

# A RESEARCH PROFILE FOR MANAGEMENT INFORMATION SYSTEMS - CASE STUDY BASED ON THE AMIS SCIENTIFIC JOURNAL AND AMIS INTERNATIONAL CONFERENCE

*Andrei STANCIU<sup>1</sup>, Iuliana IONESCU,  
Ofelia Ema ALECA and Florin MIHAI*  
The Bucharest Academy of Economic Studies, Romania

## ABSTRACT

*The interest in management information systems studies has increased in the recent years because of the transition towards an information society based on knowledge which has involved a major increase in computer applications area. The impact and influence on various fields of information have made the research in this area to gain a great diversity. Management information systems research has become multidisciplinary and has become the subject of various publications in related areas. To shape a profile of the research in management information systems we have tried to answer the questions: • What are the most commonly used research methods? • What are the issues and topics most frequently researched? • There is a correlation between the keywords used and the category (subject) in which the article was included? To answer these questions we used a multifaceted approach. The data used in the analysis were obtained from the archive of AMIS international conference and AMIS journal.*

## KEY WORDS

*management information systems research, research analysis, case study*

## INTRODUCTION

The interest in management information systems studies has increased in the recent years because of the transition towards an information society based on knowledge which has involved a major increase in computer applications area.

Although in international scientific literature the management information systems research begun to shape since 1967 (Summer, 1976), and “*the information systems area was included in the first departmental structure introduced at Management Science in 1969*” (Banker & Kauffman, 2004), in Romania, the research in IT for economics domain began to develop much later.

---

<sup>1</sup> *Correspondence address:* Andrei Stanciu, The Bucharest Academy of Economic Studies, Piața Romană nr. 6, Bucharest, Romania, Tel. +40 21.319.19.00, email: [andrei75@gmail.com](mailto:andrei75@gmail.com)

The impact and influence on various fields of information have made the research in this area to gain a great diversity. Thus, shortly, Management information systems research has become multidisciplinary and has become the subject of various publications in related areas. The Accounting and Management Information Systems journal began publishing in 2002 a series of valuable scientific papers in Informatics for Management. To these were added four editions of AMIS conference where were presented several articles in management information systems area.

To determine the profile of the research in management information systems we focused on:

- What are the most commonly used research methods?
- What are the issues and topics most frequently researched?
- There is a correlation between the keywords used and the category (subject) in which the article was included?
- What is the structure of research as a social network?

To answer these questions we used a multifaceted approach, a first direction forming a domain analysis and methods research in order to analyze the social network of collaborations between authors and to expose specific facts based on this structure. Based on the classification provided by Banker & Kauffman (2004) for the research into IT for management, used also in several works (e.g. Galliers & Whitley, 2007) we tried to achieve a correlation between the keywords used in a particular classification category. Considering that the development of an area depends on the interest of researchers, we identified the most published authors and the most used bibliographical sources analysis.

## 1. RESEARCH METHODOLOGY

Research conducted in this paper is both theoretical and empirical. Developing and exploring theories and ideas which define the research frame in management information systems emphasizes the theoretical research. The empirical analysis is highlighted by the statistics and analysis on the information collected. For this study we used several databases. The first was the archive of the scientific Journal of accounting and management information systems, available at [www.cig.ase.ro/revista\\_cig/](http://www.cig.ase.ro/revista_cig/). The journal is classified by CNCSIS<sup>i</sup> in **B+** category and is indexed in international databases<sup>ii</sup>. It were included all the articles in the thematic area of IT. Information gathered from these two sources was managed in an Access database.

## 2. LITERATURE REVIEW

The research in informatics for management began to develop with the development of information systems and keep the same exponential trend over the years. Some of the first authors Ackoff (1967) and Summer (1967) anticipated the rocketing trend in management information systems domain but they were often criticizing the users' euphoric expectations regarding the software applications, especially the myth that management information systems must provide solutions for anything. The Journal of Accounting and Management Information Systems began publishing since 2002 a series of valuable scientific papers in IT domain.

