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WHAT DOES THE BEST IS RESEARCH LOOK LIKE? AN ANALYSIS OF THE AIS BASKET OF TOP JOURNALS

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Abstract

In 2007 the Association for Information Systems announced that "a basket" of six journals should be considered as the top journals in the IS field. This list of journals was adopted based on a recommendation from the IS Senior Scholars Forum. One notable feature of the AIS list of journals is that it recognizes the topical, methodological, and geographic diversity of the IS field. For example, the list includes two European journals.

Using bibliographic analysis, we classified all the research articles that have been published in the AIS basket of journals over a ten-year period, from 1998 to 2007. Using the classification framework and criteria of Chen and Hirschheim (2004), all articles were classified based on their paradigmatic and methodological approach. Our study thus provides a comprehensive overview of the research that has been published in the top six IS journals over the past decade. It also shows how the US-based journals differ from their European counterparts.

Hence, the contribution of this article is that it is one of the first to analyze the AIS basket of top journals. It provides some insight into what kind of research has been published in these outlets. As this list is now being used in tenure and promotion cases in research-oriented universities around the world, we believe our findings will be of wide interest to the IS research community.

Keywords: information systems, journals, AIS

1. INTRODUCTION

As the academic field of Information Systems has developed, IS researchers have become increasingly interested in nature of the discipline, its publication outlets, and its accomplishments. Some have suggested that such self reflection is beneficial; by understanding our past accomplishments, the community can better direct its future efforts in the most productive manner (Alavi & Carlson, 1992).

One stream of research along these lines has focused on the how IS journals can be ranked (Adams & Johnson, 2008; Baskerville, 2008; Hardgrave & Walstrom, 1997; Katerattanakul, Han, & Hong, 2003; Lending & Wetherbe, 1992; Mylonpoulos & Theoharakis, 2001; Nord & Nord, 1995; Peffers & Ya, 2003; Straub, Ang, & Evaristo, 1994; Whitman, Hendrickson, & Townsend, 1999; Willcocks, Whitley, & Avgerou, 2008). At research-oriented universities, the ranking of journals is an important factor in tenure and promotion decisions.

Another stream of research has looked at paradigmatic and methodological trends within the Information Systems field (Claver, Gonzalez, & Llopis, 2000; Farhoomand & Drury, 1999, 2001; Hamilton & Ives, 1982). Some researchers have argued in favour of greater paradigmatic and methodological diversity within the IS research landscape (Mingers, 2003; Orlikowski & Baroudi, 1991).

This paper builds on this earlier work by providing a paradigmatic and methodological analysis of the Association for Information (AIS) basket of top six journals in Information Systems. AIS, the premier association for all IS academics, adopted this list of journals in 2007 based on a recommendation from the IS Senior Scholars Forum. The six journals in the AIS list are as follows: *Management Information Systems Quarterly (MISQ)*, *Information Systems Research (ISR)*, *Journal of the AIS (JAIS)*, *Journal of Management Information Systems (JMIS)*, *European Journal of Information Systems (EJIS)*, and *Information Systems Journal (ISJ)*.

Using bibliographic analysis, we classified all the research articles that have been published in the AIS basket of journals over a ten-year period, from 1998 to 2007. Using the classification framework and criteria of Chen and Hirschheim (2004), all articles were classified based on their paradigmatic and methodological approach.

Our study thus provides a comprehensive overview of the research that has been published in the top six IS journals over the past decade. It allows us to see how the US-based journals differ from their European counterparts. Our study differs from previous studies in that it is the first to focus specifically on the AIS basket of top journals. It also provides more recent results. For example, one of the most recently published studies of IS journals classified articles up to the end of 2001 (Chen & Hirschheim, 2004), whereas our study classifies IS research articles right up to the end of 2007. Hence, we believe our findings are both relevant and timely. This article provides a current and up-to-date view of the top research journals in information systems.

2 LITERATURE REVIEW

One stream of research about the nature of the IS field has focused on the identification of the field's top journals (Galliers & Whitley, 2007; Katerattanakul et al., 2003; Lending & Wetherbe, 1992; Lowry, Romans, & Curtis, 2004; Mylonpoulos & Theoharakis, 2001; Nord & Nord, 1995; Peffers & Ya, 2003; Valacich, Fuller, Schneider, & Dennis, 2006; Willcocks et al., 2008). One outcome of this research is that it provides tenure and promotion committees with some basis on which to gauge researcher productivity.

