that Participated in More than one Article

Author in more than one article	Information & Management	Information Systems Journal	Information Systems Research	Journal of Information Technology	Journal of Management Information Systems	MIS Quarterly
Jae-Nam Lee (Korea)	3		1		1	
Soon Ang (Singapore)			2			2
Suzanne Rivard (Canada)	2			1		
Shaila M Miranda (USA)			1	1		1
Michael Alan Smith (USA)	2				1	
Detmar Straub (USA)			2			1
Yong-Mi Kim (USA)			1			1
William R. King (USA)	1		1			
Sunil Mithas (USA)			1			1
Sridhar Narasimhan (USA)	1				1	
Sabyasachi Mitra (USA)	1				1	
Rajiv Kishore (USA)	1					1
Pär J. Agerfalk (Sweden)						2
Natalia Levina (USA)						2
Michel Patry (Canada)	2					
Maris G. Martinsons (China)	2					
Julia Kotlarsky (United Kingdom)		1		1		
Ji-Ye Mao (China)	1			1		
Jens Dibbern (Germany)	1					1
Ilan Oshri (Holland)		1		1		
H. Raghav Rao (USA)	1				1	1
Eric K Clemons (USA)					2	
David Gefen (USA)						2
Brian Fitzgerald (Ireland)						2
Benoit A. Aubert (Canada)	2					

Most of the articles examined (76.3%) contain empirical research. This was also seen in the survey by Gonzalez, Gasco and Llopis (2006), although the percentage was lower (63.4%). This increase in the number of empirical studies may be linked to the period of the analyzed articles, since it is natural that there is more theoretical research at first, or this factor can be attributed to the particular journals considered. However, some theoretical articles were identified in four of the analyzed journals. Table 8 shows the number of theoretical and empirical articles in each of the examined journals.

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TABLE 8

Theoretical x Empirical

Journal	Method Theoretical	Empirical
Information & Management	5	20
Information Systems Journal	0	4
Information Systems Research	0	10
Journal of Information Technology	9	16
Journal of Management Information Systems	4	4
MIS Quarterly	4	17
Total	22 (23,7%)	71 (76,3%)

In 80 reviewed articles, 434 keywords were identified, and 13 articles had no keywords. Table 9 shows the number of keywords in relation to the number of articles in which they are mentioned.

The number of keywords (288) that was mentioned in only one article is high. This may indicate that the topics studied in each article are very specific or that the selected keyword is very specific, and does not represent the studied

TABLE 9

Comparison between the Nr of Keywords and the Nr of Articles in which they were Mentioned

Nr Keywords	Nr articles
288 keywords	1
34 (business process outsourcing, business process re-engineering, contract, culture, distributed teams, EDI, empirical research, global software development, information technology, information technology outsourcing, insourcing, interorganizational relationship, interorganizational systems, interpretive study, IS management, IS offshoring, IS operations, is staffing issues, IT, knowledge sharing, management of computing and IS, multimethod research, outsourcing of IS, outsourcing success, partnership quality, risk, services, social capital, software project management, strategic alliances, strategy, systems development, time and materials, transaction cost theory)	2
11 (transaction cost economics, transaction cost, project management, partnership, knowledge transfer, knowledge management, information systems outsourcing, information systems management, information systems, control, asset specificity)	3
3 (offshore software development, IS outsourcing, agency theory)	4
2 (contracts, case study)	5
1 (trust)	6
1 (IT outsourcing)	8
1 (offshore outsourcing)	9
1 (offshoring)	14
1 (outsourcing)	29

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content. Another intriguing fact is that outsourcing was chosen as a keyword in only 29 articles, although the term more often appears in association with other words such as, for example, outsourcing of IS.

The keywords mentioned twice or more may be classified in the following dimensions: (13) technology (8) outsourcing (4) method, (4) knowledge, (3) cost, (3) offshore (1) offshore outsourcing and (18) others. The keywords associated with each dimension are presented in Table 10.