While American publications such as Communications of the ACM included from the beginning (first appearance in 1958) articles on topics of management information systems, in Europe, the research projects in management information systems area, began to be published since 1963 with the emergence of Information & Management (Galliers & White, 2006). The same authors state that the first conference on information systems specialist was Scandinavian IS Research Seminar (IRIS) and took place in 1978. Papers on management information systems subject have been published in Journal of Accounting and Management Information Systems journal since 2002. We also could mention the papers presented at the AMIS conference organized in Bucharest, where several scientific articles on related topics were discussed.

Considering the growing number of research papers in IT for management, the results could be quantified and there are studies that analyze the research. Technological developments and increased use of computers in many areas has led to a perspective of multidisciplinary and management information systems become subject of various publications in related areas. In many cases, this diversity has not been beneficial because of segmentation. It has been difficult to achieve a cumulative tradition of research topics (subjects) offered by a journal, even one specialized in management information systems, while the subjects became more varied and without any apparent connection than the parallel exposure of many facets of using information systems.

For example, the flow of information within an organization can be analyzed in many ways: economical, regarding software and hardware architecture, financially, social, etc. Each perspective could be included in articles published in the same journal. Dispersion of information makes it difficult to fully understand the phenomenon, and grouping information which refers to different sub domains within the same publication could make the management and access to information difficult. As a consequence could be impossible for the researchers to strengthen a base of methods, models and also the research tools.

Dynamics of information technology has many advantages in management information systems research, but many researchers believe that this also involves some disadvantages. Benbasat and Zmud (1999) considered that *"many of the articles published in current issues of IS journals read-in terms of the technical and business contexts being described-as if they could have been written years ago"*.

There are also critics who sustain that the articles are not relevant *„they say nothing in these articles and they say it in a pretentious way"* (Business Week 1990, p. 62). Benbasat and Zmud (1999) has identified several problems for management information systems research such as lack of relevance or research tradition and has proposed a set of recommendations to both publishers and the academic community. Generally, IS researchers have been less successful than their colleagues in other business school disciplines in developing a cumulative research tradition (Keen 1980). Among the most important recommendations proposed by Benbasat and Zmud Party (1999) are mentioned:

- Topic selection has to focus on future interests of key stakeholders;
- Articles have to develop cumulative, theory-based, context-rich bodies of research to be able to make prescriptions and be proactive;

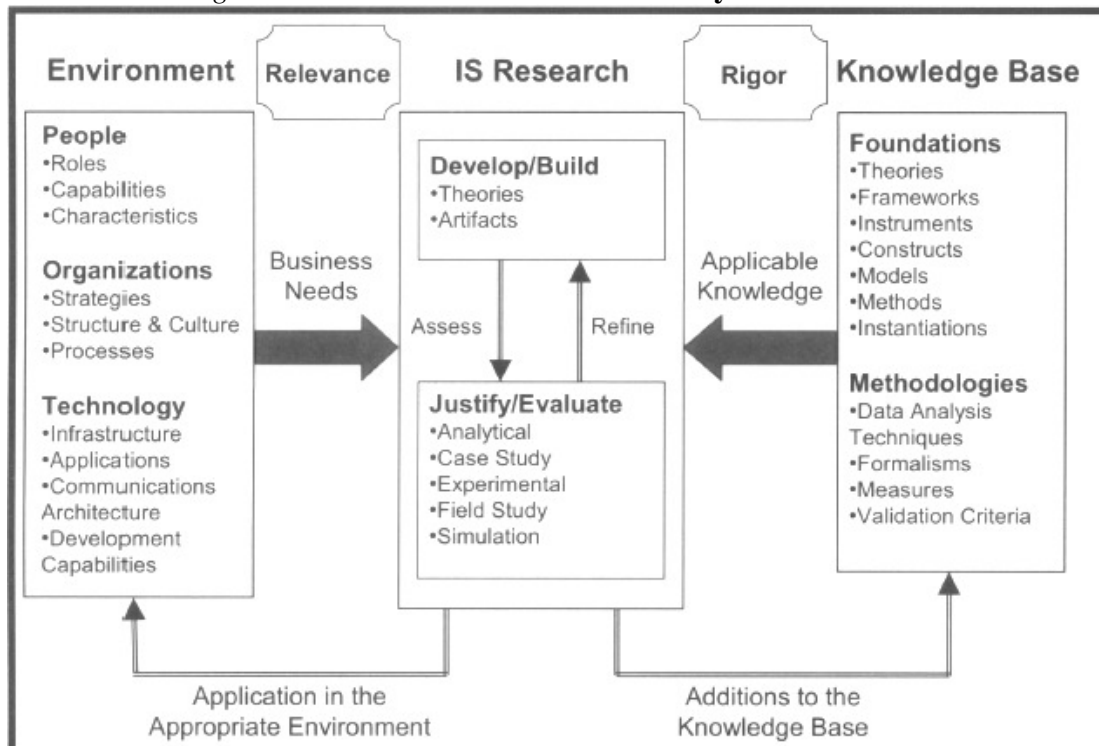
- Editorial process has to set the goal of publishing manuscript as being both rigorous and relevant.