Another stream of research about the nature of the IS field has looked at paradigmatic and methodological trends within the Information Systems field (Claver et al., 2000; Farhoomand & Drury, 1999, 2001; Hamilton & Ives, 1982; Orlikowski & Baroudi, 1991). For example, Hamilton & Ives (1982) investigated the progress of the field with regards to the research strategies employed by IS researchers. They looked at 15 journals during the period 1970 to 1979. They found that 70% of the articles were of a conceptual nature. They said this result was not a surprising result given the discipline's relative infancy at that time.

A decade later empirical articles were much more common that conceptual pieces (Alavi & Carlson, 1992). Orlikowski & Baroudi (1991) surveyed four IS publication outlets between the period 1983 to 1988. They found that positivism represented a dominant perspective in empirical IS research at that time. They suggested that this single set of philosophical assumptions informing IS research was unnecessarily restrictive, and hence they sought to encourage greater diversity. They also found that the most popular research method was a survey, followed by laboratory experiments and then case studies. Alavi & Carlson (1992), similarly, in their study of 8 journals characterized IS research as following the positivist paradigm. However, they found that the preferred research method was a field study, followed by lab experiments and then case studies, with surveys being the fourth preferred research method. The divergence in findings can be explained by the different set of journals chosen for each study.

Since 1990 there has been at least five studies published investigating the development of the IS research community. Table 1 summarizes these studies with respect to their findings about the research methods used within articles.

	Recent Studies				
Popularity	**Farhoomand & Drury (1999)**	**Claver, Gonzalez & Llopis (2000)**	**Vessey, Ramesh & Glass (2002)**	**Mingers (2003)**	**Chen & Hirschheim (2004)**
First	Survey (32%)	Field study (57%)*	Field study (26.8%)	Case study (27%)	Survey (41%)
Second	Case study (17%)	Case study (31%)*	Lab experiment (19.1%)	Survey (24%)	Case study (36%)
Third	Lab experiment (10%)	Lab experiment (11%)*	Case study (13.7%)	Observation (12%)	Lab experiment (18%)
Period surveyed	1985 - 1996	1981 - 1997	1995 - 1999	1993 - 2000	1991 - 2001

Table 1.   Research methods used in selected journals

*Converted from Table 4 in Claver et al. (2000) against total number of empirical studies

Table 1 indicates that, on average, field studies and surveys were the most common research methods in the selected IS journals, followed by case study research. The close linkage between field studies and surveys may be due to the fact that some studies classified both field studies and surveys as being in the same category (Vessey, Ramesh, & Glass, 2002).

Table 2 summarizes the findings of some of these studies with respect to the paradigms used with the selected IS journals. Most of the studies used Orlikowski and Baroudi's (1991) classification of

paradigms (or research philosophies) into three: positivist research, interpretive research and critical research.

Popularity	Recent studies		
	Vessey, Ramesh & Glass (2002)	Mingers (2003)	Chen & Hirschheim (2004)
Positivist	46.7%	76%	81%
Interpretive	4.7%	18%	19%
Critical	-	6%	-
Period surveyed	1995 - 1999	1993 - 2000	1991 - 2001

Table 2.   Research paradigms used in selected journals

Table 2 reveals that positivist research was still the dominant paradigm within the IS research community during the 1990s, despite an increase in the number of interpretive research articles. The number of critical research articles remained small.

3   RESEARCH METHOD

Similar to previous studies of this nature, the research method we adopted was bibliographic research. This entailed surveying all the research articles in the AIS basket of six top journals over a ten year period, from 1998 to 2007. The AIS basket of journals recognizes topical, methodological, and geographical diversity of the IS field. Using the classification framework and criteria of Chen and Hirschheim (2004), we classified research articles according to paradigm, empirical vs. non-empirical, quantitative vs. qualitative, research duration, and research method. Due to space constraints we will only discuss our findings with respect to three aspects (paradigm, qualitative vs. quantitative, and research method).