TABLE 10

Classification of the Keywords

Dimension	Keywords
Method	case study, empirical research, interpretive study, multimethod research
Outsourcing	outsourcing, IT outsourcing, IS outsourcing, information systems outsourcing, business process outsourcing, information technology outsourcing, outsourcing of IS, outsourcing success
Offshore	offshoring, offshore software development, IS offshoring
Knowledge	knowledge transfer, knowledge management, knowledge sharing, social capital
Offshore outsourcing	offshore outsourcing
Technology	information systems management, information systems, EDI, global software development, information technology, interorganizational systems, IS management, IS staffing issues, IT, management of computing and IS, software project management, systems development, distributed teams, IS operations
Cost	transaction cost economics, transaction cost, transaction cost theory
Others	contracts, contract, agency theory, asset specificity, business process re-engineering, control, culture, insourcing, interorganizational relationship, partnership, partnership quality, project management, risk, services, strategic alliances, strategy, trust, time and materials

In examining the title, there were 43 articles that mention outsourcing, 19 articles about offshore, 6 articles that include outsourcing and offshore and 25 articles that do not mention the terms outsourcing and offshore. It should be noted that when a reference is made only to offshore, it is unclear whether that means in-house, outsourcing or both.

After reviewing the abstracts of the articles, these were classified as offshore outsource – 38 articles; offshore in-house – 9 articles and onshore outsourcing – 15 articles; outsourcing (unspecified offshore or onshore) – 50 articles. In this classification, the same article may have been classified in more than one category, for example, by dealing with both offshore outsourcing and offshore in-house.

In reviewing the articles, there was a higher incidence of articles covering outsourcing than offshoring, which can be explained by the fact that the savings

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made by the companies when opening development centers in other countries is a recent phenomenon, largely fostered by advances in technology.

5. CONCLUSIONS

This research has identified increase in the number articles published on the subject, especially in 2008 and 2009. Advances in technology and the need to reduce company costs may be driving research into outsourcing and offshoring. Six journals were analysed in the research. However, 76.3% of the identified articles were published in only three of them – Information & Management, Journal of Information Technology and MIS Quarterly.

The analyzed articles have mostly two or three authors (83.9%), which may indicate a degree of maturity in the research teams. The co-authors of the articles are mostly affiliated to different institutions (73.8%), but mainly located in the same country (74.2%). The partnership between researchers from different countries can facilitate comparative studies or those involving different countries, as in the case of offshoring. However, this practice may face obstacles in term of distance and cultural differences. This was explored in only 25.8% of the analyzed articles.

Most authors are affiliated to institutions located in the USA (54.5%). Considering the BRIC countries (Brazil, Russia, India and China), only institutions in China and India have articles published on the subject in these journals. In addition, there were articles by U.S. and European researchers that analyze the attractiveness of India. Although these articles contextualize India in relation to other potential countries, there were no articles focusing entirely on other countries.

By analyzing the content of the articles, it was found that they do not always use the nomenclature 'onshore in-house', 'onshore outsourcing', 'offshore in-house' and 'offshore outsourcing', which partially hinders research into the situation being investigated here. The relationship of this theme with Knowledge Management and Innovation has been identified in more than one article. However, there is still enormous scope for research related to these topics which substantially help in achieving sustainable competitive advantage.

This research is intended to help academics and companies identify research and researchers on the topic who have been published in journals in the field of Information Systems. Subsequently, we intend to expand the investigation by selecting other journals and also deepening the analysis of the content of publications, for example, examining the theories that are being used in further research into this topic.

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Appendice A – Analised Papers

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Resumo

Outsourcing e *offshore* são estratégias adotadas por empresas para gerenciar seus Sistemas de Informação. A literatura abordando *outsourcing* e *offshore* tem aumentado em volume nos últimos anos. Este artigo fornece uma revisão de artigos sobre *outsouricng* e *offshore* publicados em periódicos. A lista de periódicos foi obtida considerando o *Journal Citation Report* com fator de impacto a partir de 3.0 nos últimos cinco anos. Esta pesquisa foi uma survey com dados coletados nos periódicos: *Information & Management, Information Systems Journal, Information Systems Research, Journal of Information Technology, Journal of Management Information Systems* e *MIS Quarterly.* Os resultados obtidos foram: a maioria dos artigos possui dois ou três autores (83,9%); os co-autores estão associados a diferentes universidades (73,8%); a maioria dos autores está associado a uma universidade nos USA (54,5%). Os resultados desta pesquisa contribuem na identificação de pesquisadores e lacunas de pesquisa sobre este tema.

Palavras-chave: *offshore, outsourcing,* sistemas de informação, análise da literatura