"Research methods shape the language we use to describe the world, and language shapes how we think about the world" (Benbasat & Weber 1996, p. 392).

According Romm and Plinski (1999) and Trauth and Jessup (2000) the studies in IT area consists especially in quantitative research, case studies being among these methods.

Hevner *et al.* (2004) designed a conceptual framework that enables understanding, implementation and evaluation of informatics research in a perspective which mixes the behavioral approach and science approach (*Figure 1*). The informatics research has to develop theories taking into account the real needs of the community through various means of research on the knowledge gained. The research results should be relevant to the environment and the people whom they are addressed and have to meet the rigors imposed by certain research methodologies.

**Figure 1. Framework for information systems research**



(Hevner *et al.* , 2004: 80)

Methodology is explained by Dubravka Cecez-Kecmanovic (2007) as "a comprehensive strategy for conceptualizing and conducting research focusing particularly on empirical research methods in a specific approach positivist, interpretive or critical". In the same perspective Chua (1986) has identified three categories of classification of research's epistemology, such as: positivist, interpretive and critical research.

Positivistic research aims to test theories in order to predict certain phenomena impact on organizations. A special category within a positive research consists in descriptive articles including case studies, with or without descriptive statistics. The most used technique is to test hypotheses and forecast on samples of population (Orlikowski & Baroudi, 1991).

In the interpretative research, results are related with subjective opinions and in the critic research is studied the technological evolution of management information systems in connection with their social effects. Claver & All (2000: 187) classify research methodologies into two main categories: informatics theoretical studies or non-empirical studies (presenting conceptual, illustrative, and applied concepts) and empirical studies (case studies, field study, field experiment, laboratory experiment).

Different classifications for management information systems research was presented by several authors over the years. Banker and Kauffman (2004) proposed a classification of research work considering works published until 2004. This classification was subsequently adapted Galliers and Whitley (2007).

With the increasing interest of researchers for management information systems, have increased concerns regarding security systems, which led to the shaping of a distinct category of security and auditing systems. According to Banker and Kauffman (2004) and Galliers and Whitley (2007) the main categories of IT for management research are:

1. **Decision Support Systems:** a list of most commonly used keywords contains: systems to assist decision, models, decision);
2. **System development:** contains works in which the next keywords are usually encountered: *systems development, systems design, systems planning, software architecture*);
3. **Human:** includes works that focus on the interface between users and systems. In these works the most representative keywords are *interface* and *computers users*;
4. **Research issues:** is a broad category that can be found in many works Research in this area is defined by the keywords: case study, research on information systems, knowledge;
5. **Information Systems Organization and Strategy:** is a category containing works of operational management. The most used keywords are *Organizational, Management, ERP, Internal market, Strategy, Outsourcing, Business*;
6. **Economic:** refers to the field of economic analysis of organizations productivity and performance;
7. **Technology:** includes works that refer to the hardware systems. Most used keywords are *network* and *hardware*.
8. **Society:** includes research related to Governance, Public Sector, public services;
9. **Electronic Markets:** includes research in electronic commerce, the use of the internet (or other networks) for commercial purposes.
10. **Information systems audit:** contains all the elements that are specific to audit. The keywords used are *auditing, risk, vulnerability, security*.