3.1   Paradigm
Within this category we classified articles as either following a positivist, interpretive, or critical paradigm, following the three-fold distinction of Orlikowski and Baroudi (1991). Briefly, articles were classified as positivist if they involved hypothesis-testing and/or quantifiable measures of variables; articles were classified as interpretive if they focused mostly on sense-making and the subjective interpretations of participants; articles were classified as critical if they were based on the work of one or more critical theorists such as Habermas, Bourdieu or Foucault and were oriented towards social critique. In cases of doubt we consulted the following articles (Klein & Myers, 1999; Richardson & Robinson, 2007; Walsham, 1995).

3.2   Quantitative vs Qualitative
Within this category we classified articles as quantitative, qualitative, or mixed, using the criterion specified by Chen & Hirschheim (2004). In essence, the research method was classified as quantitative or qualitative depending on whether the approach used to collect and analyse the data was statistical or numerical in nature, or textual. Articles which utilized both quantitative and qualitative methods were classified as mixed.

3.3   Research method
Within this category we classified articles as using the following research methods: survey, case study, laboratory experiment, field experiment, or action research. The five research methods can be described as follows:

Survey: Studies employing this research method gather data through the form of questionnaires, which can be paper-based or web-based.

Case study: Studies employing this research method undertake data collection at one or several sites, usually over a period of time; data is usually obtained from "multiple sources of evidence" including interviews and documents.

Laboratory experiment: Studies undertaking laboratory experiments aim for control over the independent variables being measured. Participants and/or groups are usually subject to randomly assigned treatments.

Field experiment: As opposed to the controlled environment of a laboratory experiment, field experiments are conducted within a naturally-occurring system. As such, researchers often do not have control over variables under measurement.

Action research: Studies using action research aim to solve a practical problem in the research setting while also contributing to knowledge about the phenomenon.

3.4 Data Collection

We classified all articles within the chosen dataset, including research articles and research notes. However, we excluded editorials and other similar non research-based articles.

4 FINDINGS

4.1 Paradigm

One way to look at our data with respect to paradigm is to compare the US journals with the two European IS journals. The US-based journals are MISQ, ISR, JAIS, and JMIS, whereas the European journals are EJIS and ISJ. Please see Figure 1 below. Of course, by definition there are approximately twice as many articles from the four US-based journals as there are from the two European journals.
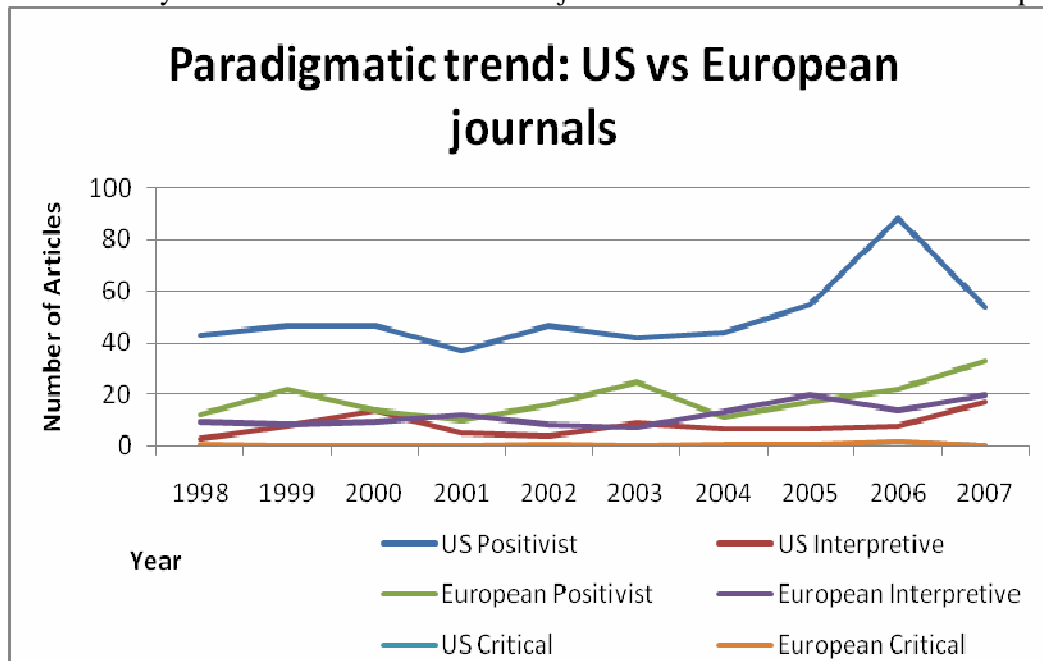