### 3. DATA ANALYSIS

As an interdisciplinary research positioned at the frontier of several sciences, scientific research in management information systems has a fairly extensive coverage including software design,

measuring effectiveness and influence of information systems and not least their security. Research's profile in management information systems in Romania, particularly in JAMIS journal and JAMIS conference was determined on the basis of a multi-domain analysis. The first facet involves identifying the most used research methods and topics or subjects most frequently researched. This is done through keyword analysis, title and abstract. Orlikowski and Baroudi (1991) presented a classification of research work, by category, depending on the keywords specified.

In the present research, the classification was done based on keywords, but has required the study of abstracts and papers content. Most of the papers could be classified easily into one category, while some papers could fit into several categories, the classification being made after detailed analysis of the paper content. Another dimension of the analysis is focused on the study of research interest for management information systems area, involving analysis of research methods and the references used. The Number of papers published for each annual conference is comparable in values and is presented in *Table 1*.

**Table 1. Number of papers for each edition of the conference**

Conference	Number of papers
AMIS 2006	27
AMIS 2007	30
AMIS 2008	29
AMIS 2009	21
<b>Total</b>	<b>107</b>

## 2.1. Analysis of research areas

Establishing a set of keywords for a research work has a great significance. Keywords should allow the classification in a particular domain of science and eventually in a specific category. A set of keywords should also provide information on possible type of research and methodology used. Keyword analysis for the papers presented regarding management information systems at AMIS conference highlighted that in most cases papers are oriented on general subjects, without allowing the localization within a particular category.

The most scientific papers presented by the scientific community participating in the conference are circumscribed to the audit scope and offering support for the audit mission or IT audit. This trend is confirmed by the keywords used, the most common being „Audit” (16 occurrences), Security (7 occurrences), risk assessment (4 occurrences), vulnerability (4 occurrences). *Business Intelligence* and also *integrated systems* or *knowledge management* have been and remain of interest to the scientific community at AMIS conference.

**Table 2. Number of occurrences for each keyword in selected papers for each edition of the conference**



Keyword	AMIS 2006	AMIS 2007	AMIS 2008	AMIS 2009	Total
Audit	2	2	9	3	16
Information technology	4	3	3	2	12
Business Intelligence	3	2	2	3	10
ERP	1		2	5	8
Informatics system	2	3		2	7
Security	2	3	1	1	7
Knowledge management	1	2	2	1	6
Business process	1	1	1	2	5
Data Mining	3	1	1		5
UML	2	2		1	5
Web services	2	1		2	5
CAAT	2		2		4
Data Warehouse	1		1	2	4
Design	1		2	1	4
Higher Education		1	1	2	4
Ontology		1	1	2	4
Risk assessment	1	2	1		4
Vulnerability	1	1	2		4
XML	1	1	1	1	4

Using the classification of Banker and Kauffman (2004), the papers were reviewed in terms of keywords used. In *Table 3* are compared the number of papers in each category for each annual conference. It appears that, in the early editions, were typically found papers which dealt with the systems development (19%), but for the next years interest in this category was lower (only 7% of the selected papers in 2008 and 5% in 2009 edition).

On the other hand, the interest in the *Research Issues* and *Information systems organization and strategy* has increased. Research interest in *electronic market* field began to fall and another fall is visible for *Technology* category.

*Table 3. Analysis of research areas*

Category	AMIS 2006	AMIS 2007	AMIS 2008	AMIS 2009	Total
Audit	15%	13%	21%	10%	15%
Decision Support Systems	7%	13%	10%	10%	10%
Economic	0%	10%	0%	5%	4%
Electronic market	7%	17%	17%	5%	12%
Human	4%	3%	7%	0%	4%
Information Systems Organization and Strategy	33%	13%	7%	38%	21%
Research issues	0%	7%	3%	14%	6%

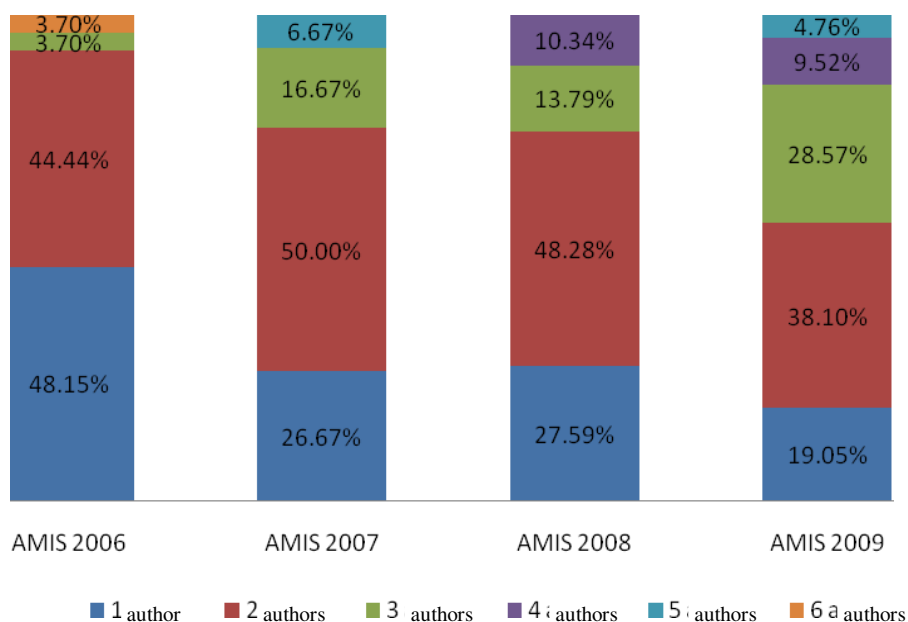
Society	0%	3%	14%	10%	7%
System development	19%	7%	7%	5%	9%
Technology	15%	13%	14%	5%	12%

## 2.2. Analysis of co-authors network

As concerns the number of authors who participated in the elaboration of a scientific article could not be found significant changes during the 4 editions of the conference.

If, at AMIS 2006, almost half of selected papers (13) were proposed by unique authors, in the next editions could be observed the increased number of papers with 2 or 3 authors, which in total represent over 90% of the selected papers. It appears, however, a tendency to increase the number of papers by several authors at the expense of single author papers (*Figure 2*).

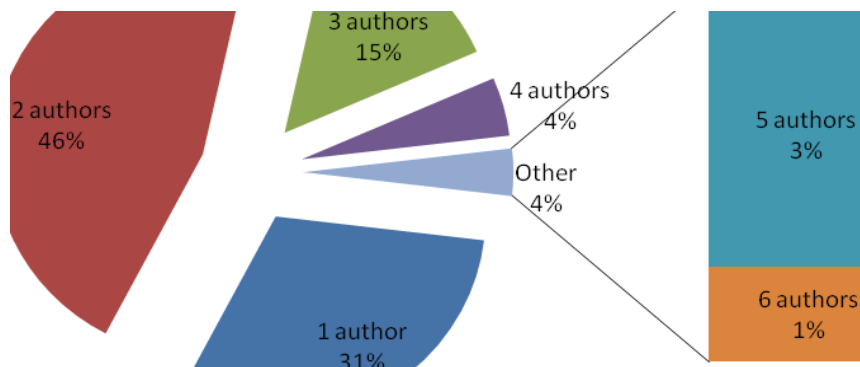
**Figure 2. Number of papers grouped by number of authors**



As shown in next figure, the papers written by one or two authors represent almost 80% of the papers presented in the four editions of the conference AMIS (*Figure 3*).