Figure 1.   Paradigmatic trend of US vs European journals

Although there is a common perception within the IS research community that European IS research is largely interpretive, Figure 1 shows that positivist research is the most common research paradigm adopted in both the US and Europe. However, the amount of interpretive research has increase slowly

over the past decade in both continents. As for critical IS research, a small number of articles were published in both European journals, but hardly any in the US-based ones. The overall percentage for all six journals over the entire period is shown in Figure 2.
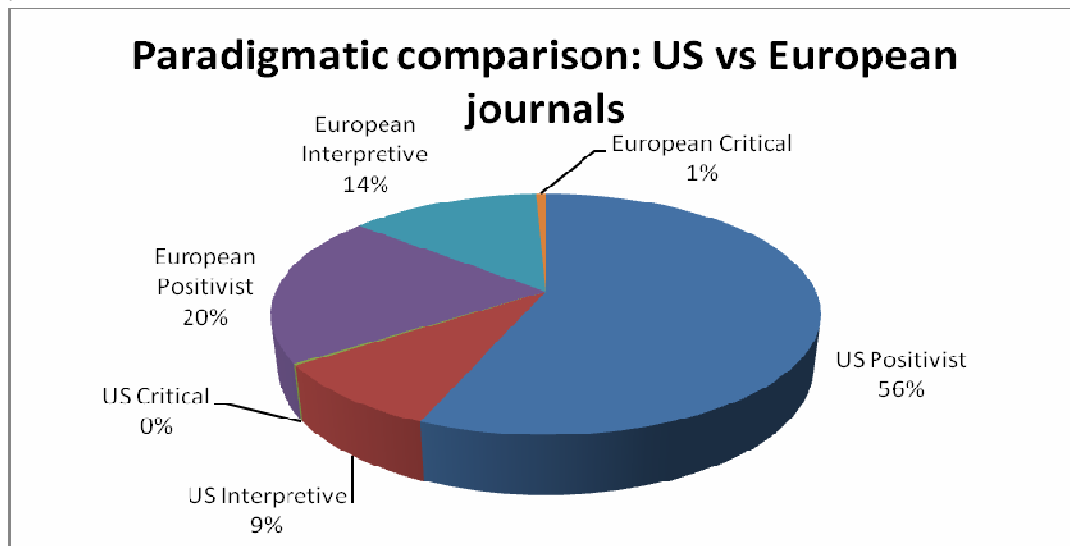
.

Figure 2.   Paradigmatic comparison of US vs European journals

As seen from Figure 2, positivist articles account for three-quarters of all the articles published in the AIS basket of six journals over the past decade (56% US, plus 20% European). The remainder are mostly interpretive (23%).
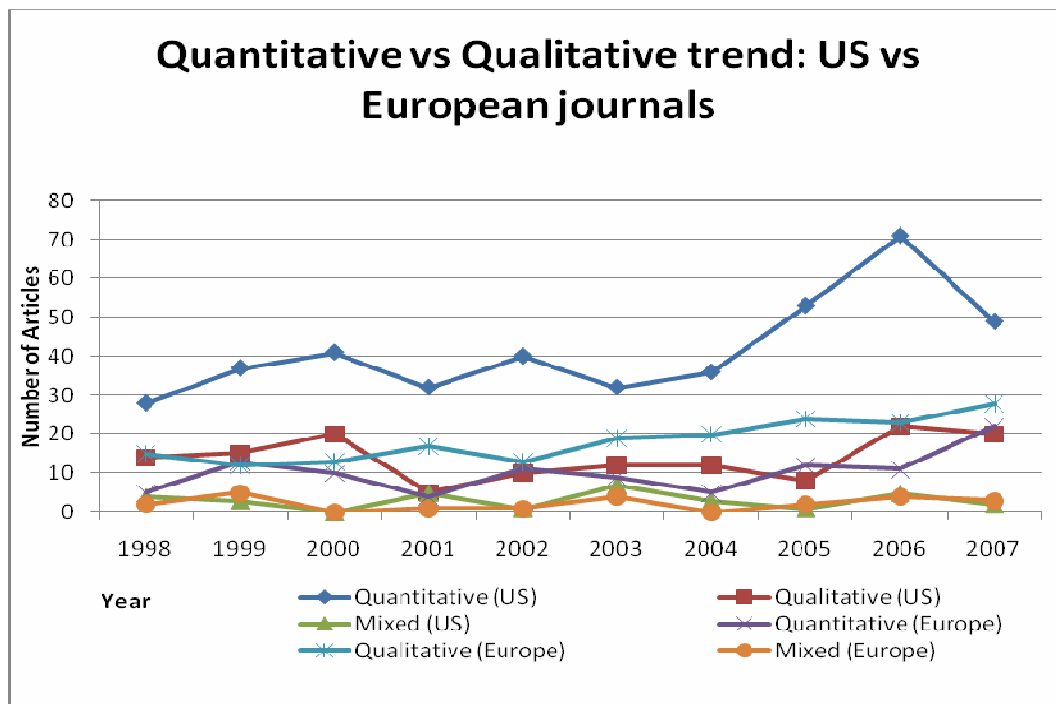
4.2   Quantitative vs Qualitative

Figure 3.   Cross-continental Quantitative & Qualitative trends

Looking at Figure 3, we can see that the most common types of studies within US journals are quantitative, followed by qualitative studies and mixed method studies. With the European IS journals, qualitative studies are the most common, although the gap between the number of quantitative and qualitative studies is quite small. One interesting phenomenon is the large decline in the number of US quantitative studies from 2006 to 2007. This decline closely matches the pattern shown by US positivist studies in figure 1. However, whether this represents an aberration or the start of a long-term trend remains to be seen.
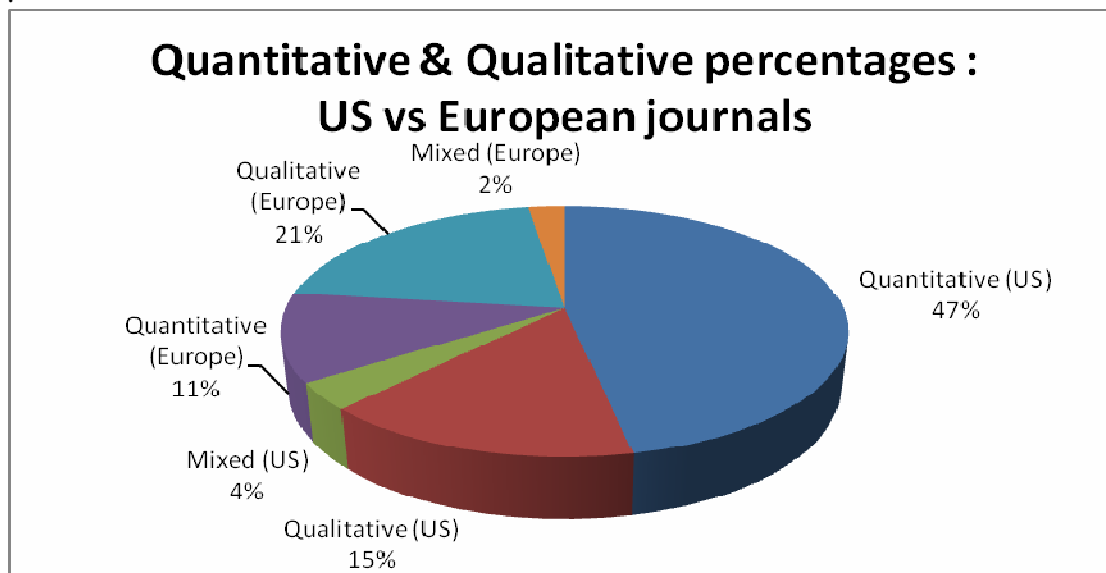
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Figure 4.   Cross-continental Quantitative vs Qualitative percentages