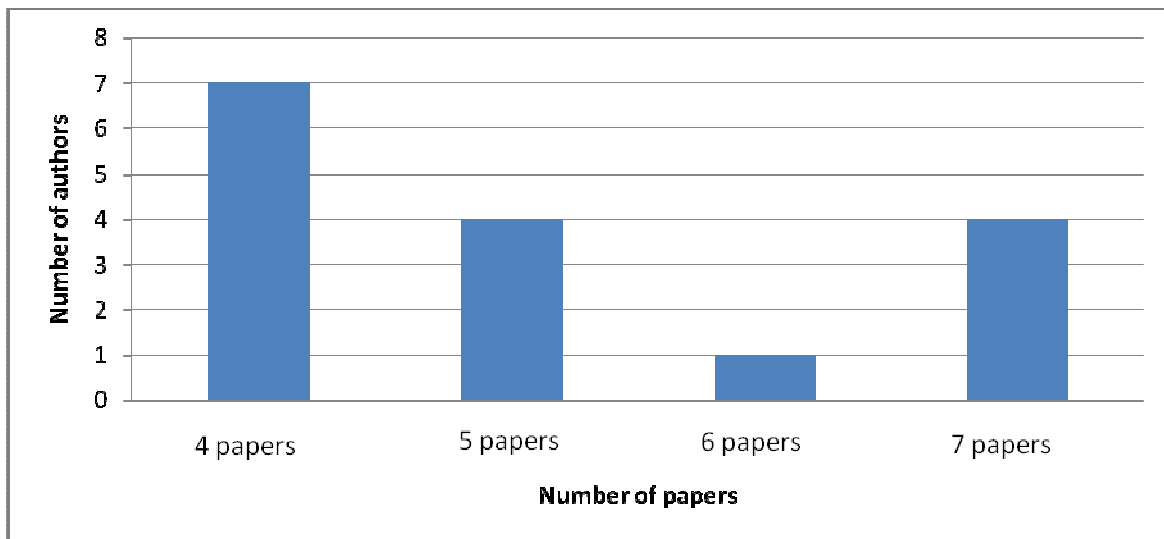
**Figure 3. Analysis of co-authors network**





Considering the 114 authors who participated at the AMIS conference (all editions), only seven have participated in each of its editions. Four authors have participated with seven articles during the four editions of the conference, one author attended six articles, four authors of five articles and seven authors with four articles (*Figure 4*).

**Figure 4. Number of authors with more than four papers**



Considering the trend to work with several co-authors we have tried to analyze the characteristics of collaborations between authors using techniques for analyzing social networks. Network nodes consist of the authors and the links are highlighted through cooperation for the achievement of an article. In the present paper, we analyzed only the papers with more than two authors, so the unique author papers were not counted at all. Network size is determined by the number of authors - in our case the number of distinct participants in each annual conference (as *Table 4* reveals).

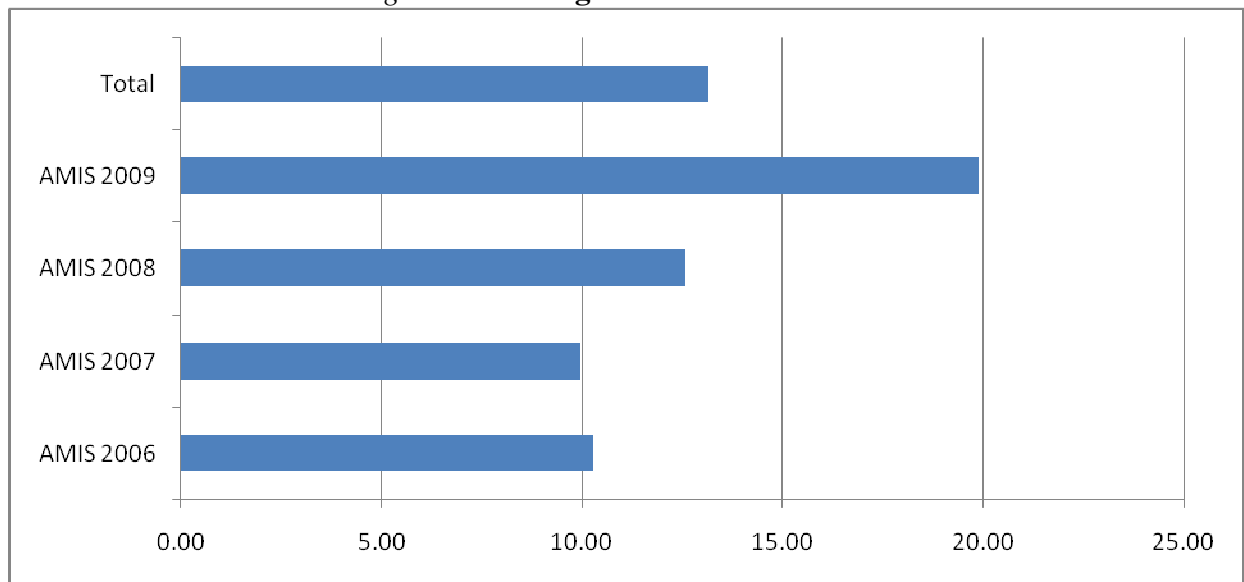
Table 4. Evolution of authorship

Conference	Number of authors
AMIS 2007	55
AMIS 2008	52
AMIS 2009	47
AMIS 2006	33
<b>Total</b>	<b>187</b>

### 2.3. Analysis of references

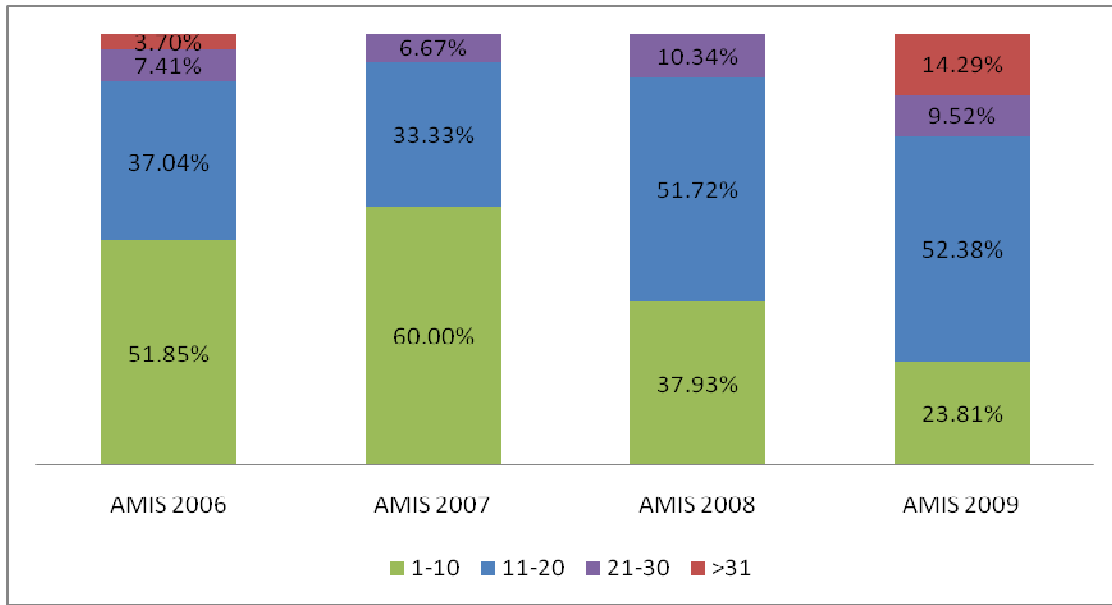
In terms of references used for a scientific paper presented at the conference, over the four years, there was a progressive increase as concerns the average number of references and the overall average is 9.21.