As can be seen from Figure 4, quantitative articles accounted for 56% of all the articles published in the AIS basket of six journals over the past decade, whereas one third were qualitative (36%).
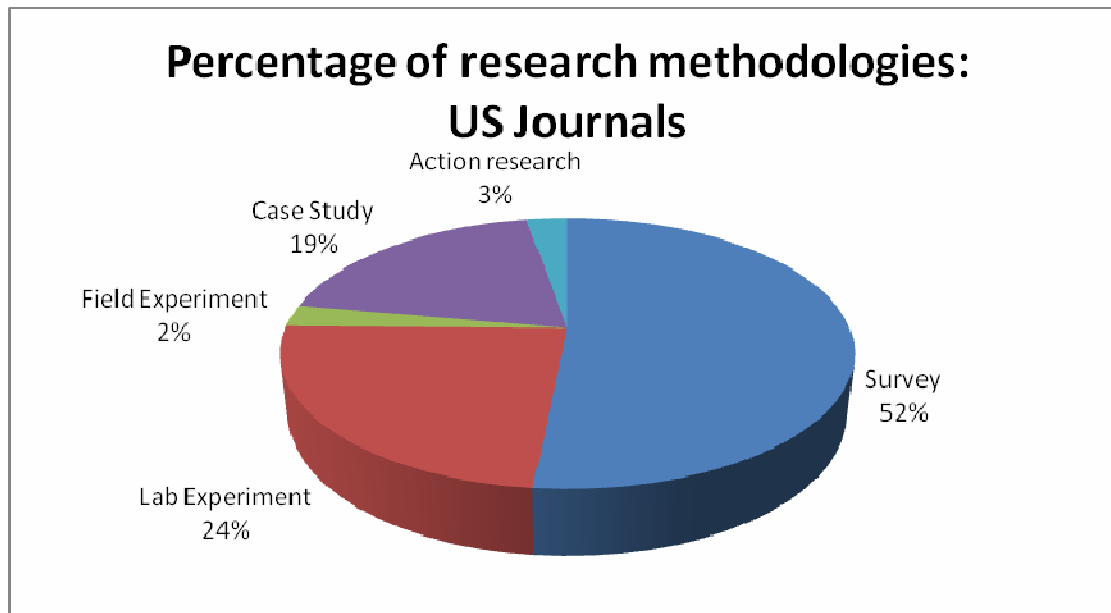
4.3   Research methods

Figure 5.   Research methods utilized within US Journals

As seen from Figure 5, the survey method is the most common method employed by articles in US-based journals, followed by lab experiment and case study research.
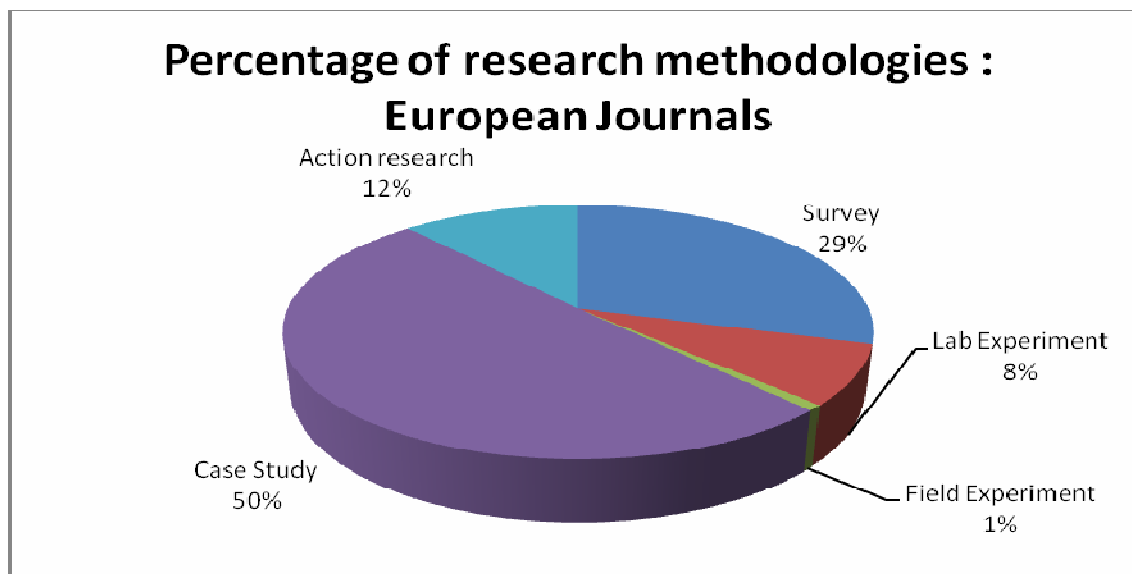

Figure 6.   Research methods utilized within European journals

As seen from Figure 6, the most common research method utilized by European researchers is case study research, followed by survey research and action research.

5   DISCUSSION

Our findings reveal that there is paradigmatic and methodological diversity within the AIS basket of top six Information Systems journals. All three paradigms are represented (positivist, interpretive and

critical), there is a mix of qualitative and quantitative research, and there is some variety in terms of research methods. However, we were surprised that the two European journals were not as different from their US counterparts as we had initially thought. For example, although there is a common perception within the IS research community that European research is mostly interpretive (Galliers & Meadow, 2003), our results indicate that positivist research is in fact more common than interpretive research in Europe as well as in the US. Also, while there were a few more critical research articles published in Europe, the numbers are still extremely small.

The same can be said if we compare the number of qualitative versus quantitative articles. Although more qualitative research articles were published in Europe, the differences are not huge. A closer look at the data for each journal (see Table 3) shows that *MIS Quarterly* was not far behind *Information Systems Journal* in terms of the total number of qualitative articles published (65 versus 75). However, the proportions are obviously different. MISQ published approximately twice as many quantitative articles as qualitative, whereas for ISJ the trend is reversed.

	MISQ	JAIS	ISR	EJIS	ISJ	JMIS
Quantitative	112	50	89	68	34	168
Qualitative	65	20	9	109	75	44
Mixed Method	13	4	4	17	5	10

Table 3.   Quantitative versus qualitative studies of all six journals

With respect to the research method, our results show that, overall, survey and case study research are the first and second-most common research methods respectively. These findings are consistent with results from previous studies. However, case study research was the most common research method in the two European journals.

The limitations of this study are as follows. First, we have limited our analysis to the AIS basket of top journals. This means that, by definition, we have excluded many other excellent IS journals, which would have given us a broader picture of the IS discipline. In particular, two journals were not included in our study, namely, *Journal of Strategic Information Systems* and *Journal of Information Technology*. These two journals were not included the AIS basket, even though the AIS Senior Scholars deemed them to be of equivalent quality to the top six. We suggest that one possible area for future research would be to classify the articles in these two additional journals, to give a broader picture of the IS field.

Second, we have based our approach on Chen & Hirschheim's (2004) categorization of journal articles. We acknowledge that there are limitations of this approach e.g. less well known research methods such as analytical modelling are only captured within the 'Others' category. Other classification systems are possible. However, we believe that the benefit of consistency outweighs these disadvantages.
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6   CONCLUSION

This paper has analyzed the AIS basket of top six academic journals in Information Systems. We surveyed 1329 articles in total from the following IS journals: *Management Information Systems Quarterly*, *Information Systems Research*, *Journal of the Association for Information Systems*, *Information Systems Journal*, *European Journal of Information Systems*, and *Journal of Management Information Systems*.

Through the application of bibliographic research, we found that 77% of all research articles in the top six journals can be described as positivist. Surprisingly, the positivist research paradigm is the one most commonly used, not only in North America, but also in Europe. Interpretive research represents 23% of all articles overall, although 40%, of all articles in ISJ and EJIS were interpretive. Critical research represented less than a 1% stake among the articles surveyed. The lack of critical research in the AIS basket of top journals suggests to us that more encouragement is needed for this kind of research, if the IS field wants to claim that the discipline is truly diverse (Richardson & Robinson, 2007).

With regards to research methods, we found that quantitative research is the most common with 58% share overall, with qualitative research at 36%, and mixed method research at 6%. However, qualitative research is the more common with the two European journals.

The most popular research method is the survey research method, representing 43% of all articles surveyed. Case study follows closely behind with 31%, lab experiment at 18%, action research at 6%, and field experiment at 2%. This order of preference is similar to that found in previous studies over the periods of 1990 to 2000, suggesting that IS researchers' choice of research methods is fairly stable.

In conclusion, this paper is one of the first to analyze the recently announced AIS basket of top journals. Comprising four US-based and two European journals, the AIS basket reflects the field's topical, methodological, and geographical diversity.

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