Figure 5. Average number of references



As we can see easily, at the first two editions the largest share was for the papers with more than 10 references, on the contrary, for the latest edition, the percentage increases significantly, and there were many works with more than 30 references (Figure 6).

Figure 6. References analysis



## CONCLUSIONS

Analysis based on work presented at the conference AMIS highlighted some changes in the interest of researchers for some topics. Thus, it was noticed the increased interest for *Research issues* and *Information Systems Organization and Strategy*. Another trend is for the work in teams which in the opinion Claver *et al.* (2000) is a sign of maturity of the research. The research in management information systems has been analyzed from several perspectives: the domain and subjects, the references and detailed characteristics of scientific papers.

Based on keywords specified for selected papers, was made a classification according to the research topic that allowed comparative analysis of preferred subjects and research topics of interest in management information systems research. The interdisciplinary of the research is highlighted by the diversity of keywords used in the work reviewed. As the present research reveals, the analysis of paper keywords highlighted that in most cases the scientific papers are circumscribed to the audit scope. In fact, such analysis was based on the number of occurrences for each paper keyword for each conference edition.

Analysis of references (citations) highlighted the interest of researchers for this area, showing a qualitative and quantitative improvement of references for each edition.

Papers characteristics were quantified using the number of authors per paper, identifying the authors who proposed most articles. The basic elements of the profile of management information systems research presented in the present paper can be used for subsequent comparisons.

## REFERENCES

- Ackoff, R. L. (1967) "Management misinformation systems", *Management Sci.* 14 B147-B156.  
 Banker, R.D. & Kauffman, R. J. (2004) "The evolution of research on information systems: a fiftieth year survey of the literature in management science"

- Benbasat, I. & Zmud, R.W, (1999) Empirical Research in Information Systems: The Practice of Relevance Source: MIS Quarterly, Vol. 23, No. 1 pp. 3-16 Published by: Management Information Systems Research Center, University of Minnesota Stable URL: <http://www.jstor.org/stable/249403>, Accessed: 24/03/2010 06:32
- Business Week. (1990) "Is Research in the Ivory Tower 'Fuzzy, Irrelevant, Pretentious?'" October 29, pp. 62-66.
- Cecez-Kecmanovic, D. (2007) Critical research in information systems: the question of methodology.
- Chua, W.F (1986) Radical Developments in Accounting Thought, The Accounting Review, 61 601-632.
- Claver, E., Gonzale, R., Llopis, J. (2000) Information & Management 37, Information & Management, 181-195
- Keen, P. W. (1980) "MIS Research: Reference Disciplines and a Cumulative Tradition," Proceedings of the First International Conference on Information Systems, E. McLean (ed.), Philadelphia, PA, pp. 9-18.
- Orlikowski, W. J. and Baroudi, J.J. (1991) "Studying Information Technology in Organizations: Research Approaches and Assumptions", Information Systems Research (2) 1991, pp. 1-28.
- Romm, C. T., and Pliskin, N. (1999) "The Office Tyrant- Social Control Through E-Mail," Information Technology & People (12:1), pp. 27-43.
- Trauth, E. M., and Jessup, L. M. (2000) "Factors that Influence the Social Dimension of Alignment between Business and Information Technology Objectives," MIS Quarterly (24:1), March, pp. 43-80
- Sumner, C. (1967) Critique of "An overview of management science and information systems." Management Science 13 B834-B836
- Hevner, A.R., March, S.T., Park, J., Ram, S. (2004) Design Science in Information Systems Research, MIS Quarterly, Vol. 28, No. 1, pp. 75-105

---

<sup>i</sup> CNCSIS - The institution which approves and finances scientific research in universities in Romania

<sup>ii</sup> The Journal Accounting and Management Information Systems is indexed in: EBSCO, ProQuest, Index Copernicus Journals Master List and Ulrich's Periodicals Directory

